Sawbones 377: Virology

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[theme music plays]

Justin: Hello everybody, and welcome to *Sawbones*: a marital tour of misguided medicine. I'm your cohost, Justin McElroy.

Sydnee: And I'm Sydnee McElroy.

Justin: Uh, well, Syd, we're— it's not quite— not... not... this one's called COVID-19, not quite over.

Sydnee: I actually labeled the document where I was trying to put together notes for this as "COVID still?" With a question mark.

Justin: "Still?"

Sydnee: Like "Still?"

Justin: Yeah, I gotta say—

Sydnee: I don't know who that's for other than me. I'm the only one who sees the title of this document. But that's what it's called. "COVID still?"

Justin: The longer it drags— the longer it drags on, honestly, I kinda feel like we need to ditch the 19 and update it. You know what I mean? COVID-19's just starting to feel a little Kony 2012. You know? Like, let's... spice it up a little bit.

Sydnee: I mean—

Justin: COVID-20... 22.

Sydnee: Coronavirus is trying to.

Justin: Yeah, that's true. Coronavirus is— is muta—

Sydnee: With our help.

Justin: —independently. We're helping, yeah, we're doing our part. As a species.

Sydnee: Yeah, to update. I mean, at this point I don't think that there is enough distinction for there to be a new— I mean, 'cause, like, if you had a new... name, it would probably denote, like, a different syndrome; like, constellation of symptoms. You know what I mean? 'Cause, like, COVID-19, the illness... is— denotes the— the symptoms, the sickness, the illness. Does that make sense?

Justin: Yeah.

Sydnee: Coronavirus is the virus. COVID-19 is the... illness.

Justin: Yeah.

Sydnee: If we called it COVID-something else, it would have to be significantly different. But, I mean, if we don't do something, I guess we could be headed there.

Justin: Yeah.

Sydnee: This is why I didn't want to talk about this. [laughs quietly]

Justin: I understand. I understand. It's— we've been struggling with this one. Like, it's— it's, like... [sighs heavily] it's exhausting right now. And you know what? Maybe this can just be a space where you hear other people say that this is an exhausting time. I don't know.

Sydnee: I was hoping for some— uh, to give you an opportunity for some catharsis, perhaps. Also, though, there have been a lot of changes recently. Justin, you've asked me some questions. We've had some listeners write in some questions. I've had a lot of family and friends asking me personally, "Could you help me understand what the heck is happening right now?" Like, with the variants, with the CDC recommendations. School is going to start soon. Uh, it doesn't start in the fall, for everyone who doesn't know that.

Justin: Yeah.

Sydnee: There seems to be this belief that we still have all this time before school starts 'cause school doesn't start till, like, the actual, like—

Justin: Yeah, [unintelligible]—

Sydnee: —seasonal fall.

Justin: Folks, it's like two weeks.

Sydnee: To the equinox, right? Like, no, that's not—

Justin: Yeah, I mean, it's like two weeks.

Sydnee: —that's not when school starts anymore. It's in August.

Justin: Charlie starts in, what? August 11— I mean, it's like— it's wild. It's like...

Sydnee: I don't remember.

Justin: ... pretty soon.

Sydnee: Yes. It's soon.

Justin: It's soon.

Sydnee: Um, I haven't— I've been trying not to think about it, because of all the angry emails I've been exchanging with the school board. So, uh, I wanna— I always like— this show is supposed to be about history, and the reason we talk about COVID so much is because history is happening. Unfortunately, we live in interesting times. And, uh, I want to start, though, with some actual history history. Old history.

Justin: Okay.

Sydnee: I don't know why this helped me with context—

Justin: Old history.

Sydnee: —but it did, as I started thinking about this.

Justin: Old history's one of my top two kinds of history.

Sydnee: Uh, do you know, Justin, how long ago we theorized the existence of the virus? I don't mean the virus coronavirus. I mean the entity we think of as a virus.

Justin: It had to be at least... I mean, 11, 12— I don't remember people talking about it a lot when I was born, and I was born in 1980. So probably, like, 90's.

Sydnee: [laughs quietly] Ancient civilizations theorized the existence of, like, contagions, right? Something that would be a viral particle. And you've gotta understand, viruses are really small. [laughs quietly]

Justin: Oh, gosh, guys—

Sydnee: Really small.

Justin: —if you're not aware of this... have you ever wondered how you've never seen 'em? That doesn't mean they're not real. They're just, like, *so* small. Syd tried to explain it to me, but if you think of, like, a really small thing, like a mouse or a grape, it's like even way, way, way, way, way smaller than that. Like half a grape.

Sydnee: And it's smaller than, um, other pathogens. Like, and this is why if you look at, like, the history of virology, the study of viruses, you have, like, someone— a, like, ancient— ancient people a long time ago going, "I bet that there is something that I don't know the word for it yet," 'cause virus, the word, wasn't around yet. But like, "I bet it's really small and it makes you sick and you can catch it from other people. Hmm, that's fascinating."

And then nothing happens until, like, the 1700's.

Justin: [laughs]

Sydnee: Because we can't see it! And basically it was just a theory, that there is something really small that could make you sick. And you could see, eventually, like, bacterial growth colonies. You might not see an individual bacteria, but you could, see, like... you know. Like you've probably seen on Petri dishes, right? Like, you could google an image of a Petri dish with bacteria on it and you'll see the little globs. They look— [laughs quietly] they look like little, um— little... snot balls—

Justin: [wheeze-laughs]

Sydnee: —of different colors. Like, I mean, seriously! They're kind of beautiful, some of them.

