Sawbones 564: Hepatitis B

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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: I didn't mean to... [sighs] I wasn't trying to sing. It just kind of—don't make me sing. It just kind of came out.

Sydnee: Did you see the title of my notes? It's right there. And I realized that, uh, it autocorrected.

Justin: It says "Hey, B. Vaccine."

Sydnee: [laughs]

Justin: "Hey, B."

Sydnee: "Hey, B."

Justin: "Hey, B!

Sydnee: "Hey, B. What's up, B?"

Justin: "Vaccine it, B!"

Sydnee: Yeah, didn't mean to do that. Meant to say hep B vaccine.

Justin: Hep b. "Hey, B!" [crosstalk]

Sydnee: But now it says "Hey, B."

Justin: Like some sort of, I don't know, slang in the profession?

Sydnee: No. No. Which means it's—is my document titled that? No, it's titled heb B.

Justin: Okay.

Sydnee: But it says...

Justin: Make sure you correct that, 'cause it'll make it harder to find later.

Sydnee: Well, no. It's titled heb B.

Justin: That's true. [crosstalk]

Sydnee: So it doesn't matter. It's just on my...document that it says "Hey, B."

Justin: Um, now, Sydnee, I...hmm...unintentionally inspired this week's episode? Is that fair?

Sydnee: That's fair. You did.

Justin: Yeah.

Sydnee: You did, and it was a weird convergence...

Justin: [laughs]

Sydnee: ... of occurrences.

Justin: Yeah, it—

Sydnee: Because something happened, like, nationally of note. And at the same moment, you made a personal decision. Which...tell me how it happened, because I have a theory. But share, share.

Justin: Okay. So, I was needing to get—okay, oh, god. Let me take you all the way back to two weeks ago, when I was fixing my daughters' sinks. And if you've never fixed a little kid's sink, especially my daughters' sinks, they are the grossest thing I've ever seen in my life. That's not an exaggeration. I showed Sydnee, an inner lining of gross sloughed out of the tube when I cleaned this thing.

Anyway, while I'm cleaning this disgusting thing, I cut—

Sydnee: It is the slime stuff. It's the slime stuff.

Justin: It's the slime junk. They put, like—

Sydnee: It's the hair, but then mixed with the slime stuff. Yeah.

Justin: So, yeah. [dry heaves] So, um...I cut myself on a rusty screw while I was down there, and it was like—I was thinking, like, "This is the grossest possible scenario for a cut." And I'm like, "I have to go—" and Sydnee asked if I had my tetanus shot, and the truth is, I don't know. I don't remember. Maybe, ten years ago? I mean, come on.

Sydnee: I think we were coming up on ten years, because I believe you did, as we were supposed to, when I was pregnant with Cooper. And so I knew it was coming up on...yeah.

Justin: Yeah. So anyway, I went into the, uh...to the drug store, made my appointment, and they had a thing on the checklist that's like, "Hey. While you're here, you wanna hook up a COVID vaccine?"

It's like, "Yeah, man. Slap it in there, as long as you got one cookin'."

And they're like, "Hey! You click this box, you get a heb B vaccine."

I was like...

Sydnee: So is it a box or a person? Did a person pitch it to you, or it was just on—

Justin: No, no, no, no. It was just a checkbox. And I was like, "Ooh! This one I've not heard about."

And this is—y'all, I wish it was—this is the exact truth. This is not a vaccine I'm aware of or one that I know I've had. I bet Sydnee will be really proud of me if I get an extra vaccine.

Sydnee: And I was.

Justin: And I thought it'd be, like, a cool, underground vaccine that she was like, "Whoa, it's like—" I thought it'd be kind of like when I got my food handler's license. It was, like, kind of overzealous, but like, you never know, it might come in handy! You know

Sydnee: Or like becoming a notary public.

Justin: Like becoming a notary public. Although that is slightly different in that it—people continued to need it day in, day out. I'm signing something for someone later this evening, actually.

Sydnee: But that heb B vaccine is gonna work for you day in and day out for the rest of your life, once you finish that series.

Justin: Mm-hmm. Well, yeah. I am gonna go back for another one of these. Now, I will say, the end of this story kind of is like me telling Sydnee that I had done this, and then Sydnee looking at me with...I guess confusion would be the look in your eyes, I guess. Sort of a perplexed confusion. It's like a—if you can be proud but confused, that's about where you were at.

Sydnee: Well, you came across it without my urging.

Justin: It's in a checkbox.

