Sawbones 509: Fentanyl and the ONEbox

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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 try not 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 cohost, Justin McElroy.

Sydnee: And I'm Sydnee McElroy.

Justin: Oh, man. Syd, this is an unconventional episode, but I'm excited about it.

Sydnee: You know, it is and it isn't. I mean, I feel like we're gonna do our usual thing, talk about medical history. We're gonna share the past and bring it into the present. We just—we have a very personal connection to some of this episode.

Justin: Yeah. Syd has been working with this group in West Virginia for a long time.

Sydnee: Called the West Virginia Drug Intervention Institute.

Justin: Right.

Sydnee: So I became familiar with the West Virginia Drug Intervention Institute... oh, it's been several years ago, through my work at Harmony House, because I take care of a lot of patients who have substance use disorder. And as a result, I also help to manage and instruct others on how to manage overdose situations. And that means I need a lot of overdose reversal medication, especially naloxone, or you may have heard of Narcan.

We've done a whole episode about it, so you probably know what I'm talking about.

And I've had a wonderful relationship with the institute where they will send us free naloxone preparations whenever they have some to give out. And so it's been great to rely on them as a source of naloxone for my patients, for us to hand out to our community, as well as fentanyl test strips, which I'm gonna talk about more in this episode. But little testing strips where you can check to see if there is a substance called fentanyl, which is a very potent opioid. And you need to know if it's in a substance that you're about to take, because it can be fatal in large amounts, or small amounts. But we'll get into that.

So we've had a great relationship with the institute for some time, with them supporting the work we do. Not just at Harmony House. I should say, the West Virginia Drug Intervention Institute makes these things available for the whole state. Information and awareness campaigns, and then of course these very practical—they will ship fentanyl test strips to you, no questions asked. You just put in the amount you need—

Justin: They should ask the address.

Sydnee: Well, yeah. They—well, they—okay.

Justin: [snorts]

Sydnee: The address. But you know what I mean. So this is good for people like myself—

Justin: Hey, you pick up the phone. You say, "I need fentanyl test strips." They say, "No problem!" And then you hang up. [wheezes]

Sydnee: It's like when people make a date in a movie. [laughs quietly]

Justin: Right, exactly!

Sydnee: "You wanna have dinner sometime?"
"Sure."

"Bye."

Justin: "Sure, see you there."

Sydnee: Uh, no. But they will ship 'em all over the state. So you can just fill out the little form online to get them shipped to you, and they arrive for free, which is a wonderful service for people like myself who work in, you know, an area like Harmony House where I'm taking care of people with substance use disorder.

But also, if you or someone you know uses substances, it's nice to know that you have access to these. And kind of that, like, really easy, direct to you, non-judgmental—that's a really low barrier way to do it, right? Which can be hard when it comes to talking about harm reduction, and how do we access things to keep people safe while they're still using substances?

And we also want to talk about a product that has been developed through the West Virginia Drug Intervention Institute by Dr. Susan and Joe Murphy called the ONEbox, which makes it a little easier to use naloxone. But we're gonna talk about that later.

Justin: Yes. First...

Sydnee: First...

Justin: Fentanyl.

Sydnee: Fentanyl.

Justin: But first, fentanyl.

Sydnee: I can't believe we haven't already done an episode about fentanyl. I actually thought we had, and I had to search back.

Justin: I think it was because we listened to that two part fentanyl episode on Search Engine, which is excellent. If you wanna know, like, a deeper dive behind, like, the supply questions and, like, the—it's really fascinating. But I

do think [through laughter] that is why we thought we did it, 'cause we listened to that!

Sydnee: I did. And we have talked around fentanyl, and certainly fentanyl is present in a lot of my daily conversations, and you've probably heard a lot about it on the news. So, what is fentanyl?

It is—so, I think this is interesting. Have you heard opiate versus—

Justin: [simultaneously] It's a good reason to put it in a podcast.

Sydnee: —opioid? Do you know opiate versus opioid?

Justin: Opiate versus opioid. Uh... uh... uh... opi...

Sydnee: We use 'em interchangeably a lot.

Justin: Oh...

Sydnee: Which is probably fine, but—

Justin: I used to know this.

Sydnee: Technically, an opiate is an opiate medication, some sort of substance that was derived from a naturally occurring—like a poppy, right? So we think about, like, opium, and heroin, and morphine. Things that were derived from—

Justin: And opioid is synthetic?

Sydnee: Yes.

Justin: Okay.