Justin: Beautiful snot balls.

Sydnee: They are. But, um— and they're different colors and you can see that and be like, "Well, that's... something."

Um, you can see fungus, right?

Justin: Mm-hmm.

Sydnee: Look in your fridge. You might have some.

Justin: It's right there.

Sydnee: We usually do, of something that we forgot was in our fridge. So you could see those things, but you couldn't see a virus. And when you think about, like, the first big step in that process, um, of understanding, like, what a virus is and then visualizing it eventually and fighting it... you really have to look first at what Jenner did with the smallpox vaccine. And the wild thing about that is that the first vaccine, period— and I know that— and we've gone through the history of vaccination, so I know, like, there was variolation first. I don't wanna get into all that.

But when we talk about the first vaccine, using vaccinia, against smallpox, we still didn't know what a virus was.

Justin: Hm.

Sydnee: We didn't know smallpox was a virus, what the implications of that were, and we certainly hadn't seen it.

Justin: Right.

Sydnee: The first vaccine was created without that knowledge. I think that's fascinating to think about. You still had not seen the enemy.

Justin: Hm.

Sydnee: But you knew that it was there. And the reason that we knew it was there is there's this whole sequence of events, even throughout this time period, where Jenner has come up with this vaccine, and as we move into, like, the 1800's, where we're beginning to understand the germ theory of disease, right?

Justin: Right.

Sydnee: We're beginning to understand the idea that, like, you're sick, I can take material from you— whether it be, like, snot or spit or blood or...

Justin: I get it, Syd. That's gross. I get it.

Sydnee: ... scab goo. Whatever.

Justin: Yeah, I know, yeah, I get it. It's, like, super gross.

Sydnee: And I— I can take that material from you and I can put it in another person, and they'll also get sick with the same thing, right? And then I could even take material from that person and put it in another person and make them sick. Like, we're beginning to understand—

Justin: We get it.

Sydnee: —that.

Justin: We get the idea that there is, like, goop.

Sydnee: [laughs] There's goop that you can take.

Justin: There's goop!

[pause]

Sydnee: And put it in another person.

Justin: Got it!

Sydnee: Right. Not Gwyneth Paltrow Goop.

Justin: No. No, that won't do anybody any good.

Sydnee: Although misapplication of advice from Goop probably could make you sick, to be fair.

Justin: Yeah, could lead to infection.

Sydnee: Um, anyway... what we— what we started doing was trying to, um—here's some goop that's infectious, we think. Let's put it through a filter, a very small filter.

Justin: This is one of those filters that makes your skin glow or gives you, like, the spark— glittery eyebrows or something, when you raise your eyebrow the American flag shoots out of your eyes or something?

Sydnee: Not that kind of filter.

Justin: I love those filters.

Sydnee: Not that kind of filter. Like, something that will remove particles filter. And then the stuff that comes through, let's see if that makes someone sick.

Justin: Okay.

Sydnee: Because the idea is that if it's a bacteria or something, you could filter it out, right?

Justin: Mm-hmm.

Sydnee: This idea would come into play many, many years later with... [softly] masks. [laughs quietly]

Justin: [sing-song] Ahh.

Sydnee: That can filter certain things out and can't filter other things out. Um, but you— what they would find—

Justin: [laughs] Syd— earlier this week Sydnee said, "Did you hear? Disney's bringing back masks."

And in my head... I'm so used to Disney, like, digging through their old IP and finding something they can relaunch— in my head I was like, "*Masks*? What is *Masks*— they're remaking the Rocky Dennis movie?" Or, like, *Mask* like... the, uh— the animated TV show when I— when I was a kid, where, like, it was vehicles that would transform into other stuff, and then the people would wear masks to drive the vehicles.

Sydnee: I do not know this.

Justin: Anyway, the point is they were just—[wheeze-laughs]

Sydnee: No, like the face masks you wear for coronavirus.

Justin: Yeah, it took me way too long. It was very, uh— very embarrassing. Um, but I eventually figured it out.

Sydnee: So, the thing with filters is that they knew that sometimes you passed infectious material through a filter, and then put that— the filtered stuff, the stuff that had been filtered, you put it into another... animal. Let's be honest, a lot of the times we're dealing with animals, not humans, in these experiments. And they would still get sick. And it had filtered out all of the conceiva— all the stuff that you had conceived of so far. It had— you know that filter would've filtered out all the bacteria and germs and crap you knew about, so there was something you didn't know about...

Justin: Dun dun dun.

Sydnee: ... that was in there, that was making people sick. And so this is how we started to figure this out, um, and it wouldn't be until 1892 that we would actually, like, find the first virus. Do you know what the first virus we found was? The first one we were able to, like, locate and name?

Justin: Uh...

Sydnee: Not even take a picture of yet.

Justin: Smallpox?

Sydnee: The tobacco mosaic virus.

Justin: What's a tobacco mosaic?

Sydnee: It's a plant— it's a plant virus. It infects plants. It's not a— it's not a virus that we get. Tobacco plants get it.

Justin: It must be a chunky boy, huh?