Sydnee: I know! But I guess I'm surprised when...

Justin: When I was a kid, I used to do, like—I would fill out these forms to get free products sent to you. It was very early days of the internet. It's like, "Fill in this thing," and you'd end up on a bunch of mailing lists, but maybe they'd send you, like, a free whatever.

But a lot of that was stuff like "Click the checkbox to get this." And, like, "Do you wanna add this on?"

I was like, "Yeah, I guess I do kinda want to add that on." You know what I mean?

Sydnee: I uncheck every checkbox. If something asks me—if something has checkboxes, I uncheck all of 'em. I don't want anything extra. I am—I came here—

Justin: It's wild, y'all.

Sydnee: —for this, and I don't want any extra things.

Justin: I've seen her get up on a—get hung up on a security prompt that she'll uncheck and then click submit, like, three times. And it'll keep going back to that screen. I'm like, "Hun, you gotta do it! You gotta say yes to this checkbox."

Sydnee: You're joking.

Justin: "Say yes to the check." I'm not.

Sydnee: [laughs quietly] I never know if they're gonna let me not accept all cookies or not. Like, can I reject all cookies, or are you making me accept all cookies?

Justin: Let me check in real quick and just ask you, what are those? Those cookies?

Sydnee: It's—it's like they're gonna know that I was on the website, and show me other things related to it.

Justin: Yeah, you're right. 100%.

Sydnee: Right, uh-huh. See?

Justin: Yeah, yeah, you're right. You made me look like the smarmy misogynist I am.

Sydnee: Back in college—

Justin: Now, smarmy maybe, but vaccinated against heb B? Partially. [laughs quietly]

Sydnee: Back in college in 2002, I took a class about media and internet.

Justin: Yeah.

Sydnee: That's—2002 is my understanding of things.

Justin: That's where we're at.

Sydnee: So there were cookies in 2002 is my point.

Justin: Spiders—spiders, cookies.

Sydnee: Bandwidth. I know all about bandwidth. That's what I know.

Justin: HTML.

Sydnee: So we've talked on the show about how...

Justin: HTTP.

Sydnee: HTTP. Colon, backslash, backslash.

Justin: Hmm.

Sydnee: WWW. We have covered previously on the show, you can't trust all the information coming out of the CDC right now. Which is not the fault of many if not most of the individuals who work at the CDC. Thank you, those of you who reached out.

Justin: Yeah.

Sydnee: As I knew you would.

Justin: Hang in there.

Sydnee: Uh, to say that there have to be people in there doing the good work. And there's a lot of good work still being done and coming out of there, even if other voices are being censored.

Justin: And hey, even if you're just slowing down the bad work. [wheezes] Great. Get in there.

Sydnee: Yes. Also, like, you can't always find a job, as many people pointed out, in your chosen field, if you've quit the one you had.

Justin: 100% true.

Sydnee: Right?

Justin: True and fair.

Sydnee: So in regard to immunizations, however, the CDC would not be my immediate go-to, at the moment. There are lots of other organizations we've talked about on the show, and I'll mention again. But as you may remember, we did an episode where RFK Jr. fired essentially everybody who knew anything about vaccines on the, um, council of individuals whose job is to advise us on what immunizations to get, and when to get them, and what that schedule should look like.

Justin: They've got to pick a better name for that organization, Sydnee. I don't even remember that acronym a lot of the time.

Sydnee: Advisory Council on Immunization—

Justin: [simultaneously] Council—[crosstalk] council on people that [crosstalk]—

Sydnee: —Practices. Honestly, I forget what ACIP stands for as soon as I say it. I say it, and then it goes right—I don't know why I don't have a mind for that. Anyway, so he replaced it with a lot of people who either just sort of peddle pseudoscience generally, or actively oppose vaccines. There are not many people left who are willing to follow evidence-based practices when it comes to immunizations anymore.

So, them changing recommendations on an essential childhood vaccine is not surprising. This isn't—this doesn't mean that new information—and I think this is the takeaway point of this. If you see a recommendation on immunizations change right now, you really need to remember that it is being changed by people who walked into this scenario skeptical about vaccines or anti-vaccines. So of course it's changing. No new information has been unearthed. It is not changing because we learned something new, and science changes, and that's the whole process. It is changing because of a political agenda.

Justin: Yeah.

Sydnee: Period.

Justin: Period.

