Sawbones 456: Hepatitis

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Clint: Sawbones is a show about medical history, and nothing the hosts say should be taken as medical advice or opinion. It's for fun. Can't you just have fun for an hour and not try to diagnose your mystery boil? We think you've earned it. Just sit back, relax, and enjoy a moment of distraction from that weird growth. You're worth it.

[theme music 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: [sighs] How are you doing, Syd?

Sydnee: I'm hungry.

Justin: Oh man, yeah.

Sydnee: [laughs]

Justin: Well, hi Hungry.

Sydnee: Oh no…

Justin: I'm Dad.

Sydnee: That's a dad joke.

Justin: Yep.

Sydnee: That's a very daddy… Not…

Justin: I was telling the girls—

Sydnee: Not daddy joke, that's not—

Justin: No. It's a zaddy—

Sydnee: That sounds different.

Justin: A zaddy joke.

Sydnee: [disappointed] Oh…

Justin: Oh man, I made the girls—

Sydnee: Did you just call yourself a zaddy? Did you just decide you're a zaddy?

Justin: I don't actually know if that's positive or negative.

I… I made the girls so mad yesterday. They got in the car after school and they were both telling me how hungry and thirsty they are.

And no matter what they said, I just keep telling them that I'm Dad. "Hi Hungry, I'm Dad. Hi Thirsty, I'm Dad."

They were ruinously frustrated with me. It was… It was not a good scene. I don't know why I did it, honestly. I just wanted the challenge? I don't know. I was intentionally poking the bear.

Sydnee: Yeah, I wouldn't do that when they're hungry. Especially not—

Justin: Poke the bear until the claws come out, that's what Tay-Tay says in "Mad Woman," right?

Sydnee: Uh-huh. Thank you New York Times crossword puzzle.

Justin: Thank you New York Times crossword puzzle.

Sydnee: [laughs]

Justin: By the way, I meant to tell you by the way, that peaked at like 47 on the charts. That is not our fault for not knowing that track. Okay.

Sydnee: Well, I just like—

Justin: Rileigh would have known it, fine. But I did not.

Sydnee: I was gonna say, I like that we refused to ask Rileigh.

Justin: No.

Sydnee: Even though Rileigh would definitely have immediately known the answer to that.

Justin: Yeah. No way.

Sydnee: Justin, we're not…

Justin: Too easy.

Sydnee: [laughs] I wanna talk about something else now. [laughs]

Justin: Okay. Is that how it works?

Sydnee: Mm-hmm.

Justin: You just do that? Okay.

Sydnee: Yeah. There's a topic that I realized we had never covered on *Sawbones*. And can I just say, sometimes I'm not sure that we have and I have to Google and find out if we have.

Justin: Yeah.

Sydnee: I Googled to see if we had and I can't find it, but I'm worried that… I start to get worried that I'm wrong. I heard recently from a listener that we may have done lice twice, that we did do lice twice, I should say.

Justin: We did lice twice?

Sydnee: We did lice twice.

Justin: I wonder if it's different. It’s probably very different.

Sydnee: It's probably different.

Justin: We had a much different—why are you just telling me this now?

Sydnee: I don't know. I don't know.

Justin: On the air.

Sydnee: I didn't want to say it out loud.

Justin: But… So you said it out loud into a microphone that I'm recording on?!

Sydnee: I don’t know.

Justin: This is very stressful. I have to go back and address this.

Sydnee: I don't… I don’t think there's any way to address it. It's out there now. It's out there in the world.

Justin: Did two lice episodes.

Sydnee: We did.

I don't think we've talked about hepatitis C before. I know we talked about hepatitis. I believe we talked about other hepatitides.

Justin: [snorts] Is that a real word?

Sydnee: Yes.

Justin: Oh boy, that’s a mouthful.

Sydnee: But I do not… I… Best as I could Google and search our podcast history—listen, can I tell you—what? Why are you giving me a look?

Justin: I'm not giving you any look.

Sydnee: Okay. Can I tell you why I don't like to go back and search to see, “Have I just forgotten that we already covered this?”

Justin: Yes.

Sydnee: Because I have to Google our podcast.

Justin: And you don't like to do that?

Sydnee: No.

Justin: Because it's on the Internet?

Sydnee: Because it's on the Internet.

Justin: Yep.

Sydnee: And it's similar to Googling oneself, which you don't want to do.

Justin: Nope.

Sydnee: You also don't want to Google anything you create, ever.

Justin: Yes. Right.

Sydnee: Ever. This is an important rule.

Justin: You put it in the bottle, you chuck the bottle in the ocean.

Sydnee: You do the best you can every time and try to hope—you try really hard. And that's what I'm doing. I'm trying really hard.

Anyway, we're going to talk about hep C. It's something that's on my mind a lot because of the type of medicine I practice nowadays.

