Sawbones 581: Hantavirus

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["Medicines" by The Taxpayers plays]

Justin: Hello, everybody, and welcome to Sawbones! A marital tour of misguided medicine. I'm your co-host, Justin McElroy.

Sydnee: And I'm Sydnee McElroy. Justin, we need to jump right into it this week.

Justin: Well, yeah, Syd, we've got more requests this week, you think, maybe than any other topic.

Sydnee: In a concentrated period of time—I'd have to search through all of our recommendations for topics, ever, to really like give you a definitive statement. So, I do not have data to back this up. But I believe this feels like I have never gotten this number of requests for a single topic in such like a quick succession, like—

Justin: Yeah.

Sydnee: In such a concentrated—

Justin: In fact, this is a—

Sydnee: Amount of time.

Justin: First for us. You have live tabs available from the Sawbones news desk.

Sydnee: [chuckles]

Justin: Live tabs open, as coverage is coming in here.

Sydnee: I do. Of course, we're talking about hantavirus. I cannot thank everyone who suggested this topic, because there were a lot of you, in addition to a lot of people I know personally in my life, who have come up to me frantically over the last few days saying—

Justin: In case you didn't hear.

Sydnee: "Please tell me about hantavirus." [chuckles]

Justin: All right, so Sydnee.

Sydnee: Yes.

Justin: I, in sort of a tribute, a loving sort of sacrifice, have stayed largely ignorant of this topic, because I knew that we would be discussing it this week.

Sydnee: [chuckles]

Justin: Normally, you know me, I'd be reading *all* the headlines on everything that's going on.

Sydnee: So, wait, there is a—there is an outbreak of a virus happening somewhere on planet Earth, and you have intentionally been avoiding knowing anything about it.

Justin: Yeah, because we're going to talk about it on the show, so I want to come in fresh.

Sydnee: Oh, okay.

Justin: That's all.

Sydnee: I wouldn't recommend that, like intentionally staying ignorant about things.

Justin: Yeah, you will definitely—in my case—like again, not medical advice or opinion, it's for fun. Like I'm just saying, for me, for Hoops, if it's serious enough, you will definitely tell me like—

Sydnee: I will.

Justin: "But wash your hands." Or like—

Sydnee: I mean—

Justin: "Don't forget to wash your hands," or—

Sydnee: Always wash your hands, like just—

Justin: "You didn't wash your hands!" Stuff like that.

Sydnee: Brush your teeth.

Justin: Brush… yeah, "brush your teeth," sometimes.

Sydnee: So, we've talked about Hantavirus—I looked back, because I thought we did an episode on it, but what I found was that we talked about English sweating sickness at one point, which historians think may have been Hantavirus, actually. So, I—we talked about it in that context. I don't know that we've done a whole episode on it, at least my quick search, I didn't—

I didn't see the transcript, if we did. But I am going to talk a little bit about what Hantavirus is, and then I want to focus on what's happening right now. Because I think the reality is… since we have all now experienced COVID—and I don't necessarily mean that you've had COVID, I just mean now that COVID is part of our lives—

Justin: You probably had COVID, though, probably.

Sydnee: Statistically, most of us have. But whether or not you have, we've all—it has shaped us. It continues to shape us.

Justin: Mm-hm.

Sydnee: Right? And so I think that, as a result, our response to this news about Hantavirus is very heavily being influenced by that experience.

Justin: Sure!

Sydnee: Right?

Justin: We have some trauma that we are—I mean—

Sydnee: Yeah, yeah.

Justin: Trauma in the literal sense of like, you know, baggage, I guess, that we're bringing to it. [chuckles]

Sydnee: And Hantavirus is a very serious virus. We're going to talk about that. And I think that to take anything lightly after what we experienced with COVID, especially on this podcast, where initially we were not terribly concerned about COVID—

Justin: Yeah.

Sydnee: And we were wrong, I'm not going to sit here and say, ah, don't worry about it. Because that's a—I think that's an ignorant response.

Justin: Fool us once.

Sydnee: I will say, and we'll talk about all the reasons why, I do not—this is not COVID. This virus is not COVID.

Justin: It's Hantavirus.

Sydnee: I mean, literally. And our expectation that we would have a global pandemic on the scale of COVID from Hantavirus, is that we would not, that

it would not be that threat. And there are many, many infectious disease specialists who are speaking on the news, who are being interviewed, who are talking privately in the various groups that I'm in, that we probably should not be panicking like we are. It's understandable, because of COVID. And we should always take things seriously.

Justin: Mm-hm.

Sydnee: But this is not COVID, this—there is no expectation by experts that we are looking at COVID 2. Okay?

Justin: Okay.

Sydnee: So, Hantavirus is actually a family of viruses. And the one that we are concerned about is in a genus called the Orthohantavirus. And there are several different species within—lots of different species within that genus, and they can cause different clinical syndromes. Their natural reservoirs are rodents.

Justin: Oh, okay.

Sydnee: Each species of rodent can carry its own species of Hantavirus.

Justin: Always super happy to have my natural distrust of rodents reinforced by science. It's not fear if it's science backed. Do you know what I'm saying?

Sydnee: That's true.