Sydnee: [laughs] But they— they— they isolated— there was the tobacco mosaic virus. Soon after that the first animal viruses, called the foot and mouth virus— this is not hand, foot, and mouth disease that humans get. This is totally different. This is something that only non-human animals can get.

Uh, that was found soon after. And then by 1900 we were able to name the first human virus, a flavivirus called yellow fever. Um, and it's— over the next— so, like, here we are. Like, all of human history, we theorized the existence of viruses. Right at the turn of the centuries, 1800 to 1900, the 1800's to the 1900's, we isolate these viruses. And then over the course— and, like, within 30 years we're taking pictures of them, by the way. We use an electron microscope to take pictures of them. Which is— is a really cool— the first description I ever read of, like, how those things work was in, um, *The Hot Zone*.

Justin: Mm-hmm.

Sydnee: The book about Ebola, um, that inspired me to become a physician. Uh, when— and, like, if you read about how hard it was to photograph a virus, and you had— like I said, they used this electron microscope, which they had to invent in order to see and then take pictures of these viruses. And they have to create these little, like, beads of viral material and slice them with diamond knives—

Justin: Wild.

Sydnee: —and then put these tiny sections, and look under this specialized microscope. Anyway, all this technology had to be invented before you could see and take a picture of the enemy, the virus.

Justin: Mm-hmm.

Sydnee: Um, and then what you have, by the end of the— like, by the end of the 50's, you have vaccines against most of the major, dangerous, especially childhood viruses that are out there. It's that fast.

Justin: Hm.

Sydnee: You have techno— like, but— I think what I'm trying to get to here is, you have been building to this... for all these hundreds of years, where people were talking about and filtering down and getting to, "There's something we can't see, there's something we can't see. We know it makes people sick. We know how to stop it, because we know when you get it once you usually don't get it again, so maybe if we could expose you to it and train your immune system against it... "

All of this culminates in what seems like this very fast process throughout the 50's of— 40's and 50's— of making these vaccines. And it can seem like that happened really fast, but it didn't, 'cause it was built on hundreds of years of understanding. And I just— I feel like... that scope of things, if more people understood that, would be helpful right now.

Justin: Yeah.

Sydnee: Because what has happened in the last year? Well, in the year that it took to go from... finding this virus, finding its genome, making a vaccine against it, testing that vaccine, refining that vaccine, or multiple vaccines, as it is, and then giving it to humans. The basically year that it took, right? It— I mean, it— it's— it seems miraculous. And certainly to Edward Jenner [laughs quietly] it would feel miraculous.

Justin: Yeah.

Sydnee: But when you look at history, when you look at what has brought us to this moment, of course we can do it this fast. Of course.

Justin: [sighs heavily]

Sydnee: Because we have hundreds of years of understanding that led us to this moment, and then allowed us to be prepared. Because viruses have been elusive, and weird, and dangerous, and scary, as long as humans have been... interacting with them. Um, and so we have gotten better and better and better at defeating them. Or at least on the science end, 'cause that's only one part of it, right? The science is one piece. The other part is what all we do with that science.

So, anyway, I don't know if that context helps anyone, but that context for where we are right now helps me.

Justin: Yeah.

Sydnee: Um... I don't know if that speech would help anybody get the vaccine. [laughs]

Justin: Yeah. Who's gonna take the time to listen? Maybe we could come up with a punchy TikTok version of it. It's like— where it's like one person reaches up and they're like... "Time before we could see viruses," and then they do another kind of dance.

Sydnee: And they use that [hums melody]

Justin: [hums along]

Sydnee: That one?

Justin: Yeah. Or there's, like—

Sydnee: People like that on TikTok.

Justin: Yeah. Or— yeah. I mean, that's an option.

Sydnee: I don't know. That's not really my thing.

Justin: Yeah, I don't really TikTok.

Sydnee: I'm— that's not my favorite medium, honestly. Podcasting is better for me. [laughs]

Justin: Um, let's— tell you what. Let's take a quick break. Take a break, cleanse the palates, and we'll come back and talk about how things have been going lately.

Sydnee: Yeah. There are a couple things of current historical events. [laughs quietly]

Justin: [laughs]

Sydnee: Um, now that we have traced the human evolution of our understanding and relationship with the virus.

Justin: [through laughter] Let's thrill as we de-evolve. Let's go.

Sydnee: To the billing department.

Justin: Let's go!

[ad break]

Justin: Alright, Syd. So we have talked somewhat about the Delta variant of the, uh, COVID-19... continuing, um... [laughs quietly] developing story. You were telling me that, like, literally seconds before

we recorded we had some— you were reading a story about it, and what we were understanding.

Sydnee: So, we've talked before about variants. It is— it was understood from the beginning— I mean, again, from the beginning of our understanding of viruses, that viruses do change over time, like all things. All things evolve. All things change, especially in— and things change because of pressures from the world around them to change and adapt to continue to survive, right?

Justin: Right.

Sydnee: Um, so as we become a little better at preventing this infection, um... somewhat better at treating it, I guess you could say, it was only natural that it would shift to some extent, right? And change in response. So we now have the Delta variant, which is becoming the dominant variant of this, um, in multiple places. It is not the dominant variant in the US yet, but it is only a matter of time. You may also have heard— I just wanted to throw out there, like, I've read some early reports of the Lambda variant as well, and some concerns about that.

Justin: Okay.