Sydnee: So the recent change that coincided with you getting your hepatitis—your first of your hepatitis B series of vaccines—is that ACIP has said that hepatitis B vaccine should be a shared decision making...vaccine, in terms of when we start that series.

Justin: Meaning?

Sydnee: And no longer something that we recommend at birth, within 24 hours of birth. And a lot of people are confused as to why this is such a big

deal. Why—and if you're my age, or Justin's age, you may be thinking, "Well, I didn't get a hepatitis B vaccine at birth."

You didn't. It wasn't a recommendation yet. The hepatitis B vaccine was still something that you would get later in life.

Justin: Mm-hmm.

Sydnee: They changed that, and we'll go into why. I had to receive my hepatitis B series because...medical school.

Justin: Ah, makes sense.

Sydnee: Puts me at higher risk of contracting the virus. Justin is receiving it because he's a responsible guy.

Justin: Who doesn't...

Sydnee: Want to get hep...

Justin: ... think through all his...

Sydnee: ... atitis B?

Justin: ... decisions.

Sydnee: [laughs quietly]

Justin: All the way. [laughs quietly]

Sydnee: Now, when we talk about hepatitis, literally hepatitis means inflammation of the liver. A lot of people when they say hepatitis—and we've talked about other hep—hepatidities. Hepatitises.

Justin: [snorts]

Sydnee: Hepatidities.

Justin: That can't be it! That can't be the word. [laughs]

Sydnee: Hepatidities.

Justin: Certainly not.

Sydnee: Yeah! We've talked about other—

Justin: No, really?

Sydnee: We have, yeah! I think we've talked about hep A.

Justin: No, no, no, sweetheart, beloved.

Sydnee: Hepatidities.

Justin: You know that I'm—you know that I am not disputing whether or not we have talked about hepatitis-related subjects. It's the—I am disputing the word "hepatiddies". [wheeze-laughs]

Sydnee: Look at this right here.

Justin: It says—it says...

Sydnee: Hepatidities.

Justin: Hepatidities!

Sydnee: Plural for hepatitis.

Justin: [wheeze-laughs]

Sydnee: Hepatidities—

Justin: [laughs loudly]

Sydnee: —plural for hepatitis.

Justin: You gotta stop!

Sydnee: Sorry.

Justin: Don't say it anymore! [laughs]

Sydnee: I think we've talked about hepatitis A. I think we've talked about hep C.

Justin: Meaning in combination, we have talked about hepatiddies.

Sydnee: I don't know if we've done an episode specifically on heb B. I didn't think we had. But we certainly hadn't charted the history of the vaccine. We have known about what was called epidemic jaundice since Hippocrates. He described it initially. Meaning a bunch of people got jaundice at the same time, a bunch of people turned yellow. We didn't know why.

For a while, this was called serum hepatitis. It was something that was in blood, and then caused inflammation of the liver, and specifically we saw an outbreak of it after the smallpox vaccine. So, some of the original smallpox vaccines were made with human tissue, and so that's always a danger pre-screening era. And I always like to make that point.

So, there was a long time where we did not screen blood or tissue products, organs, things that we would take from one human and give to another. We didn't screen them for things like hepatitis and HIV because we either didn't know about 'em, or we didn't have the technology.

Now we screen those things, so you don't see those sorts of infections. But prior to that, if you were taking something out of one human and putting it into another human, there was a risk of, you know, contracting a virus that way. So we saw a big outbreak in Germany among shipyard workers who were given a smallpox vaccine that accidentally was contaminated with what was called serum hepatitis at the time.

Um, we began to see more and more reports of it, largely connected to some sort of needle-sharing, like, reusing.

Justin: Right.

Sydnee: Again, for a while, we didn't know you had to, if you were giving people immunizations or taking blood, we didn't know you had to use a new needle every time. I know that sounds odd, but it was true. We didn't necessarily always assume that you had to use a new needle for every individual.

Justin: Okay. How—how does something—this is gonna sound, like, kinda stupid. But—so this is just something that's been circulating for a while, and it's, like, spun off from other viruses? Is that right? Like some sort of, like, byproduct of other similar—

Sydnee: Hepatitis?

Justin: Yeah.

Sydnee: No, it's not necessarily that. It's that generally—like, why did we not know about it until later? Is that what you're asking me?

Justin: Hmm. I guess I'm asking—yeah. Like, where does something like this, like, get its start, I guess?

Sydnee: So—

Justin: Let me say that—a lot of contagious stuff, it seems like it's...it's a weird thing to be contagious. It seems like a weird thing to be contagious, I guess.