Justin: That's not a phobia, if they're nasty little disease balloons. It's just common sense!

Sydnee: [chuckles] They do—they do carry this disease. And for rodents, they tend to cause just like long, asymptomatic infections. But then if they get passed to a human, obviously we can get sick.

Justin: Great. Thanks, rats. Always so good to have you in the mix.

Sydnee: There are two, primarily, two different clinical syndromes that we tie to Hantavirus when a human becomes infected. And it depends where and what species of Hantavirus you've been infected with, as to which of the clinical syndromes you're going to experience. So like, you'll see 'em referred to kind of as either like Western or Eastern strains, or old world, new world, that's often… That feels weird to me that we still say that, old world and new world. There were many articles I read where they're like, "Well, this is a new world strain of Hantavirus."

Justin: It's a very non-specific—yeah, what does that mean?

Sydnee: Western. Like, the Western world.

Justin: The Western world.

Sydnee: Is the quote/unquote—anyway, the—[chuckles] In the Western world, and including the US, there's a species of Hantavirus that we have seen in the US, people tend to develop what's call—what's called Hantavirus pulmonary syndrome. Hantavirus pulmonary syndrome is a disease, as you may affect—as you may imagine, affects the lungs.

Justin: Mm-hm.

Sydnee: Primarily. It's very severe, and it is potentially fatal. And that is what we're going to talk about a lot. Your symptoms start up anywhere from one to eight weeks after contact, typically with an infected rodent.

Justin: Mm-hm.

Sydnee: That's part of why I think people are kind of freaking out a little bit about this.

Justin: Because rats are gross.

Sydnee: Well, Hantavirus, most of the time, the vast majority of the time, is caught directly from the rodent.

Justin: Mm-hm.

Sydnee: It's rare that it's human to human.

Justin: So, that is the cause for concern here. It's the transmission from person to person.

Sydnee: We knew this could happen, I think we just took for granted that it could happen. There are some researchers arguing that we should have been looking into this more, that we had found a strain that could be passed human to human, and we weren't researching it enough, basically.

Justin: Okay.

Sydnee: Anyway, so, the symptoms of—

Justin: Classic us.

Sydnee: HPS, that's the pulmonary syndrome, the thing that we're worried about, starts off with like kind of flu like stuff; fevers, you're tired, you might be achy. And it can progress into something pretty severe, where you become short of breath, you're coughing, and you can go into respiratory failure. Basically, your lungs can fill with fluid.

And that progression from symptom onset to the severe, you know, respiratory failure, can actually happen pretty quickly for some patients. So, it can be—not only is it scary because it can be fatal, but I think that dramatic presentation where you can go from "I kind of feel like I have the flu" to being in an ICU on a ventilator, maybe needing, you know, extra support past that, that can be very scary, right? Something that dramatic, you know?

Justin: Mm-hm.

Sydnee: So, I think that's part of it. And like I said, people who do develop the severe symptoms, 38% is our estimate, will die from the disease. So, it's a high number. It's a high fatality rate.

Justin: Yeah.

Sydnee: Right? That's a very—

Justin: It's serious, obviously.

Sydnee: Yeah. And in the US, typically the deer mouse is responsible for transmitting this. Like I said, different rodents, different species.

Justin: Mm-hm.

Sydnee: There is, just to mention, because many people when this first like kind of popped up in the news, started talking about like, oh, great, now we have a hemorrhagic fever. What we're talking about is the kind of hantavirus that causes this lung problem. There is, in the east, when we talk about the eastern strains or the, I guess, old world, if you will, strains of hantavirus, there is a hemorrhagic fever with renal syndrome that can develop. So, it's like a different clinical picture that can also be tied to hantavirus. Again, it takes a week or two after exposure. It could take up to eight weeks.

Justin: Mm-hm.

Sydnee: Similar symptoms at first, except instead of progressing to a lung problem, it progresses to internal bleeding and kidney failure.

Justin: Mm-hm.

Sydnee: So, again, you can imagine this would be a very dramatic presentation. This is why—like, I first learned about hantavirus when I read The Hot Zone.

Justin: Oh, it's very dramatic.

Sydnee: They talk about it in it.

Justin: Yeah.

Sydnee: Yeah. It's not—it's not Ebola and stuff but—

Justin: Cinematic, even.

Sydnee: Yes! And so, that's, you know, I think that people pay attention to it, because it is dramatic. But that is not what is happening in the news right now. If you're interested, I think this is always a—on a historical note. In the US, the hantavirus that we see most commonly, like I said, is from the deer mouse. We first isolated it, the US', our own personal hantavirus, in 1993. There was an outbreak in Canyon de la Muerte, on a Navajo reservation. And they, you know, it was the pulmonary syndrome, just like I described.

Justin: Right.

Sydnee: People were progressing from flu-like illness to this lung problem very quickly, and people were dying. And they initially called it the Muerte Canyon hantavirus.

Justin: Mm-hm.

Sydnee: That was what the first name of this—

Justin: Haunta or hanta?

Sydnee: Hanta.

Justin: What are we going with?

Sydnee: Hantavirus.

Justin: Okay, hantavirus. Gotcha.

Sydnee: I don't know, haunta sounds—

Justin: In my he—I—

Sydnee: Fancier, doesn't it?