I provide a lot of care for people with substance use disorder and people who use injection drugs. And because of that, there's an overlap. There's a high prevalence of hepatitis C among that patient population.

Justin: Makes sense.

Sydnee: So it's something that I think about a lot. It’s something that I'm currently signed up for extra CME, continuing medical education, courses to treat, all by my lonesome, Once I've completed all that coursework.

Justin: You just love it.

Sydnee: You know you don't really have to do that? I thought you might find this interesting.

Justin: What do you mean?

Sydnee: I am currently in the midst of doing a lot of extra CME, a lot of— And when I say that, what I mean is like I'm paying for self-study courses and modules and exams that I take.

Justin: Okay.

Sydnee: That I then receive credits for, which are important to maintain my licensure. But also like just for my own edification. So that when I manage different conditions, I know I'm competent. But there's no like, rule, that says I have to do that. Isn't that weird?

Justin: I did not know that.

Sydnee: Like I don't have to have done this extra CME that I'm doing on HIV and hep C so that I can manage these things. I just am—I'm just doing it.

Justin: For the fun?

Sydnee: No, I mean like…. 'Cause I mean it's the right thing to do. But it's just weird that you could also just manage those things if you have a medical license.

Justin: That is weird.

Sydnee: Yeah.

Justin: But I think it's good. I mean, I learn about stuff all the time I don't need to. I think it's great for your brain.

Sydnee: It's a level of trust they put in me as a professional that I'm not used to like… my profession getting.

Justin: Yeah.

Sydnee: I don't know. I'm not used to getting that as a professional. Anyway.

Justin: I gotcha.

Sydnee: But I am doing all the right stuff. And now, it's a great story to talk about now when we talk about hepatitis C because… it's curable.

Justin: Is that a new thing?

Sydnee: Relatively new, yeah.

Justin: Okay.

Sydnee: I mean, not like yesterday, but in the grand scheme of medical history—

Justin: The last week, last couple of weeks.

Sydnee: No, not last couple weeks. [laughs] Longer than that, but still newer.

There are a lot of hepatitis viruses. We've talked about some of them on the show before. You're probably—you've probably heard of them. The word hepatitis, by the way, just means "inflammation of the liver."

Justin: Mm-hmm.

Sydnee: Any "itis" is an inflammation.

Justin: And any "hepa" is the litter.

Sydnee: Yeah. The liver.

Justin: Liver. Liver.

Sydnee: We're referring to the liver. Hepatocytes are—

Justin: Except for a HEPA filter, that's completely different.

Sydnee: That's a whole other thing. Hepatocytes. "Cytes" are like cells and "hepato," liver cells. So "hepa" meaning "liver" and "itis" meaning inflammation.

But then there are also viruses that can cause inflammation of the liver and we call those the hepatitis viruses.

Justin: Okay.

Sydnee: Got it?

Justin: Got it.

Sydnee: This one, hep C, is a little RNA virus. It's in the flaviviridae family.

We've talked about flaviviruses [long "A"] before or flaviviruses [flat "A"], fla [flat "A"], however you want to pronounce it. You liked that, I remember.

Justin: Mm-hmm.

Sydnee: In that family you also find things like Zika and dengue and yellow fever and West Nile. Some of the other things we've talked about on the show.

Justin: Some intense stuff in there.

Sydnee: Hepatitis viruses get their own little genus. Or large genus, as it were. Filled with just those specific viruses that tend to all primarily affect the liver. They can do stuff outside the liver, but they're mainly a problem—

Justin: Liver-centric.

Sydnee: … for the liver.

The way that hep C works specifically, because each one has their own sort of little profile as to what exactly it does, how long it does it, how serious the complications can be and how you get it.

The way that you contract hep C is usually through some sort of bodily fluid.

Justin: Those can be like pee or spit.

Sydnee: Well, no, not… not exactly. I'm talking more like blood.

Justin: Oh, okay.

Sydnee: Or a sexual fluid exchange.

Justin: Nice.

Sydnee: [laughs slightly] So injection drug use is a major… the primary mode of transmission. You can definitely contract hep C that way and many people do. Sexual activity.

There are a lot of healthcare exposures as well. That's actually a bigger concern. When I say a lot of, I mean in… Relative to HIV, which I think is another worry people have when they get like a needle stick in a healthcare setting.

Hepatitis C is actually more easily transmitted in that way, and is usually more of a concern. So you do see people who got hep C through a healthcare exposure.

I knew a colleague who had to sort of change, at the time, had to change their path in medicine to a different specialty because of an early career hepatitis C exposure and then developing the disease.

Justin: Oh my gosh.

Sydnee: So, you can get it that way. You can also get it through transfusions, not so much nowadays, but this was a threat, right? Prior to us having good screening.

