

Sawbones 375: Naloxone

Published July 20, 2021

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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: Well, Syd, here we are again.

Sydnee: Uh, Justin, I'm really excited to do this week's episode.

Justin: Oh yeah?

Sydnee: Yeah! It's, uh— it was a really interesting thing for me to research and learn about, and I think it's a really important thing. It's something I'm really passionate about, and I'm really excited to share it!

Justin: You've been talking about this stuff a lot lately.

Sydnee: That's right.

Justin: So I'm interested to learn— get a little bit more insight, some more trivia that I can use to impress you with, although if you tell me on the show, I probably won't be able to do that.

Sydnee: You can impress other people. Well, other people who aren't me, 'cause I told you, and also who don't—

Justin: You will have told me the information.

Sydnee: —also who don't listen to the podcast, 'cause then they will have heard it directly from me, so...

Justin: Right.

Sydnee: ... they'll know, you know? That I told you. But there are people— there are probably some people who would listen to you, and don't listen to— anyway, I have been thinking about how it's really

interesting that I feel like— and I don't know... I imagine this is true outside of the US as well, although because in the US we have direct-to-consumer advertising of medications, maybe this is a little more common. I don't know. But I do feel like certain drugs, medications, certain prescription medications— or over-the-counter, I guess— can develop almost, like, personalities. Like, cultural connotations.

Justin: Yes.

Sydnee: Right?

Justin: Yes.

Sydnee: Um, some of 'em I have realized, as I was trying to think about different ones, uh, some of them are probably unique to those of us who are in the medical world.

Justin: 'Cause you guys interact with them a lot more.

Sydnee: And— yes. And so, like, I started thinking, like, sort of like Coumadin, or Warfarin, you may know it as, which is a blood thinner. And I al— and it's, like, the old trusty annoying standard for treating clots or clotting disorders. Um, it's been around forever. You can count on it. It works. But it's sort of like a grumpy uncle that you don't enjoy dealing with, 'cause you gotta do all these levels, and it can be really tricky, and if you eat too much spinach it messes with it. And so, like, you don't enjoy it, but you would really hate to lose it, 'cause for the longest time it was the only thing we had.

Or, like, I always think of doxycycline as the most adventurous antibiotic.

Justin: Uhh... [laughs] it's kind of a—

Sydnee: It can get you out of a lot of tight spots!

Justin: Yeah.

Sydnee: Yeah? Great.

Justin: It's adventurous?

Sydnee: You've got just, you know, regular old cellulitis, or a COPD flair, or maybe you have an exotic tick-borne infection. Doxycycline's got your back, so I always think it's very adventurous.

Or, like, chlorthalidone is HCTZ's less cool, more clumsily named, underappreciated sibling.

Justin: Uh...

Sydnee: These might just be things that are in my head.

Justin: No, but there's some, like... like, if I buy Stingers at the Flying J, people assume just 'cause I'm buying piles of trucker speed that I'm gonna need to drive all night. And, uh, get cranked on Stingers. Or, like—

Sydnee: Is it just caffeine?

Justin: I don't know exactly. You know—

Sydnee: I mean, it's gotta just be caffeine.

Justin: Can I say, like—

Sydnee: I mean, like, these days if it's over-the-counter, it must—

Justin: You want— like, you wanna do an episode on something, let's do an episode on trucker speed, 'cause I would love to know— that and Stree Overlord, I would love to— have you ever seen Stree Overlord?

Sydnee: No. I—

Justin: I pulled up a picture to show you. Stree Overlord you can find—

Sydnee: Oh my goodness. Oh my goodness.

Justin: It's two different *Street Fighter* characters having sex. It's a— it says "Exceed Viagra and Cialis." And people think just be— if I'm taking ED pills that I, you know— maybe I just wanna see what else is out th— you know what I mean?

Sydnee: Right, okay.

Justin: Push myself to the limits, you know?

Sydnee: This isn't exactly what I meant. Um, but... okay.

Justin: Maybe I just like the way trucker speed helps me parent my kids.

Sydnee: [incredulously] Is it called that? Is that the brand name?

Justin: [simultaneously] A little extra energy. What?

Sydnee: Is that the brand name of it?

Justin: Trucker Speed?

Sydnee: Yeah.

Justin: No! I think they're called Stingers.

Sydnee: Okay.

Justin: There's lots of different— what am I saying? There's lots of different names.

Sydnee: 'Cause I don't think— I'm just gonna, on behalf of you, I'm gonna apologize to our truck driving listeners who perhaps would not like it that this, uh, whatever this—

Justin: Oh, they would— if you showed—

Sydnee: —supplement is, is called Trucker Speed?

Justin: If you— I guarantee you— truckers, shout me out. If you see a bunch of Efedrin HCL tablets at the, uh...

Sydnee: They can't just sell that over the counter.

Justin: I'm telling you it's Trucker Speed! Maybe it's illegal now. But I'm telling you, Trucker Speed.

Sydnee: You can't just sell that to people. Okay. Most of these only exist in the confines of the medical world. Obviously not this— not this thing.

Justin: I'm sorry my wife's not as street as me.

Sydnee: That you're interested in.

Justin: Sorry.

