TWiV 1276 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 1278, recorded on December 11, 2025. I'm Vincent Racaniello, and you're listening to the podcast all about viruses. Joining me today from Colorado, and Daniel Griffin.

Daniel Griffin: Hello, everyone. Yes, I'm up here at 11,100 feet at the Mount Hayden Backcountry Lodge. It is spectacular. I love your background, Vincent, but my background's better.

VR: The pipe? I don't know about the pipe.

DG: [laughs] That's the wood fire stove there in the back, and that's the pipe heading up, and I'm looking out at U.S. Mountain in front of me.

VR: There's a mountain called U.S. Mountain?

DG: Can you believe that? Yes.

VR: Wow. Good for you. Is it really cold there?

DG It's cold outside, but it is very nice and warm here. That pipe that you were commenting on, a nice wood-fired stove, is warming things up, so I'm pretty excited here. We've got a lot to cover.

VR: No bow tie, right?

DG: I know. No bow tie. I got my Smartwool and my bunting. We have a lot to cover. We have so much to cover, Vincent, that I actually was like, I can't keep covering stuff. I'm going to save stuff for next week. Let's jump in with a quote from Rachel Carson. "The more clearly we can focus our attention on the wonders and realities of the universe about us, the less taste we shall have for destruction." What do you think?

VR: So true, yes. It's all driven by power and money, Daniel. Just look at the world around you. Cut it out. Stop being selfish, folks.

DG: Maybe if people could come and just spend a little time here at the lodge with me and just reconnect with nature and themselves and their family and friends, it'd be a little-

VR: You want Junior to come out with you and chat with him for a while? OK.

DG: OK, you're asking too much. All right. Let's move on. I only have so much empathy and compassion. All right. Just a heads up that we're having lots of norovirus activity. It's actually pretty high level, so a lot of winter vomiting disease. It isn't even officially winter. What's going on? Remember, you've got to really wash those hands with soap and water because most of this alcohol just doesn't do much. Why is that, Vincent? What's going on? Why can't I just use the alcohol and rub it all over my hands?

VR: Very stable capsid. In fact, the soap and water doesn't disrupt it. It just washes it off of your hands like surgeons, they, what, do they scrub for 30 seconds or something, or they used to?

DG: Yes, there's like a whole period of time, and you've got to get under the nails. It's a whole ritual, yes.

VR: It's really debriding your hands because the debriding, you're -

DG: Yes, debriding, yes. All right. I often see the transfer of soap and water, just transferring soap. You got to get in there. There's a benefit here. You don't want to be vomiting and diarrhea. Also, to alert parents to this headline, “Botulism Outbreak Sickens More Than 50 Babies and expands to All ByHeart Products.” The outbreak now includes at least 51 infants in 19 states. I think I shared previously, one of the first cases, my daughter was actually involved with the care. All right. Now we get to the challenging part.

I think it's really important that we talk about this. Recent changes and happy comments from the current ACIP members. Now, you notice I refer to these as comments because a lot of us, as you'll see going forward, we've relegated them to people making comments. We read in *CIDRAP* that after a contentious discussion, the Advisory Committee on Immunization Practices, ACIP, voted 8-3 to drop the recommendation for a universal birth hepatitis B vaccine dose and 6-4 to suggest that parents use serological testing, which detects antibodies in the blood to determine whether more than one dose of the three-dose series are needed.

Under the first recommendation, only infants born to mothers who test positive for hepatitis B would receive a birth dose, while parents of other babies would be advised to postpone the first dose for at least two months. Now, there was some good discussion, but it evidenced how much this is agenda-driven and not driven by any actual evidence of the best steps to protect our children. Presenter Tracy Beth Høeg, who is named acting director of the FDA Center for Drug Evaluation Research, questioned why the United States universally vaccinates newborns against hepatitis B when Denmark does not.

Now, in response, subject matter, Adam Langer, acting principal deputy director and associate director for science at the CDC's National Center for HIV, Viral Hepatitis, STD - that's sexually transmitted disease - Tuberculosis Prevention, said that the United States is unique in many ways. Among them, Denmark, the entire country, has only 6 million people. The population of New York City alone is 8 million people. More than 95% of pregnant women in Denmark are screened for hepatitis B. This is far higher than the number in the United States.

Prenatal care is free for both citizens and refugee or asylum seekers in Denmark. We all

know this is not the case in the United States. We don't have this universal healthcare. I guess maybe what they want to say is we don't have to do this, but we're going to give everyone universal healthcare. No, that's not what they said. Now, Canada was cited as another comparison, and Canadian analyses also support the need for a universal birth dose. Right there, why don't we stop, Vincent? It's crazy.