Justin: I can't not think about Fanta.

Sydnee: Fanta virus?

Justin: Yeah, and I know that's not right, but the—in my head it's—the first time I heard "hantavirus," those Fanta ladies were in there. Like that's what popped up. And now that's like the association is like, if you say "hantavirus," I see those ladies dancing and they say, [sings] "Fanta-wanta. Don't you want a Fnata-Fanta?" And so it's Fantavirus and I'm—that's not appropriate, ladies. You know what I mean? Like, that's not a good visual—that doesn't help.

Sydnee: And I don't think—

Justin: Me to remember it.

Sydnee: I don't think Fanta would want that—

Justin: I am—

Sydnee: Association.

Justin: In much the—do you think—[laughs] You think maybe there's already been a call from the CEO of Corona to the CEO of Fanta like, "Listen…"

Sydnee: You're gonna—

Justin: "You think you got it tough?"

Sydnee: [chuckles]

Justin: "This jerk over at Sawbones is trying to connect you—the dots for you. For us, it was just the thing. Like, the thing was—"
"Yeah, no kidding."
"Okay, bye."

Sydnee: Well—

Justin: "See you at the golf course."

Sydnee: This is a—okay, this is a great lead into this. So, just like Fanta—

Justin: No kidding? [chuckles]

Sydnee: Just like Fanta would definitely not want us to call this the Fantavirus, because then you're associating a potentially lethal virus with their product, the Navajo Nation did not want Muerto Canyon linked to this new virus.

Justin: This is the thing on sawbo—the—we—

Sydnee: Yeah.

Justin: We've deci—we've decided this before, we—you often have regions who are like, "No, it's actually a German flu."

Sydnee: Yeah, "We don't—"

Justin: "If you trace the little red dot from the Indiana Jones movie, you see it started over here, the—"

Sydnee: Remember, the Spanish flu is not the Spanish flu.

Justin: Not the Spanish flu.

Sydnee: It was not the Spaniards' fault. But the—so then they started, the virologists were like, "Well, we'll call it the Four Corners virus." Because in that part of the United States where—if you're not from the US—if you're from the US, this is one of the few geographies you probably know. You're like—there are those four states that are kind of square, and they have an area where all four of them touch, because they're square. And if you stand there, you're in four states at once.

Justin: So Four Corners.

Sydnee: So, if you—if you don't live in the US, now I've just described to you what the Four Corners are.

Justin: Yes.

Sydnee: That's where Four Corners of the four states meet.

Justin: Yeah.

Sydnee: Okay. Anyway, because it has that sort of tourist draw, I mean, there's other stuff there, right? But like, I guess the novelty of being in four states is one—at once is also a tourist draw. There were a lot of people from all those states who were like, "Oh, we don't really want you to call a virus this!" Like, "Please don't name a virus after that, because we want people to come do this, for tourism money." And so eventually—

Justin: How long do you think it took those four states to figure out who got like, who gets the gift shop, who gets the toilets?

Sydnee: Do they all?

Justin: They can't? You know what I mean? Like—

Sydnee: No, but like you could have one in each.

Justin: I don't know? Do they have it like come to—come to the…

Sydnee: I've never been there.

Justin: And I was trying to pull one of the four. [chuckles]

Sydnee: I mean, you could probably pull up like a Google Earth picture of—

Justin: I'm not gonna—

Sydnee: The Four Corners, if you wanna look at it.

Justin: I'm too embarrassed that I don't know, so I'm just gonna pretend like I do know and I just didn't—it just didn't come up. [chuckles]

Sydnee: Okay. Eventually, they named it the Sin Nombre virus.

Justin: Probably Colorado. [chuckles] Dang it.

Sydnee: No.

Justin: Now I have to look.

Sydnee: You can look. But eventually, they named it the Sin Nombre, no-name—

Justin: That's a good one.

Sydnee: The no-name virus.

Justin: I like the Sin Nombre, that's a—

Sydnee: Yeah.

Justin: That's cool.

Sydnee: The virus without—

Justin: It's mysterious.

Sydnee: A name. Because nobody could agree on what it should be named, and nobody wanted it associated with anything associated with them. Which is fair! I think. Although, if I could name a virus after me, I would.

Justin: I have no doubt. Arizona, Colorado, New Mexicom and Utah. So hey, I knew we were—where we were.

Sydnee: Yeah.

Justin: I was in the right area.

Sydnee: That's the Four Corners. But there is not a virus named that. Don't worry.

Justin: Don't worry.

Sydnee: Anyway. So, that's the—that's the history of hantavirus in the US. And in those cases, by the way, everybody caught hantavirus, everybody developed the pulmonary syndrome after exposure to rodents, specifically the deer mouse. And it's usually through like aerosolized droppings or saliva from the animal. So the classic example is, you can imagine somebody trying to sweep out a room where a mouse has been. And as they're sweeping, you're kind of getting those clouds of dust that probably have a little bit of…

Justin: Mm-hm.

Sydnee: You know, rodent poo or whatever, in them. And you're inhaling that.

Justin: Mm-hm.

Sydnee: That is the, usually what we think, the vector of transmission. That's what's happening in those cases. Okay?