Justin: Detection.

Sydnee: Yeah, screening protocols for screening transfusion products, any sort of blood product. You could get it that way.

Perinatal transmission. The virus primarily affects the liver, as you may imagine. After… Anywhere from one to three months after you're exposed. So there can be a lag.

Justin: Okay.

Sydnee: You contract hep C, and then it can be a little bit of time before you notice any symptoms. Those early symptoms—and not everybody gets acute symptoms immediately in that initial infectious phase.

Justin: Nothing cute about it.

Sydnee: [laughs] But you get like, some nausea, vomiting, maybe a fever, maybe some muscle pains. Really non-specific stuff, right?

Justin: Okay.

Sydnee: Like stuff that you wouldn't necessarily know. Now if you start to become jaundiced, or if your urine gets really dark because there's bilirubin in it, so it looks like dark orange. Or if your stools change color. You would probably notice these things.

Not everyone gets all of these symptoms, though. So you wouldn't necessarily know you were infected. This is really important. I'm pushing this idea that you wouldn't necessarily know you got it, because that still remains a major problem. People not knowing that they have it.

Justin: And you wanna freak people—you want to freak our listeners out a little bit more.

Sydnee: No! I want to empower them with knowledge—

Justin: To freak out.

Sydnee: … that allows them to make—

Justin: To freak out.

Sydnee: … informed healthcare decisions about whatever screening tests they may need.

Justin: Okay, fair enough. So you wouldn't necessarily know if you had it or not?

Sydnee: Right.

Justin: Okay.

Sydnee: Some people can progress to liver failure in that initial acute phase, but the vast majority do not. That's pretty rare, actually.

And there are some reasons why somebody might be more likely to develop the more severe complications. Like if you also have another type of hepatitis, like hep B or something, or if you're also co-infected with HIV. If you have damage to your liver already from alcohol or something like that.

So there are some reasons why you may be at higher risk for initially having a more serious course. Most people, you get the acute symptoms, they go away, and then they will progress to long term hep C infection. So 70% are going to continue to sustain some damage from the virus, long term.

And then way down the road that can result in things like cirrhosis. It can result in really serious things like hepatocellular carcinoma, cancer of the liver. So it's a big deal to treat hep C.

Justin: Okay.

Sydnee: Because while some people are never going to have any of these complications—and some people get the virus, get sick, get better and then don't ever have any issues again.

Justin: Mm-hmm.

Sydnee: The majority are going to have some sort of problem from it. Minor, major, some sort of problem. So it is important that you know if you have it, that you get tested, and that you get treated.

Justin: Can I ask you a sort of… This is sort of a wide-ranging question, but I'm curious about it.

Why is this the one where they do… and there's probably others and I'm looking forward to hearing about 'em if you know 'em. Why do we have like, the A and the B and the C for hepatitis?

Because I feel like… I was sitting here thinking like man, my brain just will not… We've talked about hepatitis a bajillion times. My brain, just like, will not absorb the… what hepatitis is and does. Like, I can't hold on to any facts about it. And I feel like it's the ABC thing. I think it's like kind of confusing.

And I don't know if there's like other examples of us doing… splitting things up that way or…?

Sydnee: Mm-hmm.

Justin: Or what's the purpose?

Sydnee: We split 'em up sometimes by genotype like that. Well, no, that's not genotype. We split—so we split 'em up by species.

Justin: Mm-hmm.

Sydnee: And then we can also split them further by like genotype and then split them even further by like subdivisions of the genotypes. There's lots of different ways to split up—and I mean all of them—I shouldn't say all. The vast majority of viruses are split up like this.

Justin: Okay.

Sydnee: I think the reason that you hear about it more with hepatitis, specifically is because they're very common, well-known viruses. And some of them use numbers and I don't know.

Justin: Like COVID-19.

Sydnee: I mean like—yeah. Yeah. But like, we also didn't talk about the other—well, that was because it was 2019.

Justin: Oh, yeah, okay, fair.

Sydnee: But we also didn't talk about a lot of the other strains of coronaviruses before, because most of them weren't a big deal. Now when they were a big deal, we did talk about them, right? SARS.

Justin: Yeah.

Sydnee: That's a coronavirus.

Justin: Yeah, I just… I just feel like the lettering thing is kind of confusing.

Sydnee: I don't… It's just a way to denote different ones that have slightly different modes of transmission and different concerns should a person get them.

Justin: Okay. That satisfies me.

Sydnee: But yeah, no, it's not… it's not unique to hepatitis. I just—they're very common. And so we talk about them a lot. And they're more serious too. There are some viruses that are very, very common, and we almost never talk about because the vast majority of the time they don't do anything.

Again, I referenced coronavirus prior to COVID-19. Had you heard the word coronavirus prior to then?

Justin: No.