Sydnee: Now, I mean, it's kind of silly. 'Cause nowadays pretty much anything you're getting that is a prescription medication has been made in a lab somewhere, right? But still. That is the distinction. A lot—there was a lot of interest after—we've known about opium and morphine for a very long

time, and we've talked about the history of, you know, substance use disorder and those sorts of substances in, you know, humanity on the show before.

But back in the ‘‘50s, the 1950s, there was a big interest in—okay, we have morphine. We know how it works for pain control. Right? We kind of understand it. We know that it has some addictive properties. We know that it takes a while. Sometimes it's not particularly fast acting, depending on how you use it. It has some limitations. Not everybody can take it.

We need other pain medications. We'd like something that is stronger. We would like something that works faster. We would like something that doesn't last as long.

So this was a big area of research focus in the 1950s for a lot of different pharmaceutical companies.

Justin: Making it a little bit more, uh, functional.

Sydnee: Yes.

Justin: In our, like, day to day, in the system. Making it just easier to utilize overall.

Sydnee: Easier to utilize, and—

Justin: More dependable, more consistent.

Sydnee: And again, this is—I am talking about pharmaceutical companies who were trying to make pain medications to prescribe and administer in medical settings. But they are dealing with molecules—and I am not a chemist, but they are dealing with molecules that are relatively easy to synthesize and manipulate.

Justin: [snorts] Okay. Gotcha. The idea of any part of this being easy is—[laughs] is hysterical to me. But I understand, contextually, they're easy to manipulate.

Sydnee: Yes. They are easier to manipulate. So they could take—

Justin: I'm, like, furrowing my entire brow right now. My—the two have met in the center with how much focus I'm applying.

Sydnee: Well, and I am not gonna get into—like, I could sit here and tell you where all the different—like, this ring, and then you replace this with a methyl or an ethyl group, and all this stuff. I—

Justin: [simultaneously] Listen, if I—

Sydnee: I'm bored at myself as I say it. [laughs]

Justin: Here's the thing for me, man. If I see rings with the dotted lines, or I see, you know, the one square root symbol thing? If I see either one of those it's like, "Sorry."

Sydnee: You run?

Justin: I'm out. This is—this has gone beyond me at this point. I'm sorry.

Sydnee: The only thing that's important to know is they took the base structure of morphine, which if you want to look up pictures of the chemical rings you certainly can, if you're interested in that. And they were also manipulating something called meperadine, which you may have heard of as Demerol, was a pain medication. It's kind of fallen out of favor now, but used to be used.

Those are some of the earliest things we were using, morphine and meperadine. And they took those base rings and started, like, pulling out the pieces that they thought were the most active, specifically this piperidine ring in it.

And how can we manipulate that to make it work faster, have a stronger affinity—at that point we didn't know what the receptor was called. Eventually we would—well, we would name it. [laughs quietly] Eventually we would isolate the receptor in our brains that makes us respond to these

medications called the mu receptor. But at the time we just called it the pain receptor.

We knew there was a pain receptor. We knew that—or we thought that this was the piece of the molecule that interacted most strongly. How can we make it, like, really latch on to that receptor and stay there? And then also, how do we make it go away when we're done needing this medication?

And so there was a lot of research being done by a lot of different drug companies to try to do just that. And again, because it was a relatively easy—and none of this is easy. But if you know how, this was a relatively easy molecule to manipulate. They were coming up with a lot of different substances at that time.

Janssen and Janssen is the company—or Johnson and Johnson, or Johnson and Janssen and Johnson and... I don't know. Whatever country you're in you can say whatever you want.

Was working specifically on something called phenylpiperadine, which would be the precursor. This is the fentanyl before fentanyl. And the idea is we are making something that will work a lot faster, go away a lot faster—so this is great for if you're thinking of, like, a hospital setting. Someone is in intense pain from a broken bone or they're gonna have surgery, which is—which would cause intense pain for a very short period of time.

So we need to immediately address that pain. But we also don't want it to last very long 'cause we're trying to fix something. So you got a broken bone. It needs to be set. Let's give you something right away. Oh, pain's gone. I can set the fracture, get you in a cast, and then it's out of your system. Because we don't need you to be asleep for the next eight hours. We just need to address this quickly.

So this was kind of what they were going for. Um, and that was why in 1960 they finally arrived at fentanyl. So that's how old fentanyl is. I feel like there's this perception—

Justin: [simultaneously] Feels new, yeah.