Justin: Mm-hm.

Sydnee: So, hantavirus, so you know, is diagnosed with either an antibody test. We look for the antibody, an ELISA, or we look for a PCR, or we look for the virus itself in your body. But in the first 72 hours, it can be hard to detect. People can test negative for a while. And even moving forward, sometimes you miss it. So it is important to continue to monitor people and test them. You might not get a positive, even in a positive case, immediately. Now, if they're very symptomatic, you'd expect they would. Treatment is supportive care. We do not have like an antiviral medication or something that is specific to hantavirus.

Justin: Just ramen and Gatorade, huh? Is that it? Just like supportive?

Sydnee: No, like ECMO.

Justin: ECMO….

Sydnee: Like we have to put you on a heart lung machine.

Justin: Oh, so like—

Sydnee: To like—

Justin: So you can go a little bit—

Sydnee: Circulate your blood and…

Justin: So there a—

Sydnee: Oxygenate it for you.

Justin: There are some things you can do.

Sydnee: I mean, extracorporeal membrane oxygenation. It is a… like life support in the truest sense. We say life support I think sometimes in medical jargon, and we mean lots of different things. Like, "They are on life support," what exactly do you mean by life support? We usually mean a ventilator. ECMO is like, this machine is going to do everything your heart and lungs need to do for you for a little bit, until they can start doing it again. So, it's a big intervention. It's a big deal.

Justin: When like… when those traditional ramen and waffle method and Gatorade methods like aren't cutting it, andd you gotta get serious.

Sydnee: ECMO is far beyond.

Justin: ECMO is—it sounds like leagues beyond those measures.

Sydnee: Yeah, and it's—and I mean it's tough because, especially with the pulmonary syndrome, usually if you—if you can't breathe on your own, we do put you on a ventilator, right? Sometimes the act of the ventilation, just because of the—what is happening in your body can trigger the arrhythmias and the cardiac arrest that might kill you. And I—

Justin: There's always a—

Sydnee: It's a really difficult syndrome to manage.

Justin: The machines are always a risk, right? I mean like—

Sydnee: Mm-hm.

Justin: From what I understand, tell me if this is off base, but like once you're on a machine, there's always a challenge to getting it off, or a risk to getting off the machine.

Sydnee: Yes, the—and—

Justin: Like the dependence upon it becomes a real issue.

Sydnee: And that is more specific to depending on why you're on it.

Justin: Mm-hm.

Sydnee: So, there are some conditions that we know if we intubate you, it's going to be way harder.

Justin: Lungs.

Sydnee: Whereas there are other conditions where we would expect we will be able to extubate you pretty easily with this, right? But definitely in this case, because of—I mean, it's just like your lungs are filling with all this fluid. You've got all this—it's like an inflammatory reaction in your whole body that's making all of your vessels very leaky.

And there's fluid everywhere. It's a really hard condition to manage, and that's why it is fatal. Not most of the time, but a lot—but you know, a lot of the time. So anyway, there is one strain of hantavirus that we have known, prior to now, could be passed human to human. It had not very often.

The vast majority of cases of hantavirus all over the world were passed rodent to human. But we had seen one strain, the Andes strain of hantavirus, which is found in Argentina. This type causes the lung syndrome. It's in the Western world, so it's that kind of hantavirus. And you can get symptoms anywhere from four to 42 days after you have been exposed. And those initial symptoms, again, might just look like the flu.

Justin: Mm-hm.

Sydnee: So, that's what's happening on this cruise ship. And that's what people are freaking out about, this Andes strain of this virus. And I'm going to tell—now I want to walk you through a timeline of what's happening.

Justin: All right, here we go!

Sydnee: But first, we're going to the Billing Department.

Justin: Are you serious?

Sydnee: Yeah.

Justin: Let's go.

[theme music plays]

[ad break]

Justin: [sings] "And it's about to set sail." That's like the beginning of—

Sydnee: It's a cruise ship.

Justin: Or like you can do the—

Sydnee: Now—

Justin: I'm like smashing the champagne bottle.

Sydnee: I will say, as we're reading about this, the researcher who has—who initially like sort of illustrated that there was a hantavirus that could be passed human to human, has been interviewed a ton in the news. And has been talking about—we should have known this could happen, because there was a case back in November of 2018 that lasted until February of 2019, where there were 34 cases of this Andes strain in Argentina. It started at like a birthday party. And that outbreak resulted in 11 deaths. And they proved from this that there was human to human con—human to human spread.

Justin: Right.

Sydnee: And there are a lot of people who are like, "We probably should have been researching this more after that." What happened on this ship, though? Let me—let me take you through what happened. So, the ship is the MV Hondius. And it wa—it set sail. It was like a luxury cruise, and it seems like there are a lot of bird watchers. There are a lot of bird watchers. That see—birding seems to be a big feature of this cruise.

Justin: Yeah.

Sydnee: You're going to remote and unique locations, I would say.

Justin: Catch the birds.

Sydnee: This isn't the kind of cruise—

Justin: Catch and eat.

Sydnee: No, no, I don't think they're going to eat the birds.

Justin: No, just take a picture.