Sydnee: Okay, you have had a coronavirus prior to COVID-19. [laughs] I had too. Statistically, we all have. Because for most of the other versions it was a common cold.

Justin: Right.

Sydnee: So anyway…

Justin: Anyway. Sorry, sorry. Forgive my diversion.

Sydnee: No, that's okay. It's a good question. It's a good question. And it is… It does make it harder to remember, I think, what they all do. Other than generally if it's a hepatitis, it's gonna do something to the liver.

Justin: Okay. That's good enough for me.

Sydnee: Yeah. We can't find evidence—So the hepatitis virus only survives inside living organisms, so it's hard to find, like, clear evidence that we have

had hepatitis around since ancient times, right? Because like, those people are dead ‘cause they're ancient.

Justin: That's true, yeah.

Sydnee: Yeah. There's some evidence—like, we always try to link this stuff to primate viruses. That's typically the way we go.

Justin: Primate, did you say?

Sydnee: Primate viruses.

Justin: Okay.

Sydnee: That's typically what we think, right? Like this is… They're probably the early precursors to our human hep C, probably with some sort of primate hep C or something like that, right?

We're not sure. Maybe there—but nothing's been conclusive, so it could date back millions, you know, 35 million years. It could date back like 400 years. We're not really sure.

Justin: I hope nobody had to work very hard to obtain the information you've just passed on to me. Because it's kind of pointless. [laughs] I don't know. I feel bad for whoever researched that because they got to the end of that and they're like, “Guys—”

Sydnee: That's not fair.

Justin: “I feel like I just wasted my time. Like, I don't know, 400 or a bajillion. I don't know. I feel like we know less about it than where I started. I'm gonna go.”

Sydnee: [laughs]

Justin: “I'm gonna go into math. I get that.”

Sydnee: Well, it's always interesting to see like, where the—to trace the sort of family tree of these viruses.

Justin: Not… So, not always interesting 'cause sometimes what you end up with is 400 years or maybe like a bajillion years. So that's not always interesting, I would say.

Sydnee: [laughs skeptically] Okay. Well, in this case, maybe it's not interesting.

Justin: [laughs] Okay.

Sydnee: So the other way we can kind of tell how old something is by looking for records of the symptoms and saying like, "Oh well, they didn't know what this was called yet."

But we can look back and see that sort of like constellation of symptoms in a person and go, "Oh. I know what that was. It's this disease, this bacteria, this virus," right?

It's hard with hepatitis in general because the symptoms are really nonspecific. It's sort of a longer time period, right? Like from that initial infection to when you get symptoms to when you might have serious complications can be such a long, drawn-out process—

Justin: Right. Right.

Sydnee: … that at that point connecting it all without knowing the disease-causing agent would be very difficult. And there are lots of things that can cause liver failure. So, it would have been really hard to blame it on anything.

What is interesting I think is that we actually would discover what would be one of the first treatment regimens. Not so much what we use today, but one of the first real breakthroughs in treatment of hep C, was actually discovered before we knew about hep C. We figured out that first.

Justin: That's wild.

Sydnee: Yeah. So there’re something called interferons—

Justin: Oh, yeah! That was—

Sydnee: Which are actually—

Justin: Aw, man… We didn't talk about that during COVID did we?

Sydnee: Probably.

Justin: Interferons is like in my—I don't know.

Sydnee: I'm sure we did. Interferons are produced by your body in defense of any sort of invader, primarily viruses, and they help make your immune response happen.

Justin: Okay.

Sydnee: So interferons are really important little messengers that will tell your body to like, get it into gear, and interfere with the virus continuing to grow and replicate within your body. Okay?

Justin: Okay.

Sydnee: So, back in 1957, a British bacteriologist, Alick Isaacs and a Swiss microbiologist, Jean Lindenmann, discovered these things.

And we thought, “Well. Maybe we could put these in a bottle and give them to people when they're sick.”

Justin: Nice!

Sydnee: And at that point, like, they seem to work anytime you had some sort of invader, any virus. So why couldn't they be used sort of like as a blanket treatment for viruses.

Justin: Yeah.

Sydnee: So, when I say the treatment was discovered before the disease itself, it was a treatment for all sorts of viruses. If that makes sense.

Justin: Yeah.

Sydnee: Yeah.

Justin: Still.

Sydnee: And it wasn't until the '70s that we did more research and we said, "Huh, these seem like they might prevent viral infection, possibly. Maybe they have more broad-ranging… You know, like with cancers, maybe they can suppress cancers."

Like we learned a lot about interferon, long before we knew about the virus that interferon would be one of our first tools to treat.

Justin: Huh.

Sydnee: And we also didn't learn about hep C first, obviously. Because then it would probably be…

Justin: Hep A.

Sydnee: Hep A.