Sydnee: Um, but I think that the drug I wanna talk about, the medication I wanna talk about today, Naloxone, is an exception. Because I think it has taken on a cultural connotation that is bigger than just, like, "Here's a medicine that does something in your body." Right?

Justin: Mm-hmm.

Sydnee: Um, I think it's— it is, like— it's the hero drug. Carrying Naloxone is making a statement. I mean, as a practical necessity, it is an important thing to do. It's like learning basic lifesaving, you know? It's— it's— it's an important thing to do as a member of a community.

Um, and it says something about you. You care about people. Uh, you care about people even if they're engaging in behavior that might harm them, you know? Even if they are acting in a way which puts them in danger, you care about their life despite that and will do what is necessary to help them out. That's sort of the message it sends, right? Like, um... you carry Naloxone, you save a life. That's like a rallying cry for harm reduction. It's important. It is a meaningful act. Um, and it's a medication.

And so I started thinking about, like, how did Naloxone evolve into that? Where did it come from? Who invented it? What's the story of it? Um, and how did we get to a point where, like, people wear, you know, um, hats and t-shirts and shoulder bags and, these days, masks that say "All my heroes carry Naloxone." Like, where did that come from?

So I wanted to look into that story. Um, before you tell the story of Naloxone, you kind of have to— there's a precursor drug that sets the stage for it, and this takes us all the way back to 1944. There was an article published in the journal of pharmacology and experimental therapeutics, which sounds really exciting but [laughs quietly] probably isn't.

Justin: Do you think it sounds exciting?

Sydnee: Experimental Therapeutics? Ooh.

Justin: Yeah. I mean... yeah. It does— I guess it is exciting in a sense, yeah.

Sydnee: Hart and McCawley published an article called "The pharmacology of N-allylnormorphine as compared with morphine."

And basically what they had done is taken morphine, the molecule that is morphine, they had taken one piece off of it, called an N-methyl group, and they had put on an N-allyl group. All you need to know is they started with the molecule morphine and made one little switch. Okay? That's the point.

And basically then they, you know, like, gave it to rats and stuff. [laughs quietly] And saw, like, how is this—

Justin: [crosstalk]

Sydnee: —what does this do?

Justin: What does this do?

Sydnee: There's—[laughs] there's so much of medicine—

Justin: "Hey rat, wake up! We broke this molecule and we wanna see what it does now!"

Sydnee: "Now we're gonna give it to you." Basically what they found is that if you mess around with morphine to make this compound, you got something that still helped with pain some, but less. So that seems... not as effective, right? Like, we made it le—[laughs] we made it less good for hurting.

Um, but it had the opposite effect on respiration, so as where morphine, if you take a lot of it, can slow down your respiration, your breathing, and, you know, way too much, cause respiratory depression, meaning you stop breathing, this seemed to stimulate respiration, at least temporarily. Make you breathe more, make you breathe faster.

Um, it also caused the opposite effect on the gut. So, whereas morphine and most opiates can cause constipation, this did the opposite of that. And generally, it seemed to antagonize a lot of what the morphine did. What morphine was doing, it was stopping.

Justin: Okay.

Sydnee: So it was— so they published this article and it was like, "Huh. Fascinating."

Justin: "Interesting. Good job, guys! Good science."

Sydnee: And then, like, a decade passed. [laughs]

Justin: Okay.

Sydnee: Because nobody— nobody— I mean, a lot of the time— that's what's really cool. We talk a lot about basic science on this show that doesn't necessarily, like— what are you gonna do with that information? Um, and I think that's the really interesting part about it is that by exploring these things in the world, sometimes you don't see the direct clinical application, the translation of this research.

Um, but then a decade later, you do. And that was what happened with this specific compound, which they introduced as Nalorphine, branded Nalline. Um, and though it was, at the time, this compound, which again is, like, the precursor to Naloxone, this is not Naloxone, um, it was found to have some disturbing side effects in addition to these sort of good things it could do. It also can cause some confusion, some hallucinations, some anxiety, some general feelings of, like, unhappiness and unwell.

Um, but it had found a niche. It had found a place to exist. I mean, 'cause if a drug's gonna be branded and sold, it's gotta do something that we need it to do. And this—

Justin: What does it do?

Sydnee: —this initial compound didn't, really.

Justin: Okay.

Sydnee: Well, Nalline had been worked with by some doctors in Lexington. They were working with the United States Public Health Service, um, giving it to people, giving this Nalline to people who had addiction to opioids, and they observed that it caused immediate withdrawal symptoms. Okay?

Justin: Okay.

Sydnee: So someone comes in, they're chronically using some sort of opiate, heroin or morphine or whatever, they give them this medication and it immediately puts them in withdrawal.

Justin: How on Earth would that—[laughs]

Sydnee: Well—

Justin: How on Earth would you find that out?

Sydnee: You give it to somebody.

Justin: Okay, got it.

Sydnee: I mean, that's it.

Justin: Thank you, science.

Sydnee: They... gave it to someone. [laughs]

Justin: Got it.

Sydnee: Well, based on this paper, though. 'Cause, I mean, as I said, like, it increased respiration. It reversed constipation. Like, you could see where somebody went, "Well... "

Justin: "Maybe?"

Sydnee: "Maybe it will undo the effect of the opiate."

Justin: Yeah.