Sydnee: It, well—

Justin: Does that make sense?

Sydnee: If you look back through the genetic tree of viruses, we can chart exactly what point a new virus probably arose in human—in relation to human history.

Justin: Mm-hmm.

Sydnee: I don't have that answer for you for hepatitis B.

Justin: No, no, no. Obviously.

Sydnee: But it's knowable. We could google it right now and find it. Uh, but I think what you're probably pointing out more is that for a lot of human history, we couldn't see microscopic things, and then as we began to be able to see these things, the size of what we could see was larger at first, and got smaller and smaller. Viruses are as small as it gets.

Justin: I guess I think about contagion in terms of, like—more in terms of, like, RSV and stuff like that. Like, those sort of contagion, like—I think of that as more something that we spread around. We wouldn't necessarily think—like, it's very obvious when I've given you a cold.

Sydnee: Yes.

Justin: You know what I'm saying? I have this, and then you have that, and it's like, "Oh, okay." It seems like it'd be a lot harder to track down the idea that something in a liver would be contagious when we don't have the evidence that you're seeing at the same time.

Sydnee: Well, and I think what you would have to connect—one, it's why initially, like, epidemic jaundice was notable. We knew that jaundice had something to do with the liver, because bile and liver and jaundice. We connected that. And then when we saw it in clusters, we had to ask ourselves, "Okay, now why would that happen?" Because our understanding so far has been something intrinsic to your liver has gone wrong, and so you're sick.

Now, if both of us are jaundiced, okay, that does point to something contagious, so then you have to start—

Justin: [crosstalk] breakout provides, like, a data [crosstalk].

Sydnee: Mm-hmm, it's a data point. Yeah, so this is a different—this is a different jaundice. And it's an epidemic of jaundice, but we don't know

anything—you know, we knew—we...we theorized the existence of viruses long before we saw them.

Justin: Sure, yeah.

Sydnee: Because we knew there had to be something. It had to exist. We didn't know what caused epidemic jaundice until Dr. Blumberg figured this out in the early 1950s. He was actually studying initially the genetics of disease susceptibility, so he was trying to figure out, like, if you went around and tested different groups of people with different sort of inherited genetic traits, why do some people get diseases, and other people are less likely to? He was trying to figure that out. You know, are there things that make you more susceptible?

And he was going all over the world and collecting blood samples from people. This is how we know so much about, like, if you think of even normal lab ranges. We just took a bunch of blood from a bunch of different people and plotted it all out on a graph and figured things out.

So, he was going around studying different genetic differences and what diseases were prominent in those areas, and he specifically was focusing on patients with hemophilia, the thought being that people with hemophilia, as we've talked about on the show before, have to receive typically more blood transfusions in their lives than the average person without hemophilia would have to, right?

Justin: Yes.

Sydnee: Um, and so if they have been exposed to more things from blood donors, have they created more—

Justin: More opportunities to get infected.

Sydnee: Yeah. More proteins, more antibodies to different things. Like, what have they found? And as he was collecting these different blood samples, he found a specific sample that had an unusual protein in it: antigen, something that would indicate, like, disease-causing, something pathological. He found an interesting antigen. And he found a match for it in an antibody from a

patient in New York with hemophilia. So, the antigen was from someone in Australia. The antibody that connected to the antigen was from New York. It was fascinating.

Justin: That's wild.

Sydnee: I know. And he initially named it the Australia antigen. That was the original name.

Justin: It's a good name.

Sydnee: Of hepatitis B. I don't know that if you are from Australia...

Justin: Don't love it.

Sydnee: I don't know that you like that. [laughs quietly] Um, and eventually, through a series of—'cause again, we were just beginning to develop—we're into the 60s now, and we're just beginning to develop the ability to look at viruses, to see them, so to speak, and tell one from the other.

And of course once you think you have a virus, you also have to do all the stuff we've talked about before. If you want to prove this virus causes this disease, then you have to find the virus in somebody with that disease, and then take the virus out of them, and then give it to something else and see the same disease happen, right? You have to do all that stuff.

Anyway, through a series of observations and followup experimentation, he eventually figured out, this is—the Australia antigen causes a form of epidemic jaundice, hepatitis, inflammation of the liver, hepatitis B specifically. And he defined that in 1967, and went on to win a Nobel prize.

Justin: Alright, congratulations!