Justin: [laughs]

Sydnee: As you may imagine, we found the other two… We found two of the other hepatitis viruses before we found hep C.

Justin: Yeah, right. One would hope.

Sydnee: Hep A and hep B were discovered in the '60s and '70s. And it was one of those things where we found a test for hep A. We found a test for hep B.

We started finding people with what we saw as like a transmissible liver disease, epidemic liver disease. People were getting liver disease and it wasn't from some other environmental cause, because it was in such—it was spreading.

And so from an epidemiological standpoint, we could look and go, "Okay, all these people got this liver disease. Something is contagious here." So we test them for hep A, it's not that. We test them for hep B, it's not that. And then we go, "There's something we don't know about yet."

Justin: It's a new hep.

Sydnee: And that was that was the next journey that it took us a while to go on, was, "We know there's a virus. We know it's probably like these other two. But we can't see it or grow it or find it."

Justin: [sighs] Now, okay. Is there a hep D?

Sydnee: Yeah.

Justin: Is there a hep E?

Sydnee: Yeah.

Justin: Is there a hep F?

Sydnee: No.

Justin: Good.

Sydnee: [laughs]

Justin: That one I didn't like saying. "Hepef".

Sydnee: "Hepeff."

Justin: "Hepeff," it sounded bad.

Sydnee: No. So we knew there was—

Justin: Hepatitis X is what I would like to have someday, but it seems like we're a long way away from that. It just seems like, if I was going to have a cool cyber disease, it would probably be hepatitis X.

Sydnee: Yeah. I mean that does—And maybe hepatitis X is when it starts to work in our favor.

Justin: Ohh! That's the good one.

Sydnee: That's the good one.

Justin: That's the one you want to have.

Sydnee: So anyway, we knew there was a cause of liver disease we were missing. It wasn't one of these two that we know about, but we didn't know what it was quite yet.

Justin: Okay.

Sydnee: And I'm going to tell you how we figured out what it was, but first we've got to go to the billing department.

[ad break]

Justin: Alright, Sydnee, fill me in.

Sydnee: Okay.

Justin: Okay.

Sydnee: So, it's the mid-'70s at this point. We know that there is something happen—especially, like a lot of these cases, as you may imagine, were related to transfusion, to the transfusion of blood products.

Because this is before we had good screening for stuff. So you would get a blood transfusion and then you'd get liver disease afterwards.

Justin: Right.

Sydnee: And so we started to screen and we saw, "Oh. Some of these cases we can pin on hep B, largely. But there's something else here."

Justin: Something different.

Sydnee: There's something different.

Justin: Just a little bit off. It's a little different.

Sydnee: So the chief of the infectious disease section at NIH at the time Dr. Alter started teasing this out. And like basically pointed out that, "I have all these cases of transfusion-related liver disease.

"You know, I've linked them to that. I can't find another cause and they definitely developed it afterwards. And they are negative for hep A or hep B." And basically, they said, "Okay. Well, we'll call it 'non-A, non-B hepatitis.'

Justin: Oh, that's—Wait. Non-A… Okay. Non-A, non-B hepatitis—

Sydnee: Yes.

Justin: … is the y'all could come up with?

Sydnee: That's what it was. And then—

Justin: Not even "Non-A, nor-B hepatitis"?

Sydnee: It was… Non-A, non-B hepatitis, is what it was called.

Justin: Neither A nor B hepatitis.

Sydnee: So we know you have a hepatitis. It's not A or B. That's the best we got for you, sorry. Bad luck.

So it took… It would take a while. So this is the ‘70s. It wasn't until the late ‘80s that we made a lot of progress in that realm.

We knew it was there. That's so frustrating, right?

Justin: Mm-hmm.

Sydnee: We knew it was there, but we just couldn't see it yet.

Justin: Why wouldn't they just call it hepatitis C? I don't understand.

Sydnee: Well, they just didn't know… Well, they didn't… They didn't know enough about what it was yet to firmly place it in that position.

Justin: Okay. But they are agreeing that it's a hepatitis, and it's not A or B and then they're just sort of like extending their pinky up to their cheek like, “I’ll never tell.”

Sydnee: [laughs]

Justin: It’s like, “It's hepatitis C, dude! Just do it!”

Sydnee: This same doctor would finally use new technology, molecular cloning, in 1988 to prove and announce, “Yes, we have seen it. It is there. It is hepatitis C.”

Justin: I know what happened. I know what happened.

Sydnee: And by today's standards, by the way, what we now know is that probably, of those original cases that he had set aside and said, “These are due to non-A, non-B hepatitis,” somewhere from 90 to 95% of those were hep C.

Justin: I feel like I know what’s gonna—I know what happened, is that Harvey Alter was like, “Maybe if it's weird enough I won't even have to call it C and I can call it hepatitis Harvey.”