Sydnee: This isn't the kind of cruise where you go to one of those islands that are owned by the cruise ship, and the only time there's people on it is when the cruise ship empties out on it. It's not like that kind of cruise.

Justin: Okay.

Sydnee: No. This is—this is going to be, you're out in more remote locations, and it's a much longer cruise. It's a long cruise. So, it sets sail on April 1st, from the south of Argentina. And there are scheduled stops in multiple islands, and Antarctica. On April 6th, a 70-year-old Dutch man becomes sick. He's got flu-like symptoms. Okay?

Justin: Mm-hm.

Sydnee: The man and his wife, who are both on board, had been sightseeing around Argentina and Chile, but around this area of Argentina—

Justin: Mm-hm.

Sydnee: For a while, prior to boarding the ship.

Justin: Okay.

Sydnee: This is important, because what we think right now is that's probably where they caught it. They were in these places in Argentina where we know the Andes strain can exist, and they probably were exposed to rodents droppings, saliva, whatever, somewhere while they were sightseeing.

Justin: Yeah.

Sydnee: Okay? I think they were looking at birds. By April 11th, the Dutch man is very sick. So like I said, it can be a very rapid course. So April 6th, he's sick. By April 11th, he goes into respiratory distress and unfortunately passes away. Which, as you can imagine, is already causing a lot of alarm on the ship. Someone has died on the ship.

Justin: Yes, this is… tragic.

Sydnee: Yes. There are—

Justin: Terrifying.

Sydnee: There were 100 and… I believe like 160-ish passengers on the boat, by the way. Not a huge cruise, you know. Well, I mean, if you compare to other cruises, like with—cruise ships are big. I assume there are usually a lot more people. Okay, April 15th, six more people join the cruise when they stop on a remote island, a British territory in the South Atlantic, Tristan da Cunha. And this is also important because somebody also got off there.

Justin: Okay.

Sydnee: On April 24th—

Justin: What about the body?

Sydnee: It's still on board.

Justin: Oh, no!

Sydnee: I mean, I don't know that that is—

Justin: Does it not matter?

Sydnee: Not from an epidemiological standpoint—

Justin: That's the only—

Sydnee: At this moment, yes.

Justin: That's my only context here.

Sydnee: Now, April 24th is an important point in this timeline, because on April 24th, the ship arrives on St. Helena. And on St. Helena, the man's body is taken off of the vessel. His wife also leaves. Makes sense. But at this point, some number of other passengers also leave the boat.

Justin: Okay.

Sydnee: I have seen—most AP reporting is saying more than two dozen.

Justin: Okay.

Sydnee: Which is not a number.

Justin: Right.

Sydnee: That's, I mean… that's a lot of numbers. I guess the official number—

Justin: Many, many, many numbers!

Sydnee: The official number that was given was 30. But then there were—

Justin: Which is more than two dozen!

Sydnee: There were some officials saying it could be up to 40.

Justin: Way more than two dozen.

Sydnee: Yeah. And so, it's hard to say exactly—and I want to focus on this for a second. So, at least 30 disembarked the ship in St. Helena, and then went from there, somewhere.

Justin: Okay.

Sydnee: Okay? And these are people who've been on the ship, so potential exposures. We know that they went to at least 12 different countries, because we know their nationalities.

Justin: Mm-hm.

Sydnee: And so we have a list of like, I mean, the UK, the US, Netherlands, Canada, Switzerland, Turkey, Germany, Denmark, St. Kitts and Nevis, New Zealand, Singapore, and Sweden.

Justin: [sings a tune]

Sydnee: So, all these places people were from disembarked in St. Helena, and ostensibly returned to. There are two that are from listed as unknown, which is hard for me to understand.

Justin: That could be so many countries! For sure!

Sydnee: I don't know how they could be unknown?

Justin: How do you get on a boat?!

Sydnee: Well, yeah, don't you have to have your passport?

Justin: "Where are you from?"
"None of your business! Step aside, I'd like to board!"

Sydnee: [chuckles] So anyway, the 24th is important because all these people got off the ship, and then so did the man's wife. And at this point, she is sick. And I don't know that anybody was taking notice of that, because they didn't know what the man died from.

Justin: What is wrong with people?!

Sydnee: So—

Justin: Can I just—why is no one taking any actions at this point?

Sydnee: Well, we don't know what he died of yet. And so—

Justin: Yeah, but like—

Sydnee: And—

Justin: Why not assume the worst! You know? Like—

Sydnee: Well, and I don't know if she told people she felt bad. I don't know. I mean, if your symptoms are not visible, if your symptoms are body aches and a fever, you could take some ibuprofen and look fine. And if you didn't tell anybody… So anyway, she was sick. She took a flight from St. Helena to

South Africa. There were 88 people on board, including crew members. So, she was symptomatic and on a plane to Johannesburg.

Justin: Yeah.

Sydnee: We don't know if other people also flew on this plane who were on the ship. We don't know. But we do know that she gets to Johannesburg, and her intention was to get on a second flight. I assume to go home. She got—she actually did board that plane. But then before the plane took off, she was so sick, she left the plane.

Justin: Mm-hm.