Sydnee: Yes, for defining hepatitis B. Now, as we move into this era—like, we're in the late 60s—we are really at a point where the magic of, you find the virus—I know that sounds so...it doesn't sound as monumental as it is. "We looked at the virus." [laughs quietly]

Justin: It sounds pretty monumental to me, a layman.

Sydnee: Well, the thing about—

Justin: They're *so* tiny, and people forget that.

Sydnee: But the thing about looking at it—I mean, it...what was so incredible at this point in history is we knew that once we saw it, and we could capture it—hold it in our hands, metaphorically—we could make a vaccine against it.

Justin: Can you imagine the first time they saw viruses and they were like, "Aww, no! They look so much weirder than we thought! Agh, god! They got, like, a diamond head, and weird little spindle legs! Agh, we hate viruses!"

Sydnee: Well, I'm certain that was the reaction. Although, I mean, I don't know.

Justin: [crosstalk] exactly like that.

Sydnee: Viruses do, like, have sort of a geometric...ness to them, right?

Justin: I would've assumed they were tiny aliens trying to kill us. And they may still be, in a sense.

Sydnee: Is that scarier, though, than if you think about a lot of bacteria, which look more organic? Which look like...

Justin: Is it scarier than tiny robot aliens?

Sydnee: Little teeny, teeny, teeny bugs.

Justin: I don't know. At least you can reason with the aliens. Give 'em a cold.

Sydnee: Well, but viruses are also neither living nor dead.

Justin: Chilling. I mean, chilling.

Sydnee: And bacteria are living.

Justin: Chilling. Yeah, chilling.

Sydnee: I don't know what's scarier.

Justin: They're both scary. I mean, it's just different contexts. I just—viruses look terrible.

Sydnee: They don't have to be scary in the age of antibiotics, in the era of sanitation, in our time of vaccination. They do not have to be scary.

Justin: In our time of vaccination is [crosstalk].

Sydnee: In our time of vaccination. As long as we make the right choices, they don't have to be scary. So, let's talk about what happened next. But first, we have to go to the billing department.

Justin: Let's go.

[ad break]

Justin: Hey, I heard there were choices being made over here. I wanna make my own choices! Why don't you give me the facts, and I'll start making choices for myself?

Sydnee: Are you gonna do your own research?

Justin: I'm gonna do my own research by listening to you, and then doing what you tell me to do.

Sydnee: [laughs quietly]

Justin: There.

Sydnee: So...I hate when people say "Do your own research."

Justin: Hm?

Sydnee: I hate when people say that. "Do your own research."

Justin: I do! I just read what people who are smarter than me say, and then I do that.

Sydnee: Yeah. Well, read the—I mean, I am all for, like, reading...the abstracts. Let's be honest, we don't have time for the whole study. [laughs quietly]

Justin: Please.

Sydnee: Read the studies that are done appropriately, and then come to your own conclusions from the studies. But you can't do your—I can't do my own research? What am I gonna do, set up a clinical trial in my basement?

Justin: I mean, I listen to Freakonomics podcast sometimes. I do my own research, you know?

Sydnee: So the first form of the hepatitis B vaccine was created soon after Dr. Blumberg found hepatitis B by himself and his colleague, Dr. Millman. And initially, our thoughts on how to make vaccines were pretty similar. We would get the virus and inactivate it, and then put the inactivated form of the virus into somebody. Because then you can't get sick, but your body—you know, you get an immune response from it.

Justin: It's a good idea.

Sydnee: Yes. The original way that we got the virus, though, was a little bit cumbersome, and difficult to sell. Do you know how we got the virus?

Justin: How?

Sydnee: We took it from people who had it. [laughs quietly]

Justin: Oh, yeah.

Sydnee: We would pull plasma. Like, take plasma from people, pull it together to get a bunch of the virus, and inactivate it, and turn that into vaccines.

Justin: Great.

Sydnee: Yeah.

Justin: Just a big—I bet Dracula would love that.

Sydnee: [laughs] So, this is—this was problematic for a few reasons. One, you have to make sure you're screening for other things. Right? Because at the time, we were looking at, like, late 70s, early 80s. We are not screening for HIV yet. We do not—we have just begun to become aware that there is something new, but we are not—it is not in the—we have not isolated it.

Justin: Right.

Sydnee: So that's one, that's a concern. And then two, there's also...well, I would say three. Two, there's an ethical concern for some individuals. If it's a human-derived product, some people will not take it.

Justin: Yeah.