Sydnee: Oh, there we go.

Justin: He was hoping that he could name after himself, but he's like, "Ah, no, this is C. We all know it."

Sydnee: Who doesn't want a hepatitis named after themselves?

Justin: Hepatitis Harvey is pretty good.

Sydnee: So at the time… So, we needed a good test for it. Just because we had found it doesn't mean we had a good test for it, right?

Justin: Right.

Sydnee: Like, this has been an ongoing challenge throughout a lot of medicine. You can talk about this extensively with HIV.

We knew there was something there. We understood a lot about it. But it took us a while to have a good test for it.

Justin: Mm-hmm.

Sydnee: And so if you don't have a test for it, it becomes really difficult, like…

Justin: To test for it.

Sydnee: Well, to know… To stop the spread of it.

Justin: Mm. Mm.

Sydnee: To protect people from it.

Justin: Sort of like… Well, we saw that with COVID, right?

Sydnee: Yes.

Justin: Places stopped tracking it and then…

Sydnee: And then it just spreads.

Justin: Yeah.

Sydnee: Yeah, we've seen all this in real time with COVID. And it was the same thing with hep C.

Now at the time, in Japan, the Japanese health ministry was working on a hepatitis B vaccine.

Justin: Mm-hmm.

Sydnee: And at the same time, the emperor at the time, Hirohito, had developed cancer and was needing a lot of blood transfusions. So they're already sort of in this area of technology.

And basically, the Japanese health ministry is like, "We need to—Let's work with Chiron, the company Chiron, to develop a screening test for this new hepatitis."
"Because our emperor's needing blood transfusions and we don't want to accidentally give our emperor this non-A, non-B hepatitis, this brand new thing. So we need a test for it."

Sydnee: So that was a lot of the impetus. I mean obviously there was a… It was bigger than this.

Justin: But…

Sydnee: But, it's an interesting anecdote about this big push that, "We need to get a test so that we can screen blood. And specifically, we've got somebody really important over here who we need to screen blood for."

Justin: So now we care. Now we care.

Sydnee: Yeah.

Justin: Now we're worried about it, 'cause the king might get hepatitis C.

Sydnee: And it also led to like, briefly they called hepatitis C, "The Emperor's new virus."

Justin: [laughs hard] Alright. Alright. almost makes up for hepatitis neither A nor B.

Sydnee: Yeah. And they—There was like a lot of the company that did it was kind of exclusive and secretive about it, like selling it just to the Japanese health ministry at first and all this and.

And it's also not fair because it wasn't that the Emperor had the new virus it was that—

Justin: They didn't wanna get it.

Sydnee: … they were testing the blood for the… Anyway. [sighs and laughs] So we know about the virus. We can test for it. These are all big, big steps forward.

And by the '90s we really understood interferons and we had a variety of them that we were developing for different viruses, and eventually for cancers and all kinds of things.

So throughout the '90s, you see various treatment protocols being approved by the FDA for hepatitis C, using different kinds of interferons.

Justin: Okay.

Sydnee: So they're based on things we already make in our own human bodies and then they synthesize those, make them, and sell them for large amounts of money.

And so that was part of the problem with a lot of these early treatment protocols. They were extensive, long courses of injections of IV medications, like yearlong, some of them. Multiple treatments.

They have lots of side effects under a best-case scenario like half were successful, in the best cases, you know.

So it wasn't… These were not going to be… It was very clearly on like, "This is probably not going to be the mainstay of treatment."

And what was also interesting is that the companies who made these early medications, these interferons, actually—and this is such a double-edged sword. They actually did a lot of work to create public awareness about hep C and I would say fear. They created patient advocacy groups.

Justin: For… for what?

Sydnee: To put pressure on public officials to demand more diagnosis and treatment of hep C. This wasn't a grassroots effort from patients up. This was large pharmaceutical companies creating.

Justin: The hep… The hepatitis C…

Sydnee: Panic.

Justin: Panic.

Sydnee: Among patient advocacy groups that weren't real. They were all funded by pharmaceutical...

Justin: Oh my gosh.

Sydnee: Yeah, it was… And like, it's so tough because the reason they were doing that is because they had an incredibly expensive drug that could be very lucrative for them, if only people knew it existed.

Justin: [laughs ruefully]

Sydnee: And then also if they were scared enough to go get tested and find out they had hep C and then seek the drug.

So nefarious motivation, but like we do want people to be aware and get tested.

Justin: Right.

Sydnee: Not to be scared, but to be informed and make good decisions. Again, but the point was very much to like, "Okay. Then we are driving consumers for our product.

Justin: Ugh.

Sydnee: Which you know is—

Justin: [sarcastic] It's weird to see the pharmaceutical companies doing something bad, that's—

Sydnee: [laughs]

Justin: … so wild.