These are talking points of the anti-science people. These musings about how come in Denmark, why do we have to do it differently? How come in these small countries in Europe, we need to get more in line with them, but we're not getting in line in the big picture? We somehow just want to get in line in these weird anti-vaccine stances.

VR: It's used as an excuse because look, Denmark doesn't do this, so why should we? It's an excuse because countries are different, you idiots. For God's sake, the U.S. is totally different from every other country in the world in terms of its population, its public health. In fact, it doesn't matter if you screened 100% of pregnant women for hep B, you'd still have kids getting hepatitis B because before the birth dose in 1991, half of the transmission of hep B in the US. was not from the mother, was from other people who were infected. Dr. whatever, Høeg doesn't believe this. That's not about you believing it or not.

These are the facts that in the U.S., half the transmission is from mothers, half the transmission is from other people. That's why doing a birth dose has reduced hepatitis B to almost nothing in the U.S. If you want to go back to that, go to Denmark and tell them to do something different, Dr. Høeg. We don't want it here.

DG: I have another section. What do we actually know? Why is this bad guidance? Why are people, as we're going to get on in a little bit, really just not listening to these folks? First off is the *MMWR,* "Health and Economic Benefits of Routine Childhood Immunizations in the Era of the Vaccines for Child Program, United States, 1994 to 2023." *MMWR* from the CDC. This is from August 2024.

In this analysis, they look at the benefits of our current childhood vaccinations and find that among children born during 1994 to 2023, routine childhood vaccinations will have prevented approximately - ready for these big numbers? 508 million cases of illness, 32 million hospitalizations, 1,129,000 deaths, resulting in direct savings of $540 billion, and societal savings of $2.7 trillion. This is great because it doesn't just look at hepatitis B, but looking specifically at the benefits of hepatitis B vaccine, this one vaccine, hepatitis B vaccination, has prevented greater than 6 million illnesses.

Hepatitis B vaccination has prevented 940,000 hospitalizations and over 90,000 deaths. I'll leave it in the link to what's really a great resource. Now, to dive deeper, we have another document. This is from our friends. This is the document, "Universal Hepatitis B Vaccination at Birth: Safety, Effectiveness, and Public Health Impact, December 2025." This review looks at 400 studies spanning 40 years, finds no evidence that delaying the Universal Hepatitis B vaccine birth dose improves safety or effectiveness.

This review also finds that birth dose vaccination does not cause any short, any long-term, serious adverse events or deaths. They find that there was not any new evidence to suggest that delaying the birth dose would be safer or more efficacious. They did find that since the universal birth dose recommendation was adopted in 1991, nationwide pediatric infections have fallen by more than 95%, and infant infections have been almost completely eliminated. They found that the current vaccination schedule has helped prevent more than

6 million hepatitis B infections, nearly 1 million hepatitis B-related hospitalizations.

The birth dose reduces perinatal transmission by roughly 70% when used alone, and then when combined with hepatitis B immune globulin, protection increases from 83% to 97%. Birth dose vaccination, protection against hepatitis B, and related complications last more than 35 years. Delaying the first dose provides no immune protection benefit. As per that discussion, they also point out why the U.S. is not Denmark. They make better boats. I really like their cheese, but delaying the first dose makes infants vulnerable to missed maternal diagnoses as well as post-natal exposure.

In the U.S., about half of people living with the virus are unaware of their infection, and hepatitis B is highly transmissible and can survive on surfaces for more than a week. What's more, an estimated 18% of pregnant women do not receive hepatitis B testing, and only 35% of those who test positive receive the recommended follow-up care. Without protection, 90% of infants infected at birth will develop chronic infection, and 1 in 4 of these children will die prematurely of liver disease or liver cancer. Usually, you're the one who's all fiery up on the soapbox.

VR: Well, Daniel, when I used to teach medical students many years ago, the ones in the back row read *The New York Times*. I think Dr. Høeg is one of those doctors who read *The New York Times* and didn't learn the proper information about vaccines, and so that's what we're stuck with today. Any doctor that reads *The Times* during class, don't listen to them. I hope you didn't, Daniel.

DG: I did not. [chuckles]

VR: Good.

DG: I'm entertained that that would happen. Here's the deal. Here's a bunch of people that, really, they have an agenda. Many healthcare providers, doctors, medical societies, state health departments, a number of alliances, really basically rejected this, what we refer to as a proposal. The regional health alliances were formed in recent months, largely in states led by Democratic governors, to provide an alternative to the CDC, which really has lost the confidence of doctors across the country. This is reassuring.