Sydnee: So that's a barrier. Um, and then three, you've also got to sell that to the public. And especially as we move into the 80s, you can imagine, "We made this vaccine from taking blood from a bunch of people" would be scary to a lot of individuals.

So, it wasn't that it wasn't effective. It was an effective vaccine. And—

Justin: It's just tough to give out.

Sydnee: Yeah, it's just tough to—and they did—I will say, there is no evidence—because this was called into question later on, and I can see this little bit of misinformation floating back up in this current climate. I can see this coming back.

There was a lot of concern because of this timeline, did individuals who got those early hepatitis vaccines, was it possible that they gave people HIV inadvertently?

Justin: Oh.

Sydnee: The answer to that question is no. The treatment process to inactivate the hepatitis B virus, where they used formaldehyde, and heat, it wouldn't—it would have killed HIV as well. So even though they didn't know HIV could have been—and I don't even know if HIV was in the—like, we can't say. We don't know. But even if it was...

Justin: It would've been killed.

Sydnee: It would've been killed through the process. So it is not possible that people who received those early hepatitis B vaccines got HIV. However, that was a concern, and that is a myth that you will find. Like, "Well, you know where hepatitis—er, you know why HIV spread so rapidly? 'Cause the heb B vaccine."

That is not true. But you will hear that misinformation out there, and I can see that kind of thing cropping up again.

Justin: Oh, I mean, that would be a fun one to swat down, wouldn't it? God, you'd feel so smart if somebody tried to trot that out on you. Oh!

Sydnee: Yeah.

Justin: Oh, how satisfying.

Sydnee: But because of that, because of all these fears, and especially as we moved into the 80s, HIV was becoming known to the public. And then you also began—you began to see, like, crossover in, like, if we were looking for populations of patients who may be able to provide the hepatitis B virus, we were maybe looking at the same populations of patients who were contracting HIV. And so, this added to the public fear, and resistance to the heb B vaccine.

Justin: Well, and there's—and needles are a factor in that, right? Too, right?

Sydnee: Well, yeah. Nobody—nobody likes shots.

Justin: Yeah.

Sydnee: Yeah.

Justin: I mean, yeah.

Sydnee: But—yeah. So, as of 1990, they stopped making the vaccine that way, and they haven't since then. So you are no longer getting pulled plasma from other humans in the hepatitis—it does not contain that. They stopped.

Instead, they use genetically engineered yeast cells to produce the heb B surface antigen. So none of this comes from humans anymore.

Justin: Wild.

Sydnee: We take some of the viral DNA. We put it in a yeast cell. It produces this antigen, this antigen that cannot make you sick. It's just a piece. It cannot cause infection. It's just a little piece. And then we put it in your body. Your body produces surface antibodies against this antigen, and it protects you from getting infection. It's that simple. And there's no human stuff in it, and you can't get heb B from it. You cannot get heb B from it. You cannot get HIV from it.

Um, the current vaccine is a series of three injections. So, as we've talked about, the recommendation now is that you get the first of your three hepatitis B vaccines at the time of birth.

Justin: Okay.

Sydnee: So there's a little bit, how fast do we give it? If we know that the person giving birth has hepatitis B, we try to give the vaccine faster. We can actually prevent the baby from getting infection by vaccinating within 12

hours of birth, and we also sometimes give immunoglobulin—this is a whole other thing. But generally speaking, we like to give the first heb B vaccine within 24 hours of birth. You get your next vaccine at your one or two month followup. And then you get your third at six months.

Justin: Okay.

Sydnee: And as an adult, I'm sure they laid that out for you in your vaccine schedule, since we're catching you up. You didn't get yours as a baby.

Justin: No, no, no. I have to go back to get the second part of mine here in a bit.

Sydnee: Now, Justin. The main way that people contract—so, the primary ways that people contract hepatitis B are usually through some exchange of bodily fluids. So, through sexual contact, or predominantly blood. So, a syringe, especially people who use injection drugs. We hear a lot about that. It used to be people who got a lot of transfusions and that kind of thing, but now we screen for that. But these are the individuals that are at highest risk for hepatitis B. Which is why there's been so much question, "Well, then why do we give it to babies?"

Justin: Fair enough.

Sydnee: I mean, and that might be a question you would ask yourself. I mean, that's not unreasonable.

Justin: I think it would be fair to—well, I mean...my gut there is like, they just don't remember, so you might as well get the shots out of the way, 'cause they won't remember 'em later. But I know that that's probably not the prevailing wisdom.