Sydnee: Which it did! Um, and there was this thought. "Well, this could reverse an overdose! That's pretty cool."

Justin: Yeah.

Sydnee: But that really wasn't its primary function, because before doctors saw a widespread use for it, the police did. Specifically the police in Oakland found a great use for it. Well, "great" is debatable. *They* felt like it was a great use.

Time Magazine published an article about this in the Christmas Eve issue in 1956, and it's called "Drug Detector."

Justin: Okay.

Sydnee: The California Bureau of Narcotic Enforcement began using Nalline in what they called the Nalline test to figure out whether or not a person that they were arresting— or wanted to arrest, were holding— was addicted to opioids. It was a— it was a drug detector. We are trying to figure out if you have an addiction.

Until then, it was really hard to prove. You would ask people. They may or may not tell you. Drugs were illegal, so...

Justin: Right.

Sydnee: So what you would do is try to hold people long enough that they would—

Justin: To see if they went into...

Sydnee: To see if they would go into withdrawal, um, which is terrible. And also, I mean, if we're being honest, often they didn't have a reason to hold people. To, like, detain them for that long.

So— and what they wanted to do was try to convict them of a narcotic-related crime.

Justin: Okay.

Sydnee: So the Nalline test, which you can find a detailed description of this, um— it's— you can find it for free on the internet. Published by Dr. James Terry and Fred Braumoeller in the *California Medical Journal* in 1956.

Basically what you would do is if you had detained somebody who was suspected of using an opiate, you would do your history and physical exam. They did do informed consent. This wasn't— and now, this— that being said... [sighs] you have been arrested and you are in police custody, so I think any time you're talking about—

Justin: [crosstalk] coercion, yeah.

Sydnee: Yes, yeah. I think you have to allow for the possibility that you are going to be coerced into this, but they did in theory obtain informed consent from everyone who received this Nalline test. And before they would give you it, they would measure your pupils, see what their diameter was. Okay?

Then they would give you 3 milligrams of Nalline, wait 30 minutes, and measure your pupils again. And basically there were three possible outcomes. If your pupils got smaller, constricted, that mean you don't use chronically, because we have just given you this sort of opioid antagonist, which does bind to opioid receptors, so will constrict your pupils, but you didn't have anything else there, so it just did the thing it does: constricted your pupils.

So if you didn't use any drugs, your pupils would get smaller. If you do use drugs regularly, meaning in their mind you had addiction, then your pupils would dilate.

Justin: Okay.

Sydnee: Get bigger. And if they stayed the same, that meant that you used drugs sometimes, but not all the time, so weren't addicted, but you still may have used some opiates.

Justin: Now, didn't you say that it could have some pretty harmful side effects? Like, couldn't this be pretty messed up?

Sydnee: Mm-hmm.

Justin: Like...

Sydnee: Yes.

Justin: Hmm.

Sydnee: It could. Um, some different things that happened in some of the— 'cause you can read in the article about it, a few of the examples. They give you some case studies of people receiving the test, and you might get nausea, vomiting, anxiety, sweating, somebody passed out upon receiving it.

Um, the protocol was basically to evaluate the patient's pupils, and then once you had deemed whether or not you thought that they were addicted to opiates, you were supposed to give them an opiate to reverse the effects.

Justin: [scoffs]

Sydnee: And giving them the opiate was based on— what you gave them was based on, at that point, [sighs] asking them what they use, and how often, and how much, so that you could either give them morphine or hydromorphone, dilaudid, which is ever stronger, um, enough to try to end the withdrawal symptoms, basically. Um, and it took different doses.

And again, it's all detail. Every patient kind of got a... personal experience, [laughs quietly] so to speak.

Justin: This is horrid and I'm also shocked that it ever came up with anything that would be admissible in a court of law. It all seems so... phony.

Sydnee: The legal— the legal side of this— and that's not my area of expertise, and I really wanted to focus on the story of Naloxone, but the legal side of this I really want to dig into more, because I don't know the answer to that. How— how you could measure a pupillary response and deem addiction— I mean, especially based— I mean, like, this is it. This is the data. This is it. They were doing it, collecting the data, and also saying "Yes, you should arrest this person for a narcotic-related crime."

Justin: [laughs] Yeah, it's quite a stretch.

Sydnee: Yes. Part of the protocol was that you don't need to continue to wait to see if they, like, go into further withdrawal symptoms, which would've been really horrible. Um, in part because that's terrible, and in part because there was a belief that you could hide them. [laughs quietly]

Justin: In— hide what?

Sydnee: That you could just hide those symptoms. Patients can will them away.

Justin: Ohh, like with the lie detector.

Sydnee: Yeah.

Justin: How you can, like, fake that. You, like, fake this.

Sydnee: But the pupils you can't fake. Um, and then of course the side effects of Nalline made it somewhat, uh, less useful for much of anything else. This is the only place that it— and when I say "commonly," this was not widespread use across the United States. That's why a lot of, when you hear the accounts of it being used, are to this one specific part of California where it seemed to have taken hold. But not a lot of other places were... excited about this. [laughs quietly]

Justin: Yeah.

Sydnee: Um, probably 'cause of all the side effects, and it's really hard to— I would imagine, to— yeah, take before a judge. Um, so it wouldn't be until the 1960's that the next— the next, um, paragraph in our Naloxone story would be written, and I wanna tell you about that part, which is a happier part, I think.