Private health insurance plans will continue to cover the birth dose of the hepatitis B vaccines. Basically, the AAP, all of us are going to just continue actually doing what is scientifically appropriate. It's really interesting. Now, I'm going off script. I try to script a little bit. Now, I'm fired up. RFK Jr. is threatening, like, "Oh my gosh, this is not going to be the standard of care. If people start not following us, there'll be legal exposure." That's not true because -

VR: Liar. Liar.

DG: - he's a liar. This is evidence-based. This is the standard of care to actually protect children. It is not the standard of care to follow a bunch of anti-vaccine, anti-science folks. Yes, when these babies get infected, when these babies get sick, when these babies die, yes. In what way is that defensible? Some lawyer told me. OK. All right.

VR: Daniel, I'm afraid that in red states, the doctors are not going to do the right thing. Is that a reasonable fear?

DG: I don't think so. I think that this has gotten to the point, and I'm going to discuss this study that was recently - It's a survey. It's gotten around that these folks are not a source of reliable information. It appears that most people in the U.S. are aware of what has happened at the CDC and have stopped viewing this current group and the recommendations as worthy of really listening to. The National Foundation for Infectious Diseases, NFID, surveyed more than 1,000 U.S. adults from a pool of volunteers meant to reflect the U.S. adult population.

Only 13% are even listening or trusting what's coming out of the current CDC, which is really the equivalent of people trusting TikTok, Twitter, and other social media. Many, many more, almost half of the folks, who do they talk to? It's their healthcare provider. I know a lot of healthcare providers are frustrated. I was at a dinner last week talking to some of them, where they're just like, "I just don't want to have these conversations because people come in with their mind made up."

We need to have the conversations because most adults in the U.S. are going to listen to us, and about half or so will actually believe what we have to say. Kind of crazy. We're still on our anti-science. We still have just a couple more things to cover, and then we're going to rosy things like Marburg in Ethiopia. Now the, “FDA to Investigate Whether Adult Deaths Linked to Coronavirus Vaccine.” The FDA is doing a thorough investigation across multiple age groups of deaths potentially related to coronavirus vaccine, said Andrew Nixon, a spokesman for the Department of Health and Human Services, as if we were not doing post-license -

VR: Exactly right.

DG: - which is just like, oh, now seems like a good time to start looking into that in 2025.

VR: It's just offensive, as you say, as if it hasn't been done before. It's just absurd.

DG: Yes. You don't become like an infectious disease doc or primary care or pediatrician because you're following the money. Actually, you care about people. Also, in Reuters, “Exclusive - U.S. FDA Launches Fresh Safety Scrutiny of Approved RSV Therapy for Infants.” I was like, "OK, now they've crossed the line." Come on, right? This is like the monoclonal antibodies. This is what saved Trump's life, but now they're not sure.

U.S. health regulators informed senior executives at Merck, Sanofi, and AstraZeneca last week that their approved protective RSV treatments for infants would be subject to fresh safety scrutiny following concerns - ready for this? Raised by vaccine skeptics. Not raised by safety issues.

VR: No safety. Makary and Prasad, they got together, and they said, "Let's manufacture some mRNA-related deaths, and then we'll say we have to change all the vaccine safety stuff." That's what they did. They just manufactured stuff, and now here we are. We have to look at everything again. It's crazy.

DG: This really, I don't get. This was always like everybody was OK with monoclonal antibodies. These are not vaccines. These are let's give people the antibodies that they need to protect themselves. This is what, really, the Regeneron that they gave to Trump that saved his life. What's going on here? We'll keep talking about all the data about so many children that are being saved. Not only is it keeping out of the hospital, not only is it keeping

kids from dying of RSV, but all the kids who get RSV and then have asthma for the rest of their lives.

Marburg in Ethiopia. This is updated on the 10th, so just yesterday. Ethiopia's Ministry of Health has reported 13 laboratory-confirmed illnesses, including eight deaths from the Marburg virus disease. This is in the country's south and Sidama regions. Additional illnesses are under investigation, so we'll keep you updated there.

All right. Bird flu. The article, "Contemporary Highly Pathogenic Avian Influenza, H5N1, Viruses Retain Neurotropism in Human Cerebral Organoids," was published in *Open Forum Infectious Diseases*.

Briefly, they analyzed virus replication kinetics, cellular tropism, and host responses to infection in human cerebral organoids. You're going to have to explain to our listeners what those are, Vincent. They inoculated them with these highly pathogenic influenza H5N1 viruses, compared these to some historical clade I viruses and a 2007 seasonal influenza A virus. Really, the big thing we're finding here is it looks like viral antigen, and RNA were detected primarily in neuron and astrocyte-like cells.