Sydnee: I think—well, let me walk you through a couple things about hepatitis b—what it is, what happens in kids, and why we do this this way. And there's a broader risk-benefit conversation, here. But generally speaking—so, when you first get hepatitis B, let's say you've contracted hepatitis B, it's gonna look like most other—a lot of hepatitis viruses look the same at first, okay?

Uh, you have an incubation period that can go anywhere from two to three months. The signs and symptoms occur more often in adults than children. A lot of that initial thing. So initially, kids are—adults are more likely to get sick. With, like, um...you know, nonspecific kind of symptoms at first. Like fatigue, fever, malaise, that kind of thing. Okay?

Uh, but about half of adults when they first get their infection aren't gonna have any symptoms whatsoever. So you're gonna have no idea. This is—

Justin: They'll be—they'll continue to be asymptomatic?

Sydnee: No.

Justin: Or just at first?

Sydnee: In the beginning.

Justin: Okay.

Sydnee: Then you're gonna move on to the jaundice phase. So, uh, this is—you're gonna have some, again, fever, loss of appetite, abdominal pain. You're gonna get jaundiced. Your urine's gonna turn dark. Um, that can last anywhere from one to three weeks. You can have a lot of pain in your abdomen. You can't eat. You're really sick, okay? When you get acute hepatitis, you're gonna feel pretty sick.

Justin: Nothing cute about it.

Sydnee: No. [laughs quietly] Acute. Not cute. Now, in adults, most of these infections will resolve, and you will not go on to have chronic liver disease. Okay?

Um, most. There are individuals who, after this initial phase, continue to have liver damage ongoing, and can go on to develop cirrhosis. So, so much damage to the liver that it basically becomes scarred and cannot function.

Justin: Okay.

Sydnee: There are individuals who can go on to develop cancer of the liver as a result of hepatitis. Viral hepatitis is a very common cause of liver cancer.

Justin: Okay.

Sydnee: So there are adults who it progresses. But most adults, it does not. That being said, as many as 90% of hepatitis B infections in infants will progress to chronic infection.

Justin: Oh, so it's much worse for littles.

Sydnee: It is much worse if you get it when you're an infant. And it can be, and is often transmitted—if the person giving birth is infected with hepatitis B, it is very common that the infant will also be infected at birth.

Justin: Okay. So it makes sense. We gotta get ahead of it.

Sydnee: So, this is why, before we, um...before we begin to vaccinate—and this is from 1991. That's when we started the vaccination series at birth, okay? Before that, about 30% of those—so there's active hepatitis, and then inactive. The point is, 30% of inactive babies born to hepatitis B positive moms were positive for heb B, got heb B. 85% with the active got heb B. So that's a lot. If you had active hepatitis b...

Justin: It's very, very likely.

Sydnee: 85% of those babies are gonna be born with hepatitis B. Um, we have reduced that to around 1%.

Justin: Wow.

Sydnee: Yes. Because what we know is that a lot of those infants that are born with hepatitis B are gonna progress to cirrhosis, cancer, and possibly death. Since the vaccine was mandated in 1991, it's estimated we've prevented around 500,000 childhood heb B infections, which is about 90,000

childhood deaths that we have prevented by starting the vaccination at birth.

And the flip side of this is...okay. So, if we know that giving this vaccine at birth can prevent 90,000 childhood deaths since we started it, how many deaths are we causing with the vaccine?

Justin: None.

Sydnee: We have no evidence that we're causing any deaths with the vaccine. As I've said before, we do not see hepatitis B—you can't get it from the vaccine. Um, you can't get—a lot of the other things we have worried about with other vaccines, like Guillain-Barre syndrome, we have never seen associated with hepatitis B.

We have not seen issues related to the vaccine that we've even necessarily seen reported as rare complications of other vaccines. So it's an incredibly safe, incredibly effective vaccine that will prevent harm and death. And in terms of the risks, it's maybe an injection site reaction.

Justin: So it's not—there's no comparison.

Sydnee: There's no comparison.

Justin: I mean, between the risks of not getting it and the risks of getting it, it's like, it's not even close.

Sydnee: Well, and I think when you start to look at those odds, if you say, like—'cause at first, the number 90,000 childhood deaths prevented since we instituted mandatory vaccination in 1991. That number might not sound huge to you on the grand scale. It's 2025. That's a long time. Right? And it's just 90,000 deaths, and there's a lot of people in this country. Is that really that big a deal? Well, they're childhood deaths, so I would say one is compelling data. And beyond that, the risks of getting the vaccine...