Sydnee: And then she actually, I think she collapsed in the airport, was transported to a hospital, and died. So, she was quite sick at this point. So this is on April 26th, we have our second person has passed away. Now, on the ship, by April 27th, which is now back out at sea, a third person has become sick. This man is evacuated to Ascension Island. He's then moved to South Africa. And he, as far as I know, is still in the ICU, or is at least still in the hospital there.

Justin: Okay.

Sydnee: He has things that look like hantavirus. He has pneumonia, he's got a fever, he looks like he has hantavirus. The next day, still at sea, a German woman falls sick on board, off Africa's west coast, and then dies by April 2nd–or May 2nd. So, we have our third fatality, which at this point is still the number.

The man who is in intensive care, meanwhile, we finally have somebody who has thought of hantavirus. I don't know—these stories, I assume, will come out later, like who was the brilliant person who said, "Wait a second… they were in Argentina. This could be hantavirus." Somebody did. And they checked the man in the ICU, and they said, "Yes, this is hantavirus." And so then it all clicks.

Justin: Right.

Sydnee: The three people who died almost certainly all have hantavirus—

Justin: Oh, no! It's that one kind of hantavirus—

Sydnee: This guy has hantavirus.

Justin: Yeah.

Sydnee: And that—from that moment, there was this—and you can go back and watch. I actually was watching this as it unfolded. At that moment, here's your question; either all of these people were somewhere in Argentina where they got exposed to the same mouse droppings, right? They were either all together somewhere and became exposed simultaneously.

Justin: Or.

Sydnee: Or there are mice on the ship. That was a question for a while.

Justin: Sure, yeah.

Sydnee: Are they catching it on the ship? I mean, it's possible, right? I don't know why you couldn't accidentally get rodents on the ship.

Justin: I mean, the idea there being that like, why does this happen to multiple humans? It's not human to human.

Sydnee: Yes.

Justin: It's catching it from different animals at different vector points.

Sydnee: Or is this the one strain of hantavirus that can be passed from human to human?

Justin: You could test for.

Sydnee: You can, but at that moment, we—you have to do more genetic—like, it's more specialized testing than you would have available. Like, you couldn't do that locally. We would have to send off samples to the CDC to

do, yeah. And so, at the moment, they knew we had hantavirus. That doesn't necessarily—because of the symptoms, you would assume it was one of the hantaviruses you get in the West, because it was a pulmonary syndrome.

You would look at where they came from, and you know that in Argentina there is an Andes strain that can be passed human to human. So then you—that's why it would be on your mind. But you would have to do more specialized testing to then figure that out. And again, you'd have to send it off to one of the labs worldwide that can do that.

Justin: Okay.

Sydnee: So, that—time. That's why. Time.

Justin: Okay.

Sydnee: So at that point, the World Health Organization, May 3rd, says, "Okay. We have a hantavirus outbreak on a cruise ship." This is, I think, probably when people started hearing about it. I bet if you go back through the news, this was—May 3rd is when stories really started coming out.

Justin: Right.

Sydnee: Because we knew for sure that it was a hantavirus outbreak, and because the WHO is responding, the World Health Organization.

Justin: Not that Who, the Who is the band. [laughs]

Sydnee: They were—

Justin: Pete Townshend should not weigh into this.

Sydnee: [chuckles] They did not declare it an outbreak until May 4th. It was a suspected outbreak on May 3rd. May 4th, they were able to officially declare it an outbreak, because they went back and tested the woman who collapsed and died in the airport, and she was positive.

Justin: Mm-hm.

Sydnee: And so, then they knew for sure. The problem, starting May 5th, which should be resolved by the time you hear this, is now we've got a cruise ship where people potentially have this deadly virus, and none of the places where it's supposed to land want it.

Justin: Mm-hm.

Sydnee: Right?

Justin: Mm-hm.

Sydnee: So, they're kind of in a standoff with these ports who are saying, "We plea—we don't—"

Justin: "No, no, no, no. No, thank you."

Sydnee: Right?

Justin: Yeah.

Sydnee: Cape Verde—

Justin: "We don't want them calling it the us strain of hantavirus. No, thank you."

Sydnee: Exactly. And, "We don't want all of these people coming into our country and spreading hantavirus." So, Cape Verde sends some health workers to help on board. The ship's doctor is sick at this point, by the way. And two crew members are sick. There is, and this is a whole side story that maybe would be its own episode, there is another doctor, by the way, who just happened to be on board, who's helping manage this.

Justin: Mm-hm.

Sydnee: He's just like, he was there, and so he is becoming the ship's doctor, because the ship's doctor is sick. So, three people, the ship's doctor

and the two crew members who are sick, are evacuated from the ship and flown to hospitals in Europe, including, you know, the ship's doctor. Two of them do test positive for hantavirus.

Justin: Okay.

Sydnee: So, this—at this point, this brings us to our confirmed five cases—

Justin: So—

Sydnee: As of May 6th.

Justin: Help me—real quick sidebar here. When we're talking about bringing these people in, I have a lot of images in my head from early days of COVID that was people in like hazmat suits with bubbles of tents, like pushing people around. What level of precautions are needing to happen at this point for—and how is that different for hantavirus?