Interferon responses to infection were observed in a small population of bystander cells. Higher levels of cell death and pro-inflammatory cytokines and chemokines were observed in organoids inoculated with the historical HPAI, so the highly pathogenic avian influenza, H5N1 isolate. In a nutshell, I'm basically seeing highly pathogenic avian influenza potentially having the ability to get into my brain. Is that fair, Vincent?

VR: Yes. The current clade, 2.3.4.4B, that is what they looked at here because the previous circulating clades had the ability to infect the brain, and this one still does. It retains that. What they do is they make organoids. It's very hard to get brain tissue and make cell cultures out of it. They take stem cells and differentiate them into brain cells, and they have properties of the brain. That's why they call them organoids. They're very useful. You can infect them with viruses and study them. That's what we find. H5N1 is a nasty virus. There's no doubt about it.

DG: It is. It is. All right. I'm going to encourage people, again, to get on the email list, maybe even subscribe to *CIDRAP*, a quick way to get some updates. Yes, here we read that LaGrange County, Indiana, is once again the site of several major commercial poultry outbreaks of avian flu, that's according to the updates from the USDA's Animal and Plant Health Inspection Service. LaGrange has eight detections affecting more than 100,000 birds, many of whom were exposed on commercial duck farms.

In Elkhart County, Indiana, 15,000 birds were affected in two commercial duck meat facilities. I've also got detections in Florida, Nevada, Vermont, and Washington. Avian flu has been detected among 97 flocks in the past 30 days, including 40 commercial flocks, 57 backyard flocks, affecting 1.08 million birds in total.

All right, screwworm. I'm worried about this. We keep hearing about this. Now, we're hearing Mexico has seen 92 human cases of myiasis.

This is this fly, the screwworm fly, so focus on the worm, the larva part, that actually will put these eggs in any kind of small breaks in the skin, and then the larvae will actually invade and just basically turn healthy tissue into Swiss cheese. It's horrific. Mexico has seen 92

cases caused by New World screwworm as of November 28. Cases have been detected in five states, including Oaxaca, Yucatan, Campeche, Tabasco, Chiapas. Chiapas has had 79 reported cases, 10 of whom are still hospitalized. There have been five deaths in infected patients this year.

VR: So much for eradication, right?

DG: We were doing so well. It's demoralizing. Now we have dead people. We have just horribly crippled people from this disease. Measles, more cases of measles. As of December 9, a total of 1,912 confirmed measles cases in the United States. Are we going for 2,000? Are we going to hit 2,000? Oh my gosh, what is the goal here? In Canada, Week 48, another 37 new cases. They're up to 5,298.

Hot off the press, just sent my way from a researcher who is down practicing south of us, who will remain nameless in our current environment. “Hundreds Quarantined as South Carolina Measles Outbreak Accelerates.” This is really accelerating in the wake of Thanksgiving travel, lack of vaccinations. This is what we hear from the state's Department of Public Health official. They've traced a sizable outbreak to a church in the state's northwest. Of the 111 measles cases recorded in that area, known as the Upstate region, 105 involved people who were unvaccinated. Three were partially vaccinated.

VR: What have we got here, adults mainly, or kids, or what?

DG: I didn't really get a chance to dive too deeply. I'm going to leave a link into this *Washington Post* article. Let's see if we can see here.

VR: I can't. It's paywalled.

DG: Somehow, I'm able to get in. This is pretty cool. Well, I'm a *Washington Post* subscriber. Yes, no, I'm not seeing that we get as much information as we'd like. We'll keep people updated on that. Yes, you've got to subscribe to T*he Washington Post*.

All right, flu. I actually pasted the SARS-CoV-2 activity here in the flu, but don't worry. You ignore that, Vincent, because we'll put that somewhere else. What I do have, what we'd like to have in this section, is our multicolored map of the U.S. What is this?

I feel like people have been following my travel history, because we've got a lot of activity going in New York, cranking up in New York City. Colorado's also a hotspot. Actually, we're entering the flu season. We're really starting. If you look at the epidemic trend, it is growing in almost all over the country. We're really heading into the flu season as predicted. In early flu season, we should get a peak here in December, January.

VR: Looks like you should be going to Louisiana next, Daniel.

DG: I might have to head down there, you know? All right. A comment for my fellow New Yorkers, from out here in Colorado, from Spectrum Local News. The number of children dying from the flu is slowly rising in the state. According to Department of Health data, in the 2021/2022 season, three children died. The next season, there were 14 child deaths. 20 more kids died the year after. Last season, we had 27 children who died from the flu in New York just last winter. That's making up this 280 influenza-associated pediatric death that occurred last winter.