Sydnee: Well, and I mean that's just… Like, again, and I know I could say this 'til I'm blue in the face, when you have a for-profit healthcare system the motivations of these companies are always going to be for…

Justin: Profit.

Sydnee: … profit. So we finally were able to… You know, it's interesting, we had still not grown, so to speak, the virus.

Justin: Mm-hmm.

Sydnee: If you can grow a virus, propagate a virus, whatever word you want to use, because it's not… Is it living? Is it dead? It's a zombie. It's somewhere in between.

Sydnee: We didn't do that until 2005, when we were actually able to culture it in cells.

And being able to do that, like grow as much of the virus as you want, more or less, is really important if you're going to develop better drugs moving forward.

Justin: Because you gotta have the target dummies to beat up on.

Sydnee: Yeah. You can—Exactly.

Justin: Right.

Sydnee: You need the dummies. And you also can like… I don't want—I mean, I'm not literally, take it apart and look at it. But like sort of on a molecular level, you're getting to look at all the pieces of it to see all of the places you could stop it. All of its weak points, you know?

Justin: Butthole. Classic one. Eyeballs.

Sydnee: [laughs reluctantly] Viruses are not like the Death Star. There's usually more than one… one place.

Justin: Can you make it about sports?

Sydnee: [laughs]

Justin: A sports one would be easier for me to sort of wrap my head around.

Sydnee: So they started, after that, you started to see brand new antiviral drugs being marketed. Again, still, they were called cures, but we weren't quite—it would take us a while before we got to the point where we have what we can confidently say are cures for this infection now.

It is interesting that there are some areas where hepatitis C was particularly prevalent. Specifically in Egypt, they had had this big campaign to eliminate another illness, schistosomiasis. And in trying to treat everybody for this, they used needles that had not been properly sterilized—

Justin: Oh, gosh.

Sydnee: … and actually led to a very large hepatitis C outbreak. Again, before we knew it was hep C. We… It was—we were still calling it non-A, non-B hepatitis and before we could find it and all that kind of stuff.

The people who eventually—

Justin: Was it typical to reuse needles back then? Or was it just 'cause it was a resource-limited situation?

Sydnee: Um… So probably at this point we're saying it was not typical, but yeah, limited resource situations. And then also like sterilization pro—you can have the best of intentions and your sterilization procedures fail.

So like, there's a time period where we didn't know it was a problem. Then there's a time period where we knew it was a problem, but in resource-limited settings stuff that shouldn't have happened, happened.

And then there's a time period where maybe we're even trying in all settings to do it right. But if your sterilization procedures aren't perfect, you can—And that's even worse. If you think you're sterilizing things…

Justin: Mmm.

Sydnee: You know?

Justin: Mm-hmm.

Sydnee: And you're not. And then eventually we get to a point where, like, "We should never be sterilizing needles, 'cause we shouldn't use them more than once." In a perfect world.

Justin: Right.

Sydnee: Right. So in 2020, by the way, there was a Nobel Prize awarded to Alter, and then…

Who partnered with another, Dr. Houghton and Rice for their work in hepatitis because it was such a huge discovery and understanding it had

such a huge impact on the world today. Because it's important to know, so worldwide there are 58 million people living with hepatitis C virus.

Justin: Wow.

Sydnee: It’s a lot of people, right?

Justin: Yeah.

Sydnee: That's as of 2019 numbers. And an estimated 21% of those knew about it.

Justin: Hm. Wow, that is sobering.
Sydnee: Yes. This is why… This is why it's really important. And then even of those, around 62% had been treated by the end of 2019.

Justin: Hatchi matchi.

Sydnee: So we have huge… We really need to ramp up efforts to get people diagnosed and then connect them with treatment after they get that diagnosis.

I think part of what we're up against is there has been this sort of nihilism around hepatitis C, that it's hopeless and if you get diagnosed, there's nothing we can do anyway.

And that's not true anymore. There's very effective, well tolerated, safe, good side-effect profile cures available. It depends on your genotype and the subtype, and so all that can be figured out once you go see a healthcare professional. But now we have a pill that—

Justin: There’s a chance, broadly speaking. There’s a—

Sydnee: Yeah, we have pills that you can take. So not even injections anymore. And the price tag has lowered dramatically, so they're covered a lot more easily.

And we don't have the—We used to have a barrier that we would put on patients, that if you were still using injection drugs, we would not treat you for your hepatitis C until—

First it was six months, then it was three months that you had been in recovery. That barrier is gone.

Justin: Mm.

Sydnee: It doesn't matter if you're still using injection drugs, you can access treatment and cure for your hepatitis C. All of this information still needs to get out to the public.

There is a big World Health Organization campaign that they started prior to the pandemic, which I imagine has—

Justin: [laughing ruefully] And then it's like, "Who has the time?"