Sydnee: There are images you can find from news outlets of people in hazmat suits, evacuating people. You know, the full-on spacesuit-looking things. You definitely will see that. That probably is not necessary for hant—well, definitely if you know it's hantavirus, that level is not necessary. A standard mask and distancing it should be plenty. Because what we do know is that, historically, the Andes strain, while it can be passed human to human, unlike COVID, it requires prolonged close contact.

Justin: Yeah.

Sydnee: It is most likely spread between couples, so we definitely think like sexual transmission is part of that. But also just like kissing and exchanging saliva, and sharing food and beverage. Being in close contact where aerosolized droplets would be exchanged readily is necessary for you to transmit the virus.

Justin: Mm-hm.

Sydnee: We know with COVID that, in those early days when we were trying the six-foot thing, that probably wasn't very helpful.

Justin: Right.

Sydnee: We know that now. With hantavirus, that would be a helpful measure.

Justin: Hm.

Sydnee: Six feet, hand-washing and a standard-issue surgical mask should protect you, because that protects you from aerosolized droplets. You don't need an N95 for that. Now, if I was having to go on that cruise ship, I would wear the whole deal.

Justin: Yeah, yeah, yeah.

Sydnee: Because you don't know yet, right? Like we're still—this was unfolding. So, you'll see those images. So, at the point we're at now, and we are recording this on May 8th, at this moment, we know that five people have it. We know that we have four more—

Justin: Five living people?

Sydnee: No. Three people have died.

Justin: Two…

Sydnee: Yes.

Justin: Okay, okay.

Sydnee: And four… there are four more people being monitored for infection, that we think might have it.

Justin: All from the cruise ship still?

Sydnee: So far, all from the cruise ship. What is complicating things are two things. One, I mentioned that April 24th date is important because people got off in St. Helena, somewhere between 30 and 40 individuals. We're not

sure. And they went to at least 12 different countries. We need to find them all and monitor them, right?

Justin: Agreed.

Sydnee: Okay. So, that is part of what is—what—they have officials in all of these countries doing right now, are trying to figure out where all these individuals, and are they sick? You will have seen in the news probably that we have individuals in the US, who did return, who were on that ship, who are being monitored, and currently they do not have any symptoms. They're in Georgia, California and Arizona. There are individuals being monitored by their state health departments there.

Justin: Sorry, did you say Arizona?

Sydnee: Yes.

Justin: That's one of the four corners.

Sydnee: [chuckles] That's just a coincidence.

Justin: I just wanted to remind everybody, if you get no other takeaway from this episode, you are gonna learn those four corners.

Sydnee: So, and there are—similar measures are being taken in other countries where we know individuals are. They have people in quarantine, they're being monitored. We know that people who stayed in St. Helena have been taken into quarantine. So, measures are being taken all over the world.

The World Health Organization is coordinating this response. That if you are on the ship and have left, we have to monitor you, for, you know, like 45 days, because you could become sick up to 45 days later. So, that's being done right now. That's one focus. The other focus is that April 25th flight that we know one of the sick individuals who then passed away was on.

Justin: Mm-hm.

Sydnee: So the concern is—

Justin: Close quarters.

Sydnee: Is that close quarters and long enough contact for somebody to become sick? There was a flight attendant who became ill after that, who I believe has tested negative at this point. So, at this moment, we do not believe that the flight attendant has hantavirus. At this moment. Now obviously she'll continue to be monitored, or he, I think it's a woman. Anyway, the flight attendant will continue to be monitored. There is another passenger who has become sick. Again, we do not have test results back to say one way or the other. But they—this was somebody who was close to the infected passenger.

Justin: Mm-hm.

Sydnee: And so, that person is also being monitored. So, everybody who was on that flight, they are trying to find and put into quarantine, because… we don't know. We don't think that if you're sitting many rows away, you would be infected. But until we know for sure, we would rather everybody be quarantined.

So, those are kind of the two areas to watch are, where are all those people that got off the ship on the 24th, and are they on quarantine? Where are all the 88 people who were on that plane, and are they on quarantine? And I think we'll be hearing reports from the World Health Organization regularly as they're—as they're tracing all these individuals.

The ship itself, if you're curious, will arrive on Sunday. So again, by the time you listen to this, the ship has already arrived on the Spanish Canary Island of Tenerife. They already have—Spain's head of emergency services has already said they will arrive at a completely isolated, cordoned off area.

They will board vehicles that are isolated and under guard, and they will proceed to a section of the airport that will be completely cordoned off, and they will board an aircraft to their country of origin, and go back there. They're repatriating everybody to where they live. Go there, and your—basically, your country's health officials can deal with what to do next right.

Justin: Right, okay.

Sydnee: Right? So, that's the plan.

Justin: Yes.

Sydnee: So, they do have a way to protect people who are on—who live on that island.

Justin: Yes.

Sydnee: And then transfer all of those into a—individuals back home, and then they can be monitored by their local health authorities. Obviously, they will have to remain in quarantine. So, this isn't COVID by any stretch. because as we've talked about, it is much harder to catch.

And we would not expect it to be something where flying on a plane—like in those early days, we knew if somebody with active COVID flew on a plane with 88 people, there was a high likelihood that people from that plane walked off with COVID, and then went on to spread COVID to everybody else.