Now, only 4% of the kids that died from the flu were vaccinated. All right. Really disheartening there.

All right. RSV. We are full-fledged into the RSV season, and you can really just see that growing increase. One of the ER docs at the hospitals was asking, when are we going to see this tripledemic? We're heading right into people getting flu, COVID, and RSV. Should we take RSV seriously? Is this just a problem for children? Well, yes, we should take it seriously. We have a couple articles to talk about.

The first is the article, "Intensive Care Unit Stay and Mechanical Ventilation Among Adults with Respiratory Syncytial Virus Related Hospitalization by Age and Comorbidity Status," published in *Infectious Diseases and Therapy.* These are the results of a retrospective cohort study conducted using Optum Market Clarity Database to identify RSV-related hospitalizations among adults aged 18 or older. A total of 13,734 RSV-related hospitalizations were identified, including 11,838 unique patients.

Of these, 10.2 were considered low risk, but 89.8%, so 90%, were considered high risk. ICU admissions occurred in 31.2% of the RSV-related hospitalizations. About a third of the folks that end up in the hospital with RSV end up in the ICU. Higher-risk younger adults had higher percentage of ICU admissions than older adults at low risk. Just taking it seriously. People are ending up in the hospital. We're seeing deaths. We're seeing folks end up in the ICU. Not only just the acute. You survive, you make it out of the hospital, maybe you didn't die.

Then we have the article, "Cardiovascular Events One Year After Respiratory Syncytial Virus Infection in Adults," published in *JAMA Network Open*. In this first article, following people a little farther down the road, we find in the cohort study, 17,494 matched patients with and without RSV infection. RSV infection was associated with 4.69 additional cardiovascular events for every 100 older individuals with infection in the year following RSV. Think about this. You get RSV. Now you have an additional 5% chance of a cardiovascular event in the next year.

Over the observed 365 days after this time zero, 665 cardiovascular events occurred among 8,747 individuals with RSV infection, only 257 among the matched individuals without infection. A total of 922 cardiovascular events, over 70% were attributable to RSV infection.

VR: Similar things we've seen with COVID and flu, right?

DG: It changes this paradigm. We're always worried about our blood pressure and our cholesterol, but here we're seeing the majority of cardiovascular events attributable to infections; 70% just RSV. As you mentioned, we've talked about flu, we've talked about COVID. How many people have a cardiovascular event who've not had a viral illness in the last year? It's becoming vanishingly small. These other things may set you, yes.

VR: Seems to me that maybe people should get vaccinated, right?

DG: Oh, man, that's crazy. Crazy talk, Dr. Racaniello.

VR: Sorry about that. I'm sorry.

DG: [laughs] All right. Hopefully, people knew that that was sarcasm because, yes, we really

are encouraging. Listen, if you haven't done it so far, and I know the majority of adults in the U.S. and the majority of children, majority of folks in the U.S. have not gotten vaccinated, there's still time. Get that flu shot. Get that COVID shot. If you're eligible, get that RSV shot because even more news about RSV, "LongTerm Illness in Adults Hospitalized for Respiratory Syncytial Virus Disease, United States, February 2022, September 2023," published in *EID*.

Here, they surveyed adults, 18 or older, who survived hospitalization for RSV or COVID-19 during February 2022 to September 2023. They do these physical functioning quality-of-life surveys six to 12 months after hospitalization, right? Six to 12 months. This is way down the road. They compared outcomes after RSV hospitalization by age, so folks under 60, 60 or over, to those hospitalized for COVID-19. They do all these models. Among 146 adults hospitalized with RSV, 27.4%, six to 12 months, reported severe breathlessness, and 21.9% poor quality of life at follow-up.

Few differences were seen in post-hospital illness by age. This was not just the old folks. After adjustment, participants with RSV had 1.81 times, so almost twice the increased odds of worse dyspnea than those with COVID. Oh my gosh, worse than COVID. Participants reported functional and quality-of-life impairments after RSV hospitalization, regardless of age. Yes.

VR: It seems to me that people should start looking for some of those Long COVID metrics in this patient population.

DG: Yes, like a post-infectious viral RSV syndrome. Yes. That's what we're seeing here. Now, what to do about it? Well, we have another nice article in *The Lancet Infectious Diseases*, "Effectiveness of the Maternal RSVpreF Vaccine Against Severe Disease in Infants in Scotland, UK: A National Population-Based Case-Control Study and Cohort Analysis." As per the title, these are results of a retrospective, nested case-control study with a cohort sensitivity analysis. The source population comprised all singleton live births in Scotland. What you could do with a health system like that between August 12, 2024, March 31, 2025, as recorded in the Scottish-linked pregnancy and baby dataset, the SLiPBD, I don't know how you pronounce that, SL, little i-P-D. During the study period, 27,565 singleton live births were recorded in this database. 50% of the pregnant women got that RSV vaccine. 92% were vaccinated more than 14 days before delivery, because you want to hopefully have enough time. 354 infants aged 90 days or younger had an RSV-related lower respiratory tract infection hospital admission during the study period.