Sydnee: —that it's a new thing. But it really isn't. Um, and when they made fentanyl initially it was just supposed to be used intravenously, meaning you have an IV in a hospital and we're going to inject this pain medication into your IV and we're going to use it in these very controlled specific settings. From the beginning, we knew it was really strong. We knew that the potential for overdose with something like fentanyl is going to be higher than with morphine or with a lot of the other medications you may be familiar with that came out over time. Oxycodone, and hydrocodone, and all these other medicines.

We knew the potential was higher because it's so strong, and because the affinity for those receptors is so strong. We also knew about the potential for abuse, but that's true for all of these medicines, so fentanyl really wasn't—it wasn't thought to be special in that regard.

But what they saw, you know, from a medical standpoint, from a pain management standpoint, is this works so fast that if we can do it in an IV and use it for anesthesia in the hospital—which it became very popular. The whole idea of how to put people to sleep and do surgeries and things in the hospital really transformed with fentanyl. It became part of combinations of medications that quickly replaced, like, nitrous oxide. Knocking people out with gas. This is—we replace very quickly with these sorts of medications.

So it was really revolutionary in a hospital to have fentanyl. It had a good place. I will say, it's really interesting. If you look at sort of the history of the development of fentanyl, it stops with fentanyl, because fentanyl is good enough. There are molecules that were synthesized after fentanyl that are just plays on fentanyl, other types of fentanyl, that are actually a little safer and better. But they're not the ones that are in the medications we use in hospitals, 'cause this was good enough.

It's important to know that when we're talking about the history of drug development, it's a profit driven system. So that doesn't necessarily mean the best drug rises to the top.

Justin: Yeah. This is Cinnamon Toast Crunch and CinnaGraham Toast Crunch.

Sydnee: [laughs quietly]

Justin: So Cinnamon Toast Crunch rules, and everybody loves it. Agreed. We all look and say, "This is an excellent cereal." And we're right.

And then CinnaGraham Toast Crunch is released and it's very similar, but it has graham pieces, thus making it... superior. It's a better cereal to eat. The flavor is better. It's better to eat. And we all look around and we're like, "We're still gonna buy Cinnamon Toast Crunch, right?" They didn't stop making Cinnamon Toast Crunch, because it was just that good.

[pause]

Sydnee: I didn't know any of this.

Justin: I'm just saying—

Sydnee: But it makes perfect sense, yes.

Justin: Metaphorically—

Sydnee: There you go.

Justin: —it's Cinnamon Toast Crunch and CinnaGraham Toast Crunch.

Sydnee: Fentanyl is Cinnamon Toast Crunch.

Justin: Wow, you—wow. That has a positive connotation that I don't love.

Sydnee: I know. This is rough.

Justin: Yeah.

Sydnee: This is rough.

Justin: Yeah.

Sydnee: Yeah.

Justin: But in the metaphor it made sense.

Sydnee: Uh, so because fentanyl was so useful in this way, they started making—there are lots of different ways to deliver fentanyl. So the IV stuff came first. And I will say, it was kind of—in the US it took a little bit longer for the FDA to approve it and allow it to be used. Other countries throughout Europe were very quickly adopting fentanyl.

We actually initially—our FDA here said it had to be mixed with another surgical medication called droperidol that was used for, like, nausea related to anesthesia and all that stuff. And it had to be mixed in, like, a 50 to one – 50 of the droperidol, one of the fentanyl – vial. And that's the only way it would be sold initially.

Justin: Why?

Sydnee: To limit the amount of fentanyl that you could ever get at a time.

Justin: Ohh. 'Cause it would be like, if you—

Sydnee: 'Cause it was so strong.

Justin: If you had more, it would, like—you would get real sick on the other stuff? Is that the idea?

Sydnee: Mm-hmm, yes. And, like, exa—well, yes. Exactly. So you couldn't administer more than a certain amount because it was already in with something else. It limited the amount of fentanyl you could give a patient.

'Cause they were very afraid of overdose and abuse, which was a fair concern.

Justin: Was the other medicine doing anything?

Sydnee: Yeah. No, it was working to, but you're right. You could overdose them on the droperidol if you tried to give them a ton of fentanyl, because they're mixed together.

Justin: [simultaneously] Right, I got it now. I understand.

Sydnee: You can't separate them out.

Justin: Right.

Sydnee: Eventually that changed and you were able to get fentanyl. And, like, the amounts of fentanyl—you know, initially they were like, no more than 50 micrograms, which doesn't sound like a lot, but fentanyl's very potent. It doesn't take a lot.

But then over time we've—I mean, we do drips and things. So, like, the amount—they tried at first to really limit the amount of fentanyl.