Justin: Oh, good. It would almost have to be.

Sydnee: But before we do that...

Justin: Uh-huh?

Sydnee: Let's go to the billing department.

Justin: Let's go!

[ad break]

Justin: Sydnee, uh, you were just about to— things were about to pick up here. And maybe you're going to reveal to us what this drug is— is for, 'cause I'm not even sure we've talked about that yet.

Sydnee: Have I not talked about what Naloxone is for?

Justin: I don't think— I don't think you've talked about that yet.

Sydnee: Should I say that right now?

Justin: No, Syd!

Sydnee: Okay.

Justin: Now it's a twist! Now it's a Paul Harvey episode.

Sydnee: [laughs]

Justin: Now people are on the edge of their seats. "What does this stuff do?"

Sydnee: Okay. Well—

Justin: "Do I need some? Should I be taking it daily for [crosstalk]—"

Sydnee: Everyone should be carrying it.

Justin: With my multivitamin.

Sydnee: I'm gonna start— I'm gonna—

Justin: But should I be taking it every day with my multivitamin?

Sydnee: No, you shouldn't be taking it necessarily, but you should be carrying it. Uh, okay. So as we've covered, this Nalline test, this Nalline medication was being used for, I mean... I would say that the ethics of this are... well, it's unethical, is what I would say. [laughs quietly] I would— I would—

Justin: Yeah, we don't need to—

Sydnee: —I would say that this test is, um, problematic for a number of human rights reasons. Um, let alone that addiction is a medical condition and a disease and not something that should be criminalized, and all of that, which I think everyone knows how I feel about that. Um, the Nalline test was certainly not going to be very popular, and medical ethics did away with that.

Justin: Right.

Sydnee: Of course. Um, although it existed in the literature well up into the 70's.

Justin: [scoffs]

Sydnee: Um, as something that you could do. Uh, it wasn't until the 1960's, Dr. Jack Fishman would bring something better along. Dr. Fishman was a cancer—

Justin: That's a very 1970's name.

Sydnee: It is.

Justin: Dr. Jack Fishman sounds like—

Sydnee: Dr. Jack Fishman.

Justin: —like, if you just grabbed a doctor randomly in 1971 it would be like, "Oh, me? I'm Dr. Jack Fishman, obviously."

Sydnee: I believe his full name was Jacob Fishman, but he went by Jack, from all the articles I read. He was a cancer and steroid researcher who actually immigrated to the US as a child escaping the Nazis. Um, so he was researching morphine derivatives. Again, a lot of the things with morphine were, we knew this was a— and we've talked about this sort of in the history of opiates— you have these medicines that as soon as they come on the scene we realize, "Oh my gosh, we can treat pain in a way we never have been able to before," which is amazing and important.

But they have all these problems, right? Like, you can get addicted to them, you can take too much and you'll stop breathing. They do cause horrible constipation, which doesn't sound like a big deal until you've experienced really intense [crosstalk]—

Justin: Oh yeah, folks.

Sydnee: —constipation. It's a huge deal.

Justin: It's no joke.

Sydnee: So he was researching this, looking for alternatives, and he discovered a compound called Naloxone. Um, and in addition to, you know, not causing constipation, which is great, even more importantly it was excellent at reversing an overdose, without all of the symptoms that Nalline would cause. It was very excellent.

So if somebody has taken too much of an opiate medication, and it could be something you might get in a hospital, like morphine or a Percoset or a Norco— those weren't around back then, but, you know, things today. Or something like heroin.

Um, whatever it was— opium [laughs quietly]— you could, uh, administer Naloxone and it would increase the respirations, a person would start breathing again.

Justin: Okay.

Sydnee: I mean, it would save their life. So it would reverse an overdose, prevent someone from dying of it. Um, and the way this works, in case you're curious— I don't know if you are— is our body has receptors for opiates.

Justin: Right. Which are little, like, tendrils that are reaching out from your brain, and when the opioids come in, there's part of your brain that's

like, "Ooh, gimme! Gimme that. I'll take that, please, and I'll do some different things with it."

Sydnee: If you look at pictures in, like, science textbooks, I always think they sort of draw receptors like little cups.

Justin: Okay.

Sydnee: And then they have the little, like, molecules come in and they're like little balls, and they just, like—

Justin: Oh yeah, that's for me.

Sydnee: Fwoop! Fit right in the cup. [laughs quietly] So we have little cups ready to collect opioids. Um, and that's because we do have endogenous opioids, things already in our body that are like opioids that make us feel pain relief, make us happy, make us feel euphoric. Like, those are things in our body, and then we found chemicals out in the world that work on those receptors. That's how most things work.

Um, so you have those. When they're filled, when all those cups are filled up with something like morphine, some sort of opiate, or heroin or whatever, you can overdose and stop breathing. So— and these are called opioid agonists, because they— they work like those endogenous opiates. They like those receptors, they a— they bind to them.

Naloxone is an opioid antagonist. It antagonizes the opiates. Like, knocks them off their cups.

Justin: Get outta here!

Sydnee: Get off that cup! That's my cup.

Justin: This is my cup. I'll sit— I'll sit it your cup.