Justin: Yes, but the good news is, because we so recently dealt with COVID, and are in some ways still dealing with the repercussions of that, we are much smarter, more capable, and faster about how we react to this stuff.

Sydnee: No.

Justin: Thank you so much for listening.

Sydnee: I will say there's two—there's two pieces to this. The World Health Organization has been all over it, and has been responding I would say pretty quickly. It does make me nervous that we don't know exactly how many people got off the boat in St. Helena, because I feel like there should just be a log of that.

But whatever, I don't know, I'm not a cruise ship expert. But the World Health Organization is doing what it should be doing, and it sounds like a lot of countries are doing what they should be doing. So, the US. While the individuals that we know are here are being monitored appropriately, and we have no reason to believe that anything is being done wrong, our response has been slow.

Why? Well, because if you remember, we withdrew from the World Health Organization, officially, as of, I believe it was like January 22nd of this year. So, we are no longer a member of the World Health Organization, because our president is an idiot. And what that means is that our CDC is not going to get alerts from the World Health Organization as quickly as the health organizations in all of these other countries.

Justin: Yeah.

Sydnee: You know, because we're not in the meetings. We're not on the Zoom. We're not at the table anymore. And as a result—

Justin: We're not in the group chat anymore. [chuckles]

Sydnee: As a result—and I don't know if we were in the World Health Organization, those individuals who we have identified in this country and who are being monitored, would that have happened faster? First of all. You know. Because we—I mean, I think just as of yesterday, there were more who were located. So, would that have happened faster if we had been at the table the whole time? Probably. And what if any of those individuals did have symptoms? That delay could mean they spread it to somebody else.

Justin: Mm-hm.

Sydnee: Right? Somebody, probably again in their household, I'm not talking about COVID where people in the room, in the classroom with them or wherever ever.

Justin: Wherever ever.

Sydnee: I'm talking about their family and friends. We also know that there

were 10 research centers in the Centers for Research and Emerging Infectious Diseases, who—that were terminated last year by the National Institute of Health, because their work was unsafe and not a good use of taxpayer funding. One of those centers was studying the Andes virus, specifically because we knew it could be spread from person to person, but we didn't know exactly how, or how easily, or what to do about that. So, we were going to be studying this…

Justin: Oh.

Sydnee: In Argentina… But we didn't.

Justin: Yeah.

Sydnee: And I'm not suggesting that if we had been, we would have prevented this. Probably not.

Justin: Yeah.

Sydnee: Statistically not. However, we might understand what's happening a little better, and how to move forward better. More information can only make us better at responding to emerging threats. For our—for our part the president has said, his—the US Centers for Disease Control and Prevention has classified the situation as a level three.

That's its lowest level of emergency response. That's for like a disease cluster. And probably at this point, that's fair. So, I'm not—I'm not criticizing that. And I will say too that the World Health Organization and the CDC have confirmed that they are now working together.

So, even though we are not a member of the World Health Organization, we are working and cooperating with the World Health Organization at this time. And the president says, "I think we're gonna make a full report about it tomorrow. We have a lot of people, a lot of great people are studying it. It should be fine, we hope."

Justin: Cool.

Sydnee: So—

Justin: Is this is the same guy who said, "I want to see the churches—" The churches will be full by Easter?

Sydnee: Mm-hm.

Justin: If I remember correctly. [chuckles] Yeah.

Sydnee: I think that the—when they asked the World Health Organization director general for comment, his comment was, "Viruses don't care about our politics, they don't care about our borders, and they don't care about all the excuses that we may have." Which is like a, I think, a scarier and more realistic response than, "It will be fine, we hope." The truth is, this should not terrify you. You should not be panicking.

In part because that's never a really helpful response, right? But in part because this isn't COVID. We have no reason, and there are many infectious disease specialists who very level-headed, you know, evidence-based, are saying don't panic. This is not COVID, don't—you don't need to isolate in your house right now, you don't need to freak—unless you were on the ship and we've told you to. [chuckles]

Justin: Mm-hm.

Sydnee: Then please do as you're told. Obviously, a lot more contact tracing needs to be done. We might find that someone on the plane did contract the virus on the plane, which would tell us that it is maybe spread a little more easily than we thought.

Justin: Right.

Sydnee: But it is still not COVID level of pandemic that would stem from something like this. That is not our expectation at this time. That being said, action you can take, assuming you weren't on that ship, is to vote for people in our country who will ensure that when things like this happen, we have the proper tools, the researchers, the evidence, the science, the information,

and the cooperation on a global level to respond effectively, efficiently and as quickly as possible to save human lives.

Justin: Yeah.

Sydnee: We do not have that in place right now. This is not something to panic about. But if something was more serious and was COVID 2, was pandemic level, are we prepared to be a part of that effort right now? It does not appear that we are.

Justin: Thank you so much for listening to our podcast, Sawbones. Thanks to The Taxpayers for the use of their song "Medicines" as the intro and outro of our program. Thanks to you for listening! Really appreciate it. That is gonna do it for us for this week. Until next time, my name is Justin McElroy.

Sydnee: I'm Sydnee McElroy.

Justin: And as always, don't drill a hole in your head.

["Medicines" by The Taxpayers plays]