Sydnee: But there's a goal of eliminating it by 2030, 'cause this is possible. This would be possible. But before we get there, we need people to get tested.

Justin: Yep.

Sydnee: And we need people to not fear that if it's positive that there's nothing they can do, because we need them to have the information that if it is positive, there's treatment. There's a cure. They can go access that.

And it's affordable in some parts of the world.

All of this is with the caveat that I'm talking from the perspective of an American physician who knows that my patients, if I can get them tested, I can get them access to affordable treatment.

In many parts of the world, diagnosis, treatment, these are gigantic hurdles that they have yet to overcome.

Justin: At the risk of putting you on the spot, are there guidelines for who should and shouldn't run out and get tested for hepatitis C?

Sydnee: Definitely if you have any sorts of high-risk behaviors.

Justin: Okay.

Sydnee: So, injection drug use, you need to be tested for hep C. If you have high risk sexual behavior, so multiple partners, unprotected sex, those are good reasons to get tested for hepatitis C.

Justin: What if it's just hand stuff?

Sydnee: [laughs] Justin…

Justin: Sorry.

Sydnee: If you've had blood transfusions, especially prior to, I believe the year is 1992 is what the blood banks will tell you, that is prior to us having good screening protocols.

Justin: Okay.

Sydnee: And those are people who should get tested. So you know there are a lot of people out there—

For a while there, there was a whole push to get baby boomers tested because a lot of them may have been exposed to the virus back in the ‘70s, prior to us really understanding, or testing for, or screening for, these medications.

So… And there's still, as of yet, there's no vaccine available. So…

Justin: So we can't prevent it, but we are trying to cure it?

Sydnee: Yes.

Justin: Wouldn’t that go a long way towards getting rid of it, if we could get that vaccine… get that vaccine going?

Sydnee: Yeah, that's a whole other conver—it's a very difficult virus to vaccinate yourself against or to create a vaccine for, I should say.

But there are vaccines for hep A and hep B. And whether you have hep C or whatever, it's important to get your hep A and hep B vaccines. Because then even if you do contract hep C your risk is much lower of developing those severe complications if you don't have the other hepatitis viruses. So—

Justin: You can't drive through a drive-thru here in Huntington without a staunch assertion that everyone on staff has been vaccinated for hep A.

Sydnee: Absolutely, yeah.

Justin: Remember?

Sydnee: Yeah.

Justin: That was a big thing for a bit here.

Sydnee: So if you are concerned, if you've had any of those sorts of occurrences, it's a blood test, it's an antibody. It's a pretty quick, easy test to do. And do not fear it because there are treatments. There are cures available. But knowledge is power.

Justin: And hepatitis X is power. Pure, unbridled power coursing through your veins. That's why I'm offering it for 500 creds per hit. This is a scene from my future dystopian novel *Hep X*. Thank you—man, I actually need to take the time to write that.

Hey, everybody, thanks for listening to our podcast. Please don't steal my *Hep X* idea. We hope you've enjoyed yourself and hope you learned a little something. Go get tested if you're in that demographic, for lack of a better term, that Sydnee was describing. It's better to know, I think.

Thanks to The Taxpayers for the use of their song “Medicines” as the intro and outro of our program.

And oh, hey, do you want to come see us perform? Because you can if you go to bit.ly/mcelroytours and then you come see us in Columbus. The *My Brother, My Brother and Me* may show May 19th. I know. That's Friday, right? Yeah, May 19th, this Friday. You can come see us perform and you'll have a good time. And then you can watch *My Brother, My Brother and Me* after, if you want. If you want to just bail—

Sydnee: Only if you want to.

Justin: Only if you want to. I think *Shmanners* might be doing it too, but don't quote me on that. I know we'll be there, assuming [laughing] Sydnee can avoid the traffic after her lecture that she's giving.

And it's gonna be a fun show, bit.ly/—Sorry, go ahead.

Sydnee: I'm not giving a lecture. I'm just attending a conference.

Justin: CME, we're talking—[audibly jumps] Oh, geez! Sorry, Rileigh just walked into the room and scared—

Sydnee: I know.

Justin: … scared the crap out of me.

Sydnee: No.

Justin: It’s okay, Rileigh, you’re fine.

Sydnee: I told Rileigh to come on down for—

Justin: You didn't tell her to just barge in and scare the crap outta me!

Sydnee: I did. Well, we have to record *Still Buffering*. I didn't know you were gonna—I didn't know you were gonna talk so long.

Justin: That's gonna do it for us. Thanks so much. [laughs]

Sydnee: [laughs]

Justin: I’m Justin McElroy.

Sydnee: I'm Sydnee McElroy!

Justin: [laughs] What do I say? Don’t drill a hole in your head? [laughs]

[theme music plays]

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