Sydnee: At this point, I don't think we necessarily have a concern that it is worse than the Delta variant, um, but also similar to the Delta variant, it is more contagious, but it's still really early. So if you've heard the whispers of it out there, right now the thought is that it's not going to out-compete Delta, um, at least at this point. You know, you can't predict the future, obviously. But... but right now, Delta is the big concern.

Um, we knew about Delta from the beginning of our— of seeing it, that it is more contagious. Um, and as a result, we know that— and this— when it comes to, like, do the vaccines work against variants? I think what you have to understand is that there are definitions of the word "work" in play.

Justin: Okay.

Sydnee: Does— do the vaccines prevent severe illness and death from COVID-19, including the Delta variant? Yes.

Justin: Yes.

Sydnee: Yes. Not 100%, no vaccine is 100%, but they work extremely well in that— if that is your metric. What we are finding is that, do the vaccines prevent any infection with COVID-19 Delta variant? Not as well. There's still— you're still way more protected than you would be if you were, say, unvaccinated.

Justin: Mm-hmm.

Sydnee: Which I can't say— I can't stress that enough. But what we have slowly learned is that because the Delta variant is more contagious, you're going to see more breakthrough cases, meaning people who have been fully vaccinated, meaning they've gotten both their vaccines and waited the appropriate amount of time since the second vaccine— you're going to see more breakthrough cases. Um, and what you have to understand is that when you have more breakthrough cases, you also have more unvaccinated case— like, the spread is more. You have more vulnerable population, right?

Justin: Right.

Sydnee: So you're going to see it spreading faster, and you're going to have another wave. This is what is happening.

Justin: Mm-hmm.

Sydnee: Um... that wouldn't be so, uh, dangerous, perhaps, if it weren't for the fact that one, we still don't have a vaccine approved for children under 12.

Justin: Just bears repeating that. Just as often as you can. Just ke— just keep— you know. 'Cause there's a lot of parents that feel like kind of, uh...

Sydnee: Screwed over?

Justin: Yeah— well, yeah, I mean, screwed over, but also kind— like, it can feel like gaslighting if you have kids, because, like, everyone's like, "Well, everything's opening back up and everything's fine." Like, there's... millions, tens of millions of people who can't get vaccinated.

Sydnee: Yes.

Justin: I mean, it's... what, a fourth—

Sydnee: And the implications—

Justin: —I think a fourth of the population.

Sydnee: —the implications of that are twofold. One, uh, kids can still get sick.

Justin: Mm-hmm.

Sydnee: And two, uh, they can spread it.

Justin: Right.

Sydnee: So...

Justin: Well, we don't have... [sighs] I— how— I'm— everybody knows where I stand at this point, so I— hopefully I can be in— can we call this an environment where I can ask stupid questions?

Sydnee: And don't let me forget, I wanna get to the Washington Post's story from this morning.

Justin: Do that first, and then let me ask my dumb questions.

Sydnee: Okay. The— there were some internal CDC documents, like a slideshow, I think, that was given, probably— they say slideshow. A PowerPoint, let's be honest. I know. I know who you people are! You're like me.

Justin: [laughs]

Sydnee: It was a PowerPoint. Was it blue with white letters? Mine are always blue with white letters. Um, but there was a— there was a slide that showed that, um— that indicated that perhaps the Delta variant is also causing more severe disease, is as contagious as chickenpox, and basically, um, some sort of presentation that was given to urge the CDC to change their recommendations. Um, and it's based on data that hasn't been published, so I don't— I can't go through that data with you. I don't know what it was.

Justin: Okay.

Sydnee: But apparently there have been some studies that have indicated that the thing we didn't think was true about Delta, that it caused more severe disease, perhaps that's wrong. I don't— I don't know, 'cause all of this is based on this Washington Post article that I literally read this morning. [laughs quietly]

Justin: Okay.

Sydnee: Um, so perhaps it is more dangerous. It's definitely more contagious. Definitely more contagious. So everything you thought you knew about how long you could be within six feet of someone...

Justin: Mm-hmm.

Sydnee: ... I— I don't think we know that anymore.

Justin: Mm-hmm.

Sydnee: I'm not saying we know something else yet. [laughs quietly] I'm saying we don't know. So, uh, because it's going to spread more rapidly, uh, you're going to see among the unvaccinated population, you're going to see it spreading quickly, and a lot of people getting sick, perhaps sicker, and you're going to continue to see severe illness and death.

And then among the vaccinated population, while you're not going to see a lot of severe illness and death, you're just not. I'm not saying there will be zero. No vaccine is 100% effective. But among the vaccinated population, what you are going to see is mild illness, which isn't a huge deal, except that people are going to be mildly ill, and not necessarily think they have this, and so perhaps go out and spread it to others who are unvaccinated and at risk for severe disease or death, or children who by default are unvaccinated right now, under 12. Um, and, you know, it will continue to spread, because they— you won't— your first thought won't be to go get tested for COVID anymore, especially if your symptoms are mild.

Justin: Mm-hmm.

Sydnee: So... this is the situation. This is where we are. This is why the CDC has shifted its guidance. Not because we don't know what's going on. Not because people aren't figuring it out, but because the situation changed. Things evolved. And as things change and evolve, if you're good at science, you change and evolve with it. If you're bad, then you just keep saying the same thing, no matter what the outcome is. And so we— we had to shift advice, the CDC had to shift advice. And that is why recently the CDC came out with the recommendation about universal indoor masking for everyone.