Sydnee: Yeah, I'm gonna get you outta there. And then that wakes you up, and you breathe.

Justin: Huh!

Sydnee: And maybe your life is saved. And that's how any antagonist, there are lots of different antagonist medications, but specifically in this case that's how an opioid antagonist would work. Go in, knock off the opiate, and keep you from, uh... you know.

Justin: Do we have anything like this for, like, alcohol or weed or other drugs?

Sydnee: We— I don't— you know, I don't know of one for marijuana, for— for cannabis, but, I mean, yes for alcohol.

Justin: I know that 'cause there— well, there was that one episode of *Get Smart* where he had that pill that absorbed all the alcohol.

Sydnee: There are also medications— well, I don't wanna get into this too much. But there are medications you can take that every time you drink alcohol you'll have a very violent reaction to it. Like, you'll get very sick, and so that's supposed to, like, discourage you from drinking alcohol. But, um— but yeah. The idea of an antagonist is well known throughout, like, pharmaceuticals.

If we have something that we need to block or stop, we create an antagonist medication, which is similar to the molecule that binds to it, but blocks it in some way, and doesn't have all of the effects of the original molecule.

Um, so Dr. Fishman invented this in the 60's. He actually didn't patent it until 1971, and there wasn't a lot of widespread use for it initially. Um, because it was prescribed and administered by healthcare professionals in healthcare settings. So really the only place this was coming into play— and it was also given intravenously, IV, initially.

Justin: Ugh, yeah.

Sydnee: So the only place you were seeing this being used was in, like, an emergency room, if someone who overdosed happened to get there in enough time.

Justin: It was, like, limited use, right? You've limited the use case for it because it's, like... you've overdosed, but also someone knows enough to get you to the hospital and get you there in time, and then...

Sydnee: And isn't afraid of prosecution for bringing you.

Justin: Right, right, right.

Sydnee: And yes, all those things. And so, you would have it in the hospital because sometimes when you're doing a surgery or procedure or just when you're trying to treat pain, you get too much pain medication. Someone has an overdose in the hospital. This happens. People have different tolerances. So you might use it in the hospital in that case.

But it really wasn't something that was, um, a tool to help stop overdose... on a large scale, because it wasn't in the right places. Um, and it also wasn't the best form. It's hard to administer an IV medication.

Justin: Right. Gotta find the vein and everything.

Sydnee: Yeah. So, um, over the years, two things would then happen to Naloxone that would transform it from something that was really just used occasionally in the hospital by a medical professional into this sort of wonder drug, as we look at it today. Um, the first thing is that it had to be— it had to be available in other forms.

Justin: Okay.

Sydnee: So it went from just intravenous to something that you could give as an intramuscular injection.

Justin: Okay.

Sydnee: Like, you would get a flu shot, a tetanus shot—

Justin: A vaccine.

Sydnee: —a vaccine. IM. A subcu injection, just under the skin. Like if you give insulin, that's the same kind of thing.

Justin: Really?

Sydnee: Mm-hmm. Uh, and finally in a nasal spray, as we'll get to. The easiest way, I would say. Squirt it up the nose.

Justin: It's the easiest way. It seems like it would be the trickiest one, 'cause don't you have to be, like, able to inhale to— like, don't you have to inhale to get—

Sydnee: Mm-mm.

Justin: No?

Sydnee: You just squirt it there.

Justin: Huh!

Sydnee: And it's absorbed inside the lining of your nose. You have a lot of vasculature. It's a lot of blood vessels in your nose, and so it easily diffuses into where it needs to go. Yeah. That's actually true for a lot of nasal sprays. There's a little— there's a little pro tip for you. You generally do not need to, like, snort when you squirt a nasal spray up your nose.

Justin: Huh! I didn't know that.

Sydnee: No. It is best to... um, aim it sort of towards the outside border, upper outer border of your nose, up against the wall, and squirt it.

Justin: Huh.

Sydnee: And if a little bit runs out, that's okay. If you just, like, sniff it, you're just gonna swallow it.

Justin: Well, look at that, Syd!

Sydnee: Yeah, so... so it's okay. We don't need the patient who is receiving the Naloxone nasally to sniff it up.

Justin: Got it.

Sydnee: Um, as it became easier to administer, the next thought that arose is, "Well, I mean... wouldn't it be better if it were... at the place where someone actually... had the overdose?"

Justin: Might overdose, yeah.

Sydnee: Yeah. I mean, why— why... we need to make it easier to access. Um, most people who experience an overdose don't do it in a hospital, you know? Um, and you don't have a lot of time when someone has overdosed to get them the Naloxone or get them to the hospital, and you can lose a lot of people in that interim.

So, um, even though, you know, we had this lifesaving medication, it was mainly confined to hospitals, even after— 1983, the World Health Organization added it to its list of essential medicines. Meaning, like, "These are medicines that everybody needs to have access to all over the world."

Naloxone has been one since the year I was born, but it took a long time to convince people that we needed to have access to it out in the community. It really started in Italy in 1991. That was the first, uh, place where they started, like, giving public access. Like, once you've received the training, you can have some Naloxone to take with you.

Um, the next places to follow suit would be the UK and Australia, and we've talked about the history of harm reduction in some of these places, um, especially in the UK, and how, like, the idea of any positive change, any step in the right direction is worthwhile, no matter how small or, you know, how far you still are from that recovery part. It's still the right thing to do.