Justin: Are nil.

Sydnee: Nil.

Justin: Right? I mean...

Sydnee: So what wouldn't you do? And the other issue is, hepatitis B, because of that whole time period where you don't necessarily know you have it, because not everybody is tested with as much frequency as they should be, there's always the chance—what they talk about now is we should do the shared decision making. Ask the person who's about to give birth, do you have hepatitis B? Would you like us to test you for it? Because if you do, you might want this vaccine for your child. Or if somebody living in your house has it.

There's so much uncertainty. There are so many people who may be positive who don't know. Or who may have just contracted it and didn't realize. Why take a chance?

Justin: Right.

Sydnee: Why take a chance with any of that? Hepatitis B is also incredibly effective at living on surfaces for long periods of time. So even if you're saying that the person giving birth doesn't have it, if someone living in the house has hepatitis B, and somehow that viral material gets on a surface in the house—and we all know that babies touch everything, and put everything in their mouths...there are...again, none of this is a stretch when we're talking about the alternative, which is a child unnecessarily suffering and dying from liver disease, or going on to develop cancer later in life that's preventable.

Hepatitis B vaccine is a cancer prevention vaccine, in that way. Just the way that the Gardasil, the HPV vaccine is a cancer prevention vaccine. That's incredible that we live in a time where we can give you a very safe and effective vaccine that prevents all kinds of harm, as well as cancer!

Justin: Sounds like a winner to me, Syd.

Sydnee: So I think when you hear a lot of the argument for why we did this, what you're gonna hear is, "Well, babies don't do drugs, and babies

don't, obviously, engage in sexual activity, so why would we need to give them this vaccine that prevents a virus that you only contract that way?"

And these are the reasons why: because you can get it from the person giving birth. You can get it from a caregiver in the house. It does live on surfaces. It is very easy to contract. It's a much easier-to-contract virus than HIV, for example. And the consequences of getting it are so devastating.

Justin: If you want to be pro-life, it seems like this is a very good time to be pro-life. 'Cause it seems like the only pro-life position is to...uh, make this a mandatory thing.

Sydnee: Yeah. I would highly recommend, if anyone—and that's the thing. We pay very close attention to this, and probably if you're listening to this show, you do too. You're the kind of individual who pays close attention to these things. But I'm sure, just like us, you have many family and friends who do not. And when you see a recommendation like this change, there are going to be people who just don't know, who are wondering, "Uh-oh. Uh-oh. What did we find out about this vaccine? They must have found out something bad, and that's why they changed things."

And that's why it's so important for us to be—not just us, but you listening—to be constantly spreading the truth, which is, no new information was found. The vaccine is just as safe and effective as it always has been.

The evidence still indicates that we should give this vaccine at birth, just like we always have. None of that has changed. All that changed are the people making the decisions are no longer motivated by evidence, by health, by safety, by preserving and prolonging the lives of American citizens.

They are no longer motivated by any of that, but only by their own personal, political, religious, ethical—I don't even know what you'd call it—agenda. Whoever's paying them, whoever's writing their checks, and whoever they're selling their books to. That's all they're motivated by now. So, please, continue to get the hepatitis B vaccine series on the schedule that's always been recommended. Tell your family and friends. And you can check any other major medical organization for that recommendation.

Every—I mean, I could name—we did it on a previous episode, and it all still stands. The American Academy of Pediatrics, the American Academy of Family Practice, the American College of Obstetrics and Gynecology, every major medical organization continues to say the same thing: The hepatitis B vaccine is safe and effective, and is absolutely essential as part of childhood vaccination, and you should get it, as previously recommended...at birth.

Justin: Thank you so much for listening to our podcast. Thanks to everybody who came out for Candlenights. If you missed it, there's great news! You can stream it with us. On December 19th at 9 PM we're gonna be live in the chat. And if you missed that, you've got until January 4th to watch it. It's kind of a video-on-demand situation. All proceeds from that go to Harmony House, which is a wonderful organization here in our area.

Sydnee: That's right. Harmony House is a day shelter here in Huntington for people experiencing homelessness where I provide medical care. We help people get housed, get clothes, get food, get a shower, get jobs, get them back on their feet. And we really need your support right now, and we appreciate everybody who came out. It meant so much to see all of you in Huntington. And then join us for the streaming video. It's gonna be wonderful.

Justin: That is gonna do it for us for this week, folks. 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]

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