Justin: Cinnamon Toast Crunch in the past couple of years has just now started selling shakers full of the cinnamon dust that they put on the Cinnamon Toast Crunch.

Sydnee: So it's the same idea.

Justin: Again.

Sydnee: It's the same idea.

Justin: Same idea.

Sydnee: So, as fentanyl became more popular, and then of course was legal in the US and could be prescribed on its own—and initially again we are just talking about IV stuff in a hospital, so you wouldn't prescribe it for a patient to take outpatient.

They—so, this is an interesting fact about drug development. It is cheaper to take a generic molecule—like, fentanyl was patented at first. It had a brand name and all that stuff. But eventually it went off patent. It's been around since 1960. Which means other companies can make it, 'cause it's generic now. So you can synthesize your own fentanyl molecule, which as we've said, isn't particularly hard.

What is cheaper is to come up with a new drug delivery system. It's cheaper to take a known molecule and package it differently than it is to make a whole new molecule.

Justin: That makes sense.

Sydnee: So smaller companies started coming up with different ways to give people fentanyl. So you've got fentanyl IV. Well, how else can we ingest fentanyl? Orally it didn't work very well, like a tablet. It just—you lose a lot of it as you break it down. A lot of is gone before it can do anything, right?

So what they started coming up with is, well, what if you could absorb it, like, through your oral mucosa the way that you would—think of, like, a nicotine lozenge.

Justin: Yeah.

Sydnee: Same idea. You'd just stick it in your mouth and suck on it, and absorb the fentanyl that way. That actually works in 10 to 15 minutes. That's pretty quick.

There were powders that they compressed until little tablets that you kind of, like, stick between your gum and your lip, like snuff.

Justin: Yeah.

Sydnee: There were, um, other tablets that they—like, all stuff that you would absorb. There was a nasal spray. And I would say—and even a mouth spray. The one that was most popular—well, two. There were two that were most popular I remember back in the hospital.

I feel like when I started practicing, fentanyl was everywhere in the hospital all of a sudden. And it's weird, because the fentanyl patch, or Duragesic patch when it was first introduced, was extremely popular. And it came out in 1990, so it was not new when I was practicing medicine. But it felt like fentanyl patches were everywhere. And that was just—you know, you stick it on your skin. You absorb it slowly through the skin. It takes longer. It takes

10, 14 hours to get to, like, a steady state concentration. So if somebody is in acute pain and you put a fentanyl patch on 'em, they're still in pain for another, like, 14 hours.

But then it's going to start working, and it last for, like, two or three days.

Justin: Okay.

Sydnee: So for people with chronic pain, for patients who are undergoing, like, cancer treatment and that kind of thing, this was a good thing. And there were also fentanyl lollipops. Do you remember? Everybody talked about fentanyl lollipops.

Justin: I almost said—when you were talking about delivery mechanisms, I almost said that as a joke, so I'm glad I held back.

Sydnee: No, there were fentanyl lollipops. And this was... I'm showing Justin a picture. The first fentanyl lollipop, the one on the left there, looks like a lollipop. It's red.

Justin: It's red. It looks—it's got the stick. I mean, it looks like a lollipop, yeah.

Sydnee: And that's because it was introduced for kids. Kids in the hospital for need surgery or something. I mean, it makes total sense. Like, this is not—it feels nefarious because of what we know about fentanyl now, but it's not.

Justin: That's the oral—it's a lollipop so that they can use the oral mucosa, right?

Sydnee: You're sucking on it.

Justin: 'Cause you're not eating it. You're— [crosstalk]

Sydnee: You're sucking on it, yeah. Um, the other one that they made that looks less like a lollipop that just has, like, a little white swab on the end, you would just sort of rub inside your mouth.

And what they found is that—and this has been noted before in, like, pain management literature. If you give the patient a little bit of control over their own pain management, "Here this is, put a little bit in your mouth. See how you feel. If you need a little more."

You actually can sometimes achieve better pain management. In controlled settings, when used appropriately.

Justin: I would ask to not do that. I would say, "I'm not a good judge of this. I would prefer that you tell me if I'm being a baby or not." 'Cause I don't want it—I don't wanna use so much where they're like, "Whoa. This guy really is being a big wimp about this. [wheezes] We really—Call his wife. This guy's a real dork!" [laughs quietly] I want them to just do it. I don't wanna know how much I had.

Sydnee: I... there is—but there is—there has been literature to suggest that you use just the right amount. Whereas we tend to just give you—which we do! I'm not gonna—we do math, but then for adults a lot of times we kind of give you standardized dosing.