Justin: Right.

Sydnee: Um, the US would finally start in 2001.

Justin: Phew.

Sydnee: The first state— I know. [laughs quietly] The first sta— so, the year I graduated from high school.

Justin: Yeah. Take your time, guys.

Sydnee: Um, my entire [laughs quietly] like, early education. Uh, so in New Mexico in 2001, they actually began to allow people to receive training and get a prescription to carry Naloxone, to have Naloxone out in the community.

Justin: Is there— are there other drugs like that where you get a prescription to carry? I guess EpiPens.

Sydnee: EpiPens, mm-hmm.

Justin: Okay.

Sydnee: I can't think of a lot of other...

Justin: Do you need special training for EpiPens? [crosstalk]

Sydnee: We just des— we just describe how to do it.

Justin: Yeah.

Sydnee: I mean, if you think about it, like, you don't need— I mean, if you give yourself insulin injections, or if you give somebody in your family or friends insulin inje— you know, if you're responsible for that, like, we teach you how to do it. Like, I taught many patients how to do it in the office, or I would have, like— we had a pharmacist that worked with us, and she was always happy to do it. Somebody would teach you how to do that. But you didn't need, like, any sort of class or course. You know? I mean, it's a pretty— a lot of these things are pretty easy.

Justin: They let people use those wild paddles. You know what I mean? Like, those emergency paddles?

Sydnee: That's true. [laughs]

Justin: They let people use those. Like, if you're gonna let people use those—

Sydnee: Those are widely available.

Justin: Which is wild. You just get those. Right where Cooper can get 'em. Just no problem.

Sydnee: And I'll go ahead and say this, 'cause I did wanna really make this point. Unlike, I would say, a lot of these other things we just— like insulin or an EpiPen, um, Naloxone, what is really great about it is that if you think someone has overdosed but you're wrong and you give them Naloxone, it will not harm them.

Justin: Oh, okay.

Sydnee: So it's a fairly low risk thing to attempt if someone has stopped breathing and you're trying to save their life. Um, Naloxone is a really low risk intervention in that sense, unlike giving someone insulin. You can really do a lot of harm if you don't do that appropriately, or give the right dose.

Justin: *Memento*.

Sydnee: Yes, *Meme*—[laughs] *Memento* is the medical reference text for that.

Justin: As seen in the documentary *Memento*.

Sydnee: So, uh, by 2003, San Francisco and Chicago had both— um, those both had well established harm reduction movements at this point— had started the practice of publicly accessible Nalox— trying to get Naloxone out of the hospital and into the hands of people who need it. Um, and basically all you have to do is train someone to, one, recognize an overdose, and then two, administer the Naloxone. Um, and then three, call 911.

Justin: Sure.

Sydnee: This is actually really important, um, and this is true in the state of West Virginia. I don't know if this is true nationwide, but if you receive training in Naloxone administration, you'll find this out. Here, you do have to call for an ambulance after you administer Naloxone, or you could be held liable.

Justin: Oh, weird. Okay. I guess that makes sense, actually.

Sydnee: Naloxone can save a life, but it does wear off. And for some people, once it wears off the overdose has pa— like, they are out of harm's way and they'll be okay. I have also seen other people who received the Naloxone, wake up, are breathing fine, seem okay, and then relapse about a half an hour later, or thereabouts. So it's important that

you do call medical profession— like, you call for help. Um, because otherwise you might think you've helped that person, and then you leave the scene and they relapse.

Justin: Oh, gosh. Okay.

Sydnee: Yeah. Um, so that's really important to know, and if you do receive training they would tell you that. Uh, so, you know, now it's recommended, like, you should give it to, obviously— well, anybody. Anybody should carry it. But, um, people who use drugs, or people who are prescribed chronic narcotic therapy should have Naloxone, because overdoses do happen, even if you've been taking a medication for a long time, for a variety of reasons.

Justin: Mm-hmm.

Sydnee: Um, for friends and family members of either people who, you know, are using... something like heroin, like somebody with— you know, addiction, or someone who is, again, on chronic opiates for some reason. Um, community members, a lot of local health departments will offer free training sessions. Ours does. You just sign up, you go in for free, they teach you, "Here's what an overdose looks like. Here's how you give Naloxone. Try it out."

They've got some testers, and then they give you Naloxone to take with you so that you can carry it with you.

Justin: Nice.

Sydnee: Um, and they also in a lot of these places would pass laws to stipulate that, like, you can't be prosecuted for trying to help somebody with Naloxone.

Justin: Okay.

Sydnee: You can if you don't follow through, but you can for— I mean, like, you're not— you're not gonna get in trouble because you gave somebody Naloxone.

Justin: You're saying don't chicken out halfway through.

Sydnee: [laughs]

Justin: If you start it.

Sydnee: Well, I think it's important to know that... for a lot of people in an overdose, giving them the Naloxone isn't 100% fixed, you know?

Justin: Right.

Sydnee: Um, 'cause I've seen it. I have seen people who've received Naloxone and are awake, talking to me, and then right back out.

Justin: Is the protocol just another one?