Justin: So that means that even if you're vaccinated, if you're indoors, you should wear a mask.

Sydnee: Yes.

Justin: Okay. I... can I ask my dumb questions now?

Sydnee: Yes.

Justin: Okay. So— and everybody knows where I stand, okay? I wanna say from a mor— I'm gonna talk in terms of public health and statistics for a second, with the understanding— and I'm gonna say this is a preamble, that I understand that one, there are people who are immunocompromised for whom this is a very serious situation still, and I

understand also that one death to the people that care about a person is too many. Okay. That— that blanket statement being made, if you look at vaccination rates for the population, we're at, like, 50, right? Broadly speaking. Now that's— now, kids— the under 12 thing is kinda messing up our, um, averages.

But, you know, it's still— like, if you look at fully vaccinated 18-24, it's, like, 43% of the population. Young people... that is where our biggest gap is. Like, [stammering] 18-39 is really, like, the worst percentages. Like— and weirdly, there's, like, a— it goes to 80, for fully vaccinated it goes to 80% if you're between 65 and 74, and then if you're 75 plus it goes back down to 77. So some people are just going to [holding back laughter] ride it out.

Sydnee: Yeah.

Justin: So r— I guess, go for it. My concern is this. If 80% of the population for whom this is the most deadly, right? If they are fully vaccinated, like, at s— even if the rest of the population isn't, like, does this get— I mean, we are s... [pause] I don't know how you sell to people that this is still a... very large, like...

People wouldn't get on board with some of these guidelines when no one was vaccinated, and people were just dying left and right, right?

Sydnee: Mm-hmm.

Justin: How do you, from a public health perspective, convince people that this is still, like... the kind of danger that we should be taking very seriously and taking these steps and taking these precautions?

Sydnee: [sighs]

Justin: Do you know what I'm asking?

Sydnee: I know.

Justin: Like, broadly speaking. Like— like, is it— like, obviously, like... you know, any— again, any death is too many. Like, no— like, every one's a tragedy, obviously.

Sydnee: Especially at this point, when we have a vaccine.

Justin: Yes, correct. But... there's an element of personal responsibility in that. Like... it's serious for people that have not been vaccinated, and again, I don't want anybody to— to, uh, get extremely sick or perish from— from, uh, this disease. But, like, we are— broadly speaking, you are... you know, a lot, a heck of a lot safer if you've had this vaccine. How

do you get people on board with "This is something we still need to do" if, like, the vast majority for whom it is very dangerous have— have been vaccinated?

Sydnee: Uh, I think that— I think what's hard is that, um...

Justin: If I could say one more thing to contextualize this. In America in the last seven days, the mortality rate of COVID has been .6%. So, like, again... I'll say it ten times. Any death is too many deaths. But, like, how— how do you get people back on board with, like, "This is something we need to take really seriously"?

Sydnee: I think that there are a couple things. Um, well, first of all, if you're asking, like, the broader question of, how do you convince people either to get vaccinated or wear masks or do anything to take this seriously, I think that question... a lot of smart people are asking and trying to answer constantly right now, and I don't know that I am going to have a novel answer that hasn't been studied and written about 100 times over.

Justin: No, I— yeah, I know.

Sydnee: So I think— I think that is a big— that's a big— that's the question, right. That is the question.

Justin: I mean, this is one of those things where it's, like, such a big deal that you have— you almost have to... [sighs] I— you just hope somebody is in a room with other smart people, like, "How do we sell people—" [laughs quietly]

Sydnee: I know. Well, and those—

Justin: You know what I mean? Like, you just—

Sydnee: —those rooms exist. I guarantee—

Justin: I know those rooms exist.

Sydnee: —these conversations are happening. But the problem—

Justin: I saw Bido, like, "I'm gonna give you 100 bucks!"

Sydnee: "I'm gonna give you 100 bucks." And then he said, like, "You're not— you're not as smart as I thought you were if you don't get vaccinated." I don't know that that...

Justin: [out of the corner of his mouth] I'm not sure it's a great angle, Bido. Come on, bud.

Sydnee: I don't know that that that's the angle to take. Um, I mean, again, I don't know the data on it, but I would guess that's not the best approach. Um, the— okay. First of all, what I would say is this. I don't— I don't think that the sort of punitive, like, "[patronizing tone] We're gonna put masks back on you if you don't get your vaccines!"

I don't think that's proving to be very effective, because it's all become so politicized that it was already seen as a punishment. Like, masks were seen as some sort of weird punishment, even before. Like, when it was the on— before vaccines when the only tool we had were masks and distancing, masks were already seen as like, "[deep voice] Well it's just... Pelosi wants us masked," or whatever it is.

And it's like, I don't even know— like, it was so immature. Like, the way I felt about it personally. Um, but I don't think that reinforcing that they could be used punitively does us any good.

Justin: Right.

Sydnee: Because they're not a punishment. They're an unfortunate necessity. I hate wearing a mask. I do.

Justin: Yeah! It's no fun. And poor Sydnee fogs up her glasses.

Sydnee: But I do it. I do, I fog up my glasses all day long. No matter what I do with those masks, my glasses are fogged up. And sometimes— and in the hospital, by the way, I still have to wear eye protection, even though I have glasses. I still have to wear goggles over that. Do you know what it feels like to have foggy glasses *and* goggles on all day with your mask?