Adjusted vaccine effectiveness against RSV-associated lower respiratory tract hospital admission was 82% in the vaccinated infants. This translated to 219 RSV-related lower respiratory tract infection hospital admissions averted just during the study period. Over 200 little babies end up not in the hospital. What are these folks here in the U.S. trying to do? Trying to attack what is just incredible therapeutic. They want to live in a world.

VR: Insurance companies will pay for this vaccine and not have to pay for hospitalization.

DG: Isn't it crazy? It actually makes sense. All right. You can pay for the vaccine, or what about that monoclonal antibody that I was railing about before? The article, "Effectiveness of Nirsevimab" - that's getting a monoclonal antibody - "in Preventing Respiratory Syncytial Virus-Related Burden: A Test-negative Case-control Study in Infants with Bronchiolitis in Lombardy Region, Italy," published in *Pediatric Infectious Disease Journal.*

A single-center study provides an estimation of the nirsevimab effectiveness in infants after its recent introduction. 82% in preventing RSV infection, 78% in preventing RSV associated hospitalization, 84% in preventing pediatric ICU admission. Amazing stuff.

VR: Tell me, Daniel, what famous city is in Lombardy, Italy? Don't look it up.

DG: I have never been to Italy.

VR: That's a problem. You go all over the place, but Italy is a lovely country.

DG: I'll go there next month.

VR: Yes, yes, right. Milano is in Lombardy.

DG: Oh, OK.

VR: All the way up north, right on the border of Switzerland.

DG: OK. I will have to go visit. Actually, I'm going to go to Rome next month. It'll be my first visit to Italy.

VR: Rome is lovely, also.

DG: All right. COVID, look, I pasted it in. Looking at our wastewater, we're seeing SARS-CoV-2 activity is high, but the data from the CDC, we haven't really seen it shoot up yet. What's going on there?

VR: It's still pretty flat, isn't it?

DG: Yes, still pretty in the low region. We'll have to see what's going on. See if I trust -

VR: It's almost two weeks behind. Who knows if we should trust this?

DG: I think that's the problem, too. The data we're seeing in our wonderful multicode lines is from two weeks ago. If you're going to provide data, you've got to actually provide it in a timely manner. We'll keep an eye because I do like this stuff. Just to let people know, the activity does seem to be not only high, but it looks like it's growing in a lot of parts of the country, particularly up in the northeast. All right. Moving into the COVID vaccine section. This is a great study.

This really is one to have in those discussions when people are wondering, I don't know, to vaccinate, not to vaccinate, what's a better choice? Then everyone's like, "Well, OK, I can understand older folks, but not those younger folks. That's crazy talk." Here's the article. :COVID-19 mRNA Vaccination and 4-Year All-Cause Mortality Among Adults Aged 18 to 59 Years in France," published in *JAMA Network Open Public Health*. Very straightforward study where they looked at all four-year all-cause mortality in individuals aged 18 to 59 years vaccinated with the mRNA COVID-19 vaccine versus unvaccinated individuals.

They performed a cohort study that used data from the French National Health Data System for all individuals in the French population in this age 18 to 59 range that were alive November 1, 2021. A total of 22,767,546 vaccinated, 5,932,443 unvaccinated individuals were followed up for a median of 44 to 46 months, about four years. Now, vaccinated

individuals were older than unvaccinated by about a year, more frequent women, 51.3 versus 48.5, more cardiometabolic comorbidities, and that was a couple percent higher in the vaccinated folks.

We're already a little worried that we got a little bit older, a little bit sicker people in the vaccinated group. But, during follow-up, vaccinated individuals had a 74% lower risk of death from severe COVID. Here's where it really gets interesting. Vaccinated individuals had a 25% lower risk of all-cause mortality. Isn't that crazy?

VR: Not just COVID, which was great, 74%, but everything else, 25%, right?

DG: Remember when we were hearing all those people who get better, you're going to be dead within the year, and actually, yes, pretty amazing.

VR: No, these are the facts, folks, not the crap that the administration is giving you.