Sydnee: If you're still there in that case, yes, then we give more Naloxone. In the cases that I have managed, I have had to give more Naloxone because they've either been in the hospital or I've been monitoring them, um, awaiting EMS.

Justin: Right.

Sydnee: So, uh— but that's why you call EMS, right? Um, the, uh— the sad part of this story is that Dr. Fishman would actually lose a stepson to addiction when he overdosed on heroin in 2003. Um, his wife Joy became somewhat of an advocate for Naloxone, realizing later as she saw some of the forms that were introduced how helpful this would've been, had someone had that wherever it was that he initially overdosed. Um, and he was found outside the ER, and it was too late by then.

But, uh, in 2014, Evzio which is an auto-injector, which means it's, like— you can look up a picture of it. It's like a little, um, cube type thing that talks to you and tells you what to do.

Justin: Whoa, nice! I could use that for everything!

Sydnee: Yeah. I mean, these— it's just like the— like you said, like the paddles, like the defibrillators out in the field. It just tells you. You open it up and it says "Stick this pad here, stick this pad here. Now back away. Now push this button."

You know? It tells you all that stuff. Um, it's the same kind of thing. You open it up and it talks to you and tells you exactly where to put it and what to do with it. Um, so that's really unhelpful— er, really helpful. And then there's also the nasal spray, which is the... Narcan. Which I feel like is the most well-known. That's been around since 2015.

Justin: It's kind of become the Xerox of Naloxone.

Sydnee: It is. Narcan has become sort of synonymous for the medication— the generic name, which is Naloxone. Um, but it's because it's so easy. It's so easy to carry that nasal spray. It's the one that I choose to carry personally. Um, I'm very comfortable with its use. And they all work well.

I mean, the thing is, like, whether you're actually getting— I mean, you might actually get, like, a vial of Naloxone and a syringe. Those are out there. We have those that we hand out. Um, the auto-injector. There's, like, a nata— a nasal atomizer. I don't see those around a lot, which is slightly different than the Narcan, but same sort of idea. It's a spray. And then the actual Narcan itself. They all work.

Justin: Okay.

Sydnee: They all work. And again, if you think someone's overdosing, you're not gonna harm them by giving them Naloxone. Um, it's okay to do it again, and they teach you that in the training. Sometimes it'll require more than one dose.

Justin: Do we still have the wild side effects like the hallucinations and what-have-you?

Sydnee: Mm-mm. No. I mean, the problem with Naloxone that— I mean, the main problem is that as it will stop your overdose, but you also may experience some withdrawal symptoms at that time. Um, but like I said, it is also short-lived, in that— which is why you have to call EMS after you administer it. It's not gonna be in your system for too long, but it would save your life.

Um, so I would highly advocate, like, if you... check out in your area. I know that here in Huntington it's really easy to receive Narcan training, and be able to carry Narcan with you. Uh, the, um— our state, West Virginia, has what's called a standing order for Narcan, meaning that you don't have to have a prescription to get it. You can prescribe it to somebody to take with them, but you don't have to have a prescription. You can go to the pharmacy and ask for it.

Justin: Is it really expensive, like EpiPens?

Sydnee: Mm-mm. It's not very expensive, and you can get it for free at a lot of places. Health departments will hand it out for free. Um, the place where I volunteer, Harmony House, hands it out for free. We have a lot of community organizations that'll hand it out for free. It's— you will find it many places— if it is something that you're interested in, it is not hard to— I mean, like, I just googled out of curiosity "Narcan training near me," and there are tons of different websites that will tell you where your closest Narcan training is, where you can get Naloxone, uh, like— there's all kinds of— getnaloxonenow.org.

I mean, there's tons of different places that you can go to find out locally where you could. And it's so easy to be trained, and you might be in a situation where someone has overdosed out in your community, and they

could die, except you're there and you're holding a nasal spray, which takes no time to learn how to administer, and you could save their life.

Justin: Nice!

Sydnee: Yeah.

Justin: Okay, I'll do it. I'll get the training. [pause] Get off my back. I'll do it.

Sydnee: Do you want— I mean, I can teach you.

Justin: Oh, I don't need the training. I can just go get some. I'm just gonna get a bunch!

Sydnee: I have some. [laughs quietly]

Justin: You're really robbing me of a lot of my agency here, Syd.

Sydnee: Okay. I'm sorry. You go do it, too.

Justin: I feel like if the value of this is so important, and all your heroes have Naloxone, you would've, like, enlisted me a while ago. I feel like there is a lack of trust, and I would like to address it now. In a protracted form.

Sydnee: I guess you could— you know what, Justin? Even you. Listen— hey, listeners?

Justin: [snorts] [claps]

Sydnee: Even Justin McElroy—

Justin: The greatest compliment that could be paid to the ease of use.

Sydnee: —could learn how to use Naloxone and save a life by administering it. Even Justin could do it!

Justin: Wow. Let's wrap up, Sydnee. I feel like we've extended past the point where this is entertaining for our listeners. They— you know, they— you know how sensitive they get about their hero, their podcasting hero, Justin McElroy, being sort of torn down.

Sydnee: And I just, on a personal note, I did want to throw out there, um, our area of the country— and this is not unique to just us, I know there are other areas who have had similar issues, but the, um— addiction is a big problem here in West Virginia. And, uh, locally, our harm reduction programs are constantly being threatened by, um...