Justin: I've got these incredible, perfect... eyes. I don't know.

Sydnee: [laughs quietly]

Justin: I can't relate. I'm sorry.

Sydnee: Anyway, um... so, I think that a couple things would be this. One, uh, do you wanna wait until it is more deadly... to do something? I mean, like, that— that is a real— and I know that sounds facetious. But, like, really, part of the question is, as this changes, we knew— we knew it could get worse. We didn't know exactly how it would change, but it's gotten more contagious that's worse.

Perhaps this early leaked document is saying that it is more severe. I don't know. Do we wanna wait until it is another polio, in terms of children? Do we wanna wait for that before we take it seriously? Like, is

that the thing? Do you need to see kids dying before you'll take it seriously, or can you just— or is the threat of that enough?

Justin: I'd like to reinforce that I was asking those questions rhetorically, and I'm feeling—

Sydnee: Oh, I don't mean you.

Justin: —a little targeted right now.

Sydnee: No, I don't mean you. But I mean, like, that is one thing to say. Like, this thing is changing, and it's gonna keep changing, period. And we can either get out in front of it, or we can wait for the devastation to occur. More— and let me say, *more* devastation than has already occurred.

The other thing I would say is, this isn't just a mass casualty event that we're witnessing. It's a mass disabling event. Because there are long term consequences—

Justin: In ways that we still don't even fully understand.

Sydnee: —yes, to getting COVID, for some. Not all, but some patients. And that can be true, and has been documented to be true in children as well. And in young people. So not just the elderly people who we initially knew were at risk of severe COVID, or highest risk.

Um, anyone can get severe COVID. It is just less likely when you're young. And I think, like, as a... as a parent, I don't understand why... our kids don't mind wearing masks. If it means they get to do things in the world, I can tell you, they're usually pretty happy to go along with it.

Justin: Yeah, the kids are fine. They don't understand anything.

Sydnee: No. They— they will adapt.

Justin: They don't care about masks.

Sydnee: Um, and if... if in the entire school the kids wearing masks prevents one kid from being hospitalized or getting severe COVID or getting complications from COVID... isn't that worth it?

Justin: I mean, we banned peanut butter from lunches.

Sydnee: Yes!

Justin: 'Cause some kid four tables away could inhale the peanut fumes. Like, we did that. Like, certainly we could do this.

Sydnee: And peanut butter is delicious.

Justin: Peanut butter's delicious!

Sydnee: But I think— I think that's something. And the other thing I will say that, um... uh, to put— to, like... I would emphasize, more and more we're seeing that the conversations that are going to change minds— and I know that there's been a lot of data recently released that says it doesn't matter what you say, you're not gonna change minds. Um, for the majority of the unvaccinated. Not all. There still is— there's a sliver. It's not as big as I would've hoped. But the people who do change their minds, it seems to be largely because of family and friends and personal relationships with people who have convinced them to go get vaccinated. It's not me.

Justin: Mm-hmm.

Sydnee: I wish it were me. It feels very—[laughs] I— when I read that I felt like my hands were tied, because I— I want to use my knowledge and my training and my research and my understanding to help people. Um, and this is one way I feel like I could help people. But in all honesty, if you know someone who is unvaccinated personally, if you have a relationship with them, if you have established trust and friendship or, you know, it's a family member, you are in a better position in many ways to talk that person into getting vaccinated than I am.

Justin: This is what I was gonna say. This is the action item, right? Like, if you're— if you're despondent and you haven't gotten vaccinated yet, like, think of it like a, um... like, after a— a— a natural disaster. Like, checking on people. Like— and especially with that— there's a huge gap in those, like, younger people. I kind of assumed it was a bunch of, like, people in their 50's who, you know, were— were— were so, uh, anti-science that they could not be reached. These are younger people who just don't think it's a problem for them. Like, reinforce these things that Sydnee's saying with a check on people. Like, check on your— your friends and relatives that— make sure everybody you know has been vaccinated. If we all did that, trust me, the numbers would be a lot higher. Like, I— I don't know anybody in my personal life who has not— like... Sydnee would be, um, relentlessly hounding them, so.

Sydnee: I don't know anybody personally, um, that hasn't gotten vaccinated. Like, in my— in my family friend circle. I certainly know people who have not been vaccinated.

Justin: Oh, yeah, yeah, yeah.

Sydnee: Um, in my professional life. Um, and I— I will say that, uh... [sighs] trying to threaten people or, um, bully people into doing something doesn't work, ever, with anything really. Right? Like, it just doesn't. Um, but trying to encourage people, um, trying to— and I do think that, like, personal appeals, uh, personal stories do help. Um, asking the question why. Why didn't you wanna get vaccinated? What is your concern? 'Cause sometimes it's really easy to address. Other times it's not. Um, but, like, the... [sighs] I think that's the only thing you can do.

I would advocate very strongly, um, if you are in a... especially in school districts, this is a place where we might actually be able to get some traction. I don't think on a large scale if you're in a state like Florida or Texas where on a state level, you know, the government has decided we're done with this, we just don't—

Justin: [strained] Or West Virginia. [wheezes]

Sydnee: I— I don't think it's completely immovable in West Virginia.

Justin: Yeah.