DG: Really amazing. All right. "Two-year Prognosis of mRNA Vaccine-related Myocarditis Compared with Historical Conventional Myocarditis: A Population-based Cohort Study," published as a letter to the editor in *CMI.* For all those bots who keep saying we never talk about vaccine-related adverse events, here we are discussing a vaccine-related adverse event. I want to start with the first part of this letter. Extensive research has demonstrated the safety and effectiveness of mRNA vaccines in mitigating the impact of the pandemic. However, myocarditis remains a concerning potential adverse event following vaccination. Generally, the prognosis of post-vaccine myocarditis has been reported as mild and self-limiting compared to other causes. Now, they did a previous study. In the previous study by these authors that was done in Hong Kong, they confirmed a lower mortality rate within 180 days follow-up for post-vaccine myocarditis compared to conventional viral myocarditis. Studies from four Nordic countries and France also reported similar results.

However, certain symptoms and diagnostic abnormalities persist even after one year of follow-up. They link all this, which is nice. Now, a cohort study with longer follow-up period is needed to detect potentially long-term adverse events that take longer to emerge and ascertain the safety profile in the longer term. This study, with a follow-up exceeding two years, aimed to explore the potential differences. We're looking at post-vaccine myocarditis versus conventional other causes of myocarditis.

Now, they go to the results of this retrospective cohort study conducted by connecting routine healthcare records from the Hospital Authority of Hong Kong with vaccination records from the Department of Health. Final cohort, 912 patients, 109 with myocarditis-followed mRNA vaccine, 803 with historical conventional myocarditis. After adjustments with covariance, vaccination-related myocarditis presented a lower risk of all-cause death.

Adjusted hazard ratio of 0.2, so about 80% lower risk of death within a follow-up. Patients with myocarditis had significantly decreased risk of developing heart failure. Adjusted hazard ratio of 0.17, so 83% lower compared to conventional myocarditis. This really is mixed news, because vaccine myocarditis is different, tends to be mild, but in this series, there were two deaths, and these were assessed to be due to vaccination.

VR: I could not get this article, so how do they know these were due to vaccination?

DG: That's the challenge. They were determined, they were assessed, they were suggested

to be due to vaccination. Yes.

VR: Yes, I think you have to be very careful when you say that, right?

DG: Yes.

VR: We're criticizing Prasad of saying 10 mRNA deaths in children without presenting the data.

DG: Yes. That is tough because they're presenting this, and as mentioned, this is a letter to the editor in *CMI*, so lacking, I think, the depth. What is that? When you make a claim, you need a higher level of evidence to support it.

VR: Yes. I'm not saying that vaccine myocarditis cannot cause death. We just need to have the data that shows it, right?

DG: Yes. What is really consistent here with all the other studies is that we're actually, we keep saying, "Oh, it's milder, it's a different animal." Yes, it is a different animal. It is not like, "Oh, we can count apples to apples." You get myocarditis after a vaccine, majority of the time it's milder, 80% lower risk of all these bad outcomes. It is not the same thing.

All right. COVID early viral phase, still very similar recommendations with early effective antiviral therapy in folks at risk of progression. Early inflammatory phase, targeted anti-inflammatory therapies. We continue, unfortunately, to see a growing number of individuals developing Long COVID. I'll leave in some links for some folks there. We're going to wrap up this section before we get into our emails with, as we've been saying for a while, no one is safe until everyone is safe. I want to thank everyone so far who's donated. We're in our MicrobeTV fundraiser. We're doubling your donations. We want to get up to a maximum donation of $20,000 to support *MicrobeTV*.

Go to Parasites Without Borders. Click the Donate button. Even a small amount helps. Bigger amounts, they help, too. Really, if you want us to keep doing what we're doing, and if you want to help us help *MicrobeTV*, go to parasiteswithoutborders.com and click Donate.

VR: It's time for your questions for Daniel. You can send yours to Daniel at microbe.tv. Rick writes, "I recently received the text from the CDC's V-safe asking if I've recently received an RSV or COVID vaccination. When I attempted to sign into my account, it stated that if my account was created before October 2023, I need to create a new account. This gave me pause and time to reflect if providing V-safe information is still a good idea.

My concern is that if I truthfully answer that I had a sore arm and felt out of sorts for a day after receiving a vaccine, that information might be weaponized to push the vaccines are unsafe agenda. I realize that following the departure of Dr. Monarez, current leadership at the CDC probably has no interest in manipulating real data when it's easier to manufacture data, but I really don't want to provide them with additional ammunition. I would appreciate your thoughts on whether V-safe is still worth supporting." I also got a text as well, and I didn't answer it. What do you think?