Justin: Real scumbags.

Sydnee: [laughs quietly] Politicians who refuse to understand the science, who refuse to understand that we're trying to help people stay healthier and stay alive and work their way towards recovery on their own terms in their own time. Um, so that it's something that is long lasting. Uh, and that, you know, Naloxone is a huge part of that, because it's lifesaving. Again, it's lifesaving.

Justin: We had a— we had a front page story— we had a front page of the newspaper this week, folks—

Sydnee: [tiredly] Oh my gosh.

Justin: —where the top story was— okay. The story below the fold was that our stupid morally bankrupt AG, Patrick Morissey, is suing the Biden administration because there's no border wall to keep opioids out of West Virginia, [sarcastically] because that's how it happened.

Sydnee: Mm-hmm.

Justin: That's why we have a crisis here. That's how it happened is it coming up from Mexico.

Sydnee: Not— not— not the pill mills, and the pharmaceutical manufacturers, and the—

Justin: No, no, no, no, no. It's coming up from Mexico.

Sydnee: —no.

Justin: You dunce. You absolute dunce. And then above the fold— [stammering]— above the fold, same day, shutting down the harm reduction programs had taken effect. Like...

Sydnee: Yeah.

Justin: Basically. I mean—

Sydnee: We had a temporary stay. The ACLU fought heroically to stop the— the bill from going into effect, but the judge ended the stay.

Justin: So yeah, we—[stammering]— we're saying we need all the help we can get.

Sydnee: Our harm reduction program is still alive. I don't know if you're a local listener, but the rumor went out that ours was closing. It's not

closing. We are doing everything we can to keep it alive. But, um, if getting Naloxone to people who need it is something that you care about, and you have a couple bucks, Cabell County, the Cabell— the county we live in, is participating in, um, Free Naloxone Day on September 1st. Um, it's our Save a Life Day we're calling it.

And there's a fundraiser to help us— basically the vast— you can see the breakdown, it's on the site. But the vast majority of the money we're raising is to just buy Narcan. Just to buy as much Naloxone as we can to hand out for free to people in the community, and help, you know, educate people, to destigmatize addiction and, um, encourage people that this— this is a problem. And I think that the story about Dr. Fishman and the unfortunate story about his stepson just underlines that anyone can have addiction.

It is not a comment on your class, your intelligence, your morality. It has nothing to do with that. It is a medical condition, and it has been experienced by people of all race, religion, creed, and social strata. And I know that if you're from this area, you've been personally affected by it, I'm sure, in some way. I know I have. Family and friends and community members, and this is a— this is a thing you can do.

So I would encourage you to, um... go get trained in Naloxone. Carry Naloxone. You could save a life.

Justin: You talked about the fundraiser, but you didn't say that people could give money to it.

Sydnee: We have a GoFundMe.

Justin: Right. If you head to bit.ly/sawbonesnaloxone... just wanted to make it easy to remember.

Sydnee: Thank you.

Justin: It's not our fundraiser, but *Sawbones*—

Sydnee: Not, it is not— it is not something— it is not my organization. It's not personal. It is an organization that I work with to help get Narcan out to the community.

Justin: *Sawbonesnaloxone*, N-A-L-O-X-O-N-E. Thank you so much for listening to the podcast. We hope you've enjoyed yourself. We hope that you're having a fun—[laughs quietly] hope that you're having a fun summer! I don't know why I said that. It's, like, the weirdest thing. It's like I'm signing your yearbook as your listening. Um—

Sydnee: I know. We just did a podcast about Narcan.

Justin: Yeah, I know. I'm just trying to bring up the energy a little bit. Uh, go help if you can, by the way. Uh, thank you so much for listening. Thanks to The Taxpayers—

Sydnee: Be a hero!

Justin: Be a hero! Carry—

Sydnee: Carry Nar— carry Narcan.

Justin: Carry Narcan. Uh, well, next time we do a live show we'll just have everybody in the crowd— we'll shout it out. Like, "Have you got your Narcan with you tonight? Get it up in the air!" It'll be like the new lighters.

Sydnee: You— well, I mean, you joke, but, like, for real.

Justin: I didn't joke.

Sydnee: No, it's true!

Justin: I know! It's a good idea.

Sydnee: Destigmatize it.

Justin: What— you know what we need?

Sydnee: You can be a hero. You can be a superhero.

Justin: You wanna hear a good idea I just had? People need, like, cool... Naloxone, like, personalized, like, carriers. You know what I mean?

Sydnee: Mm!

Justin: Like, cute... cute carr—

Sydnee: Like a little holster?

Justin: Like a little— no, that's kind of like— that gets into, like, keys on the lanyard territory. [laughs] Or maybe a holster, I guess. But, like, something where it's, like—

Sydnee: A carabiner! You need a carabiner—

Justin: A carabiner.

Sydnee: —with your Naloxone on it.

Justin: Okay. Well, we'll—

Sydnee: [laughs quietly]

Justin: —we'll workshop it. Um...

Sydnee: We can come up with that.

Justin: Yeah. Thanks to The Taxpayers for the use of their song, "Medicines," as the intro and outro of our program, and thanks to you for listening. We appreciate it. That's gonna do it for us for this week. 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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