Sydnee: But I do think we're... I mean, we're definitely on that end of the spectrum. Um, but I do think that maybe school boards, you may get a little more traction with. Because the CDC has come out pretty— I mean, very strongly that everyone in schools should wear a mask, um, vaccinated or not, period. Everyone should wear masks. And the American Academy of Pediatrics has echoed that, um, sentiment. So— and I think that it is right and wise and, um, we personally... [sighs] will be looking at another semester starting in virtual school, if our— if our county school board does not mandate masks.

Um... so I think that, uh— I think that that is a thing you can do, advocate. Even if you don't, um— this is something that we all have a vested interest in. Even if you don't have children, writing an email to your local school board and saying that you hope that the school board will follow the CDC and AAP recommendations is not a bad thing to do, because you're a member of the community, and when people who are unvaccinated in the community get sick... it spreads. And so it will impact your whole community, and maybe you personally. So it does matter.

When it comes to a virus like this, it doesn't matter what state you live in or what country you live in or, uh, if you have children or not, or if you are unvaccinated or not, or if you know someone who is at high risk or not, because it's all connected. It all— you— you get a voice in all of that, because all of us are connected. Which means everyone should have access to the vaccine. Everybody should be encouraged to get it. Everybody should be masked until we are at a point where the virus isn't

spreading. Um, and we should all be looking out for the vulnerable who cannot get vaccinated. Which right now is everybody under 12.

Justin: Yeah.

Sydnee: They are completely at our mercy. Whatever decisions we make next, they have to live, or not, by.

Justin: And we'll— and maybe be affected by for their entire lives. I mean, we have no idea.

Sydnee: Yes. And obviously this is also true for somebody who can't get vaccinated, or someone who has gotten vaccinated, but because they are on immunosuppressant medications or have other, you know, autoimmune disorders or whatever, do not respond to the vaccines. These people are also equally dependent on the rest of us to make good choices.

There was one other thing. A couple of people have emailed to ask about boosters.

Justin: Mm-hmm.

Sydnee: Uh, at this point I think the focus really needs to be on getting those... getting people who haven't been vaccinated at all vaccinated. I think that's the bigger focus. I don't think we have enough— the pharmaceutical company Pfizer believes they have enough data to recommend a booster. I don't think they've applied for that yet. So far we haven't heard that recommendation come from any other organizations, and I just think at this point, while it is— it may well be that we need a booster, um, which could be the exact same vaccine you already got, just another dose, or it could be something that's slightly different in response to these new variants. I don't think right now is the moment to go running and demanding that. Um... that day may come, but I think right now the bigger focus has to be on, we're back to masks. We're back to distancing. And we need people who are unvaccinated to, like... to help us all out.

Justin: Yeah. And you can— remember, you can reach out to people. Reach out to everybody. It's not out of line. You're not out of line. Like, this is the way it will happen. Like, there may be people in rooms coming up with plans, but you can act now. You can win... somebody over in your life, I guarantee it.

And here's the good news that I wanted to close on. I have a ray of hope for you, Sydnee, that some people may not be as hard to reach as we may be thinking. You know, there's a perception that some of these people are 100%, hardcore, never getting vaccines.

Sydnee: Right.

Justin: There have been some studies to that effect. But I know that there's a segment of the population that is a lot more malleable. As we mentioned, Disney parks announced that they are going back to masking. They had moved away from masking indoors, basically had just— had masks on transportation and moving back to— and that was a policy that changed in, like, late May, I think. They got rid of masking, and they're bringing it back because of the rise of the Delta variant and because Florida is an absolute nightmare right now.

Sydnee: Sorry, Florida.

Justin: Sorry, Florida. Yeah.

Sydnee: West Virginia feels your pain.

Justin: Yeah, we're right there with you. Um, but there's some people who say that— but when this change was made there was a lot— on some of my blogs, my Disney blogs, there was some feedback to this. And I wanted to share some of the reactions with you.

Sydnee: [quietly] Oh no.

Justin: Okay, just so you know— okay. This is— this is lighter.

Sydnee: [groaning] Oh no.

Justin: It's ending on a lighter note.

"Thank you for helping protect kids who cannot get vaccinated yet! Unfortunately, people cannot follow rules."

"Yes. Pleased to hear the indoor mask requirement with the rise of the Delta COVID variant. Our trip is scheduled in late August."

Good! I mean, but there are some people who are like, "[unintelligible grumbling]"

Sydnee: Yeah, uh-huh, uh-huh.

Justin: "I'm going in November. Guess no reason to get my second shot now. Was only getting vaxxed to enjoy my trip. If I'm required to wear a mask either way, no need to get the shot."

Hey, Josh? [wheezes] [through laughter] Hey Josh, can we stop the talk for a second? Are you telling me that you were only getting— okay, first—

you were telling me that you were only getting vaccinated— with your human body, you were only getting vaccinated so you wouldn't have to wear a mask at Disney, Josh?!

Sydnee: Do you remember the episode of *Sawbones* we did long, long ago on *World of Warcraft* when they had that...

Justin: Yeah, yeah.

Sydnee: What was it called? The virus outbreak.

Justin: The blood... blood virus, something like that?

Sydnee: Yeah.

Justin: I'm thinking of *Mythic Quest*, but go ahead.

Sydnee: Yes. And so they had the— and it went wrong.

Justin: Yeah.

Sydnee: But they've used it, this outbreak in a game, as a model for how people might respond to a real-world outbreak. And in it, people did some really weird things, like intentionally running to get infected or looking to see. And, like, weird— intentionally infecting others, and all these weird things that they were like, "I don't know if this would actually happen in real life."