DG: Oh, really? Oh, my gosh. I do worry. Why are these texts going out? What are they trying to do? Who's generating those texts? It's really a bad place we're in. I shared early on, just most of us have lost faith in the current folks at CDC. It's basically been taken over. It's a

coup, and they've come in with all these people just really there to advance their agenda. I'm worried. What are they going to do with what gets - Used to be we were trying to understand what was going on. We had an honest commitment to the truth.

We had a commitment to helping fellow human beings, but it's very clear what the commitment and motivation is for the current folks that are in these roles.

VR: When I got the first COVID vaccine years ago, I was asked to register for the CDC V-safe program, and I periodically would get texts from them. When I got an RSV vaccine, I told them about that, but I don't see why we have to create a new account. I'm very suspicious of that, so I'm not doing it. I don't trust the CDC. I'm sorry, there are good people still working there, but management, forget it. Connie writes, "Thank you again for your dedication to giving us much-needed and reliable information about viruses. I've been listening since COVID started.

I'm 76, and 11 years ago had Pneumovax 23 and Prevnar 13 vaccines. I got pneumonia following a cold about three years ago. I haven't been sick since. Never had COVID. I have intermittent mild asthma and asked my allergist about getting Prevnar 20. He said that due to my history, I'm eligible. My question is, is there any reason not to get Prevnar 20? Is the safety profile the same as that for other pneumonia vaccines? Since it's relatively new, is there enough information on side effects, such as Guillain-Barré, the main thing I'd be worried about? Thank you so much for your opinion."

DG: Yes, no, thanks, Connie. Prevnar 20 is effective. It is very safe. I got the Prevnar 20. My wife got the Prevnar 20. You're eligible. I really think there's every reason to get Prevnar 20. It's really been a gradual tweaking of adding extra from the 13 to the 20, so really not seeing any new safety issues there.

VR: I got it too, Daniel.

DG: Go for it. Try to keep you around, Vincent.

VR: Mandy writes, "With respect to the celiac plexus study, Dear Daniel, I'm a primary care doc with abdominal pain after COVID. I've noticed a good number of those with gastroparesis. I hope those doing the study can consider looking at gastric emptying studies before and after the block. I can see this as tricky, as so many with gastroparesis can need three studies before they meet criteria."

DG: Now, Mandy, this is excellent. It's always great when you can have objective data. This was the study we talked about, where they're targeting this imbalance between the parasympathetic and the sympathetic and trying to block that exaggerated sympathetic tone by doing the celiac plexus blocks. Really great to do gastric emptying studies before and after the block and see if we get some objective data there. Helpful, thankful suggestion, Mandy.

VR: Alice writes, "Your information about the shingles vaccine and dementia has put getting it on my to-do list for 2025. However, when I was a child, I had multiple chickenpox infections before I seemed to develop immunity. I remember at least three were diagnosed and possibly four, although I think all but the first were mild. Should I have any special concerns about getting shingles vaccine? I'm 71, active and healthy, except for a tooth. I've avoided all infection for the past five years. Never had COVID. My husband got it once. I still

mask up when shopping."

DG: Yes. If anything, it would make me want to encourage you more to go ahead and get the shingles vaccine because something's up. Certainly, as we see this, we see individuals who get multiple chickenpox infections, not unheard of. There's probably something about your immune system where you didn't just get the one and then maintain immunity from chickenpox infection, and that risk of reactivation to shingles. Yes, 71, definitely long overdue, time to get those shingles vaccines.

VR: Susan writes, "I'm writing with a question about research showing a positive impact of shingles vaccine on dementia outcomes. On the show released on December 6t Dr. Griffin noted that we may be learning that the reactivation of VZV, varicella zoster virus, is a possible cause of or contributor to dementia. As someone who had shingles in their 50s and then got Shingrix vaccine as soon as it was available 10 years later, I'm wondering when any of the research on the positive effect of the vaccine disaggregates those who never suffered from shingles from those who had shingles and then later got the vaccine. Do we know whether there is a positive effect for the latter as well as the former? If so, is it strong?

DG: That's a great question. I think a little deeper than we're able to dive at the moment. Our data is looking at shingles recurrence. Someone who gets shingles, they ask the question, "Should I go ahead? Should I still get the vaccine? I already have shingles. We usually say, "No, you should because you are at risk of getting shingles again." We know vaccination reduces that, but we really don't know about the correlate here, people get shingles or not, and their risk of dementia relative to vaccine.

We did see in those studies when they looked at people that were quickly treated with an antiviral, such as Valtrex, that there was a positive effect by jumping in quickly with the antiviral. Not sure we have granular enough knowledge with the vaccine studies around dementia.

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

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

[music]

[00:50:17] [END OF AUDIO]