I think what we've seen in the last year is that [through laughter] *World of Warcraft* was right.

Justin: *World of Warcraft* was right.

Sydnee: And that the behaviors of people in response... to this— I mean, we keep calling it this, like, existential threat, as if it's— but it's not. It's quite— it's quite— like, we can understand it. It's right here. It's a thing. It's a virus. We can look at it, it's just really small. But we know how to look at it now, and we could all work together, [loudly] just like we have over and over again in human history—

Justin: I was actually trying to close on a fun note, and you are really killing my energy right now. I was trying to bring it up—

Sydnee: You just told me about this guy who's not gonna get his second shot because he has to wear a mask on It's a Small World in November.

Justin: Well, he was only getting it to— so he didn't have to wear a mask. Like Kelly P who said, "I got vaccinated so I didn't have to wear a

mask at Disney. [holding back laughter] If you're worried and unvaccinated, don't go to Disney."

So this is what I'm saying. This is why I think it's a hopeful note. These are people that only put the vaccine in their only human body, they put the— no— no— no desire to get a vaccine for any reason other than they don't have to wear a mask at Disney. If those are the stakes... there is a percentage of the population that can be reached. They have not gotten their vaccines, but something... [laughs] nigh-meaningless can cast in front of them to convince them. There are people who can be swayed. This is what I'm saying. There are people who can be reached! It's not just Disney people, although I'm saying if Mickey Mouse called them on there, like, "I'll give you—[Mickey Mouse impression] Old pal, I'll give you an extra hour of magic at the parks! You can stay longer, haha! If you get your vaccine!"

Sydnee: If you gave people fast passes again, they probably would get vaxxed.

Justin: Probably.

Sydnee: This is so... if you don't live in the US, I am sorry.

Justin: I am sorry. This must seem absolutely unhinged.

Sydnee: I— I— I really—

Justin: Absolutely.

Sydnee: I don't know how to apologize... enough.

Justin: Although, you know what? A lot of these countries are gonna have their own things. Like, I get— I think that— you know what? It's interesting, it's an interesting question to wonder about, if— I say "interesting" like it doesn't have huge ethical ramifications, but would the US be having— like, the US rushed to get as many vaccines as it could, right? And sort of, like, uh, boxed out some other smaller countries to get as much as we could, uh, and then the people didn't wanna take them. If we had let it play out where, like, other countries got lots of doses and were using it, do you think there would be less vaccine hesitancy in the US? Like, do you think that if it was—

Sydnee: If it was harder to get?

Justin: Harder to get, or we had seen it for longer in other countries, like, play out longer in other countries and then...

Sydnee: I do think— I do think there's a little bit of, like— I mean, there are still people who are saying they're just waiting to see, they're waiting to see how other people do. I— I can't. I just can't comment on that. Maybe that would've made a difference. I don't know. I have heard a lot of people— maybe this is a place you can do some work. Other than, like, advocating personally to your family and friends. I have seen— there are still people who aren't against the vaccine on principle. They're worried about, um, side effects. Specifically, like, missing work. Um, because of some of the horror stories they've heard from people who had, you know, more severe vaccine reactions.

And I saw someone say, "But then it occurred to me. I'll miss a lot more work if I get coronavirus."

Justin: Mm-hmm.

Sydnee: "Um, and that's why I got vaccinated." And I think that's a good point to continue to make to people. I think continuing to make the point. It is free. If you don't have insurance, it doesn't matter. Even if they say bring your insurance card, it doesn't matter if you don't have one. You can go get it anyway. You don't have to have an insurance card.

I think making those points—there still are inroads to be made, you know, in some people. Like, some communities that are vaccine hesitant because of those sorts of fears. Those are conquerable. People who think there are microchips in there, I don't know— I don't... [pause] there aren't.

Justin: There aren't, if that helps. There aren't.

Sydnee: There aren't.

Justin: Hey, thanks so much for listening to this episode of *Sawbones*. If you'd like to donate to the Immunization Action Council, you can do so direct—

Sydnee: Coalition.

Justin: Uh, what? Sorry, yeah, the Immunization Action Coalition, thank you. You can do so directly at immunize.org, or you can go to mcelroymerch.com, and we have a vari— and, uh, buy a, uh, t-shirt about vaccines, or bumper sticker about vaccines, uh, saying that they are safe and effective. Um, and all the proceeds from those go to the IAC as well. So, um, they are among the smart people in rooms trying to [wheeze-laughs] figure out how the...

Sydnee: How to—

Justin: [sighs heavily]

Sydnee: —how to get everybody on board with doing the right thing for them and everyone else. I mean, it protects you and your community. Please encourage others to get vaccinated. Please get vaccinated if you're not.

Justin: Personal liberty doesn't play in when it's a, uh, [laughs] communicable disease.

Sydnee: This is a public health crisis. It is a— the— the past year has brought us a scientific achievement that is— that only few others have matched in human history, but yet a public health failure of monumental levels.

Justin: Which I think... I mean, honest— oh, I don't wanna get o— on— off on another topic. Hey, listen. Thanks to The Taxpayers—

Sydnee: [laughs quietly]

Justin: —for the use of their song, "Medicines," as the intro and outro of our program, and thank you to you for listening. That's gonna do it for us, so 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!

[theme music plays]

[chord]

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