Justin: It's interesting as somebody who's just recently—like, uh, how much of it seems like more conscious than you would hear about. You know what I mean? Like, twilight sort of stuff seems to be more—and they're just, like, back. It's weird. Like, um, where Charlie had some tooth extractions recently. To see how quickly that goes and happens and then comes out of it, it's like, it's wild.

Sydnee: Well, and we—it's hard because again, fentanyl had—has an important place, still, in medicine. It's just a product of the fact that even as all these new forms were being introduced, fentanyl still is a fairly simple molecule to mess around with, to synthesize, and then to make different spins on, basically. To just change a teeny part of it.

Justin: Tweak it.

Sydnee: And it still works, or it may work even better, or whatever. And you can make those in a lot of labs all over the world. And so almost as soon

as they introduced fentanyl they had some fentanyl overdoses. Which, again, is just—it's part of—it's a very potent opioid.

And what began to happen as fentanyl become more, you know, more widespread in its use, is people who sell... illicit drugs—so people who were making or selling, distributing opium and heroin, began to realize that it is way cheaper to synthesize fentanyl, and then all of the derivatives of fentanyl, in labs, and then put that in with whatever substances you're selling, than it is to grow poppies.

I mean, this is just—it's all very—it's just capitalism, right? It's market pressures. It is cheaper to put fentanyl in whatever.

Fentanyl of course is addictive. Opioids are addictive. And so if you use fentanyl, knowing or unknowing, long enough, your body will begin to become dependent on and crave fentanyl.

And even if you didn't know fentanyl was in there, you may begin to crave a certain supplier's substance, because... it's the good—it's the stuff that does it. It makes you feel not sick.

Uh, and so that's kind of been, like, the story of where did fentanyl come from. It has this very legitimate medical use, but then because it was cheap and easy to make, it began to replace all of the other drugs that people were already using.

Um, and I want to talk about what that looks like today, debunk some of the myths surrounding fentanyl. But before we do that, we've gotta go to the billing department.

Justin: Alright, let's go!

[theme music plays]

[ad break]

Justin: Alright, Syd.

Sydnee: So, as I said, fentanyl has begun to be included in a lot of different drug preparations, and when I say fentanyl, there is fentanyl, the kind that we use in the hospitals. There's also all of those slight tweaks and different kinds of fentanyl. And then along with that, you've probably heard of carfentanil, which was synthesized around the same time as fentanyl and was mainly used in veterinary medicine because it's so strong. It's an elephant tranquilizer. That's the thing.

Justin: Okay. See... I just figured Cars 4 was gonna go in a real different direction. That's what I assumed. And I misjudged what you were saying, and I'm sorry, and I know that fent—cars don't need fentanyl, because they're just metal parts and they can be repaired, and they're honestly pretty happy most of the time as long as they're allowed to... race, and, you know, live their, uh, car lives.

Sydnee: [laughs quietly] This is an elephant tranquilizer.

Justin: [clicks tongue] Not car fentanyl.

Sydnee: No. Uh, and I will say that a lot of what you've heard about fentanyl in terms of how dangerous it is to be around it or to have it near you is not true.

Justin: Hmm. Yeah, there was a spate of things—I feel like a couple years ago it was big where, like, first responders at a scene were—there was a lot of discussion about were people exposed to fentanyl, or were there fentanyl, you know, on premises and what sort of precautions do you need.

Sydnee: The reason I wanted to tell you about the fentanyl patch and how long it takes to get into your bloodstream is because it outlines the fact that while you can make a preparation of fentanyl that is absorbed through your skin—and by the way, it is specifically designed—any sort of patch like that, like a nicotine patch, that's a design to deliver it through the skin.

If you hold a cigarette long enough, do you absorb nicotine from it?

Justin: No.

Sydnee: Right. If you hold a piece of nicotine gum? No. Same idea. The idea that we can absorb fentanyl by touching it is not true. There's no—

Justin: It's not the preparation. It's not—right.

Sydnee: There's no science behind that. And certainly not—even if it is the preparation that you can absorb through your skin, you can't absorb it fast enough to overdose on it immediately. So, I mean...

Justin: Just... wash your hands.

Sydnee: Right. And in most cases, first responders are hopefully wearing gloves. But yeah, wash your hands.

Justin: Yeah, okay. It's—okay, Syd, yeah. Yeah, yeah. Okay, yeah!

Sydnee: [simultaneously] The cases—but these cases—

Justin: That figures, I know they usually wear gloves. Okay. [muffled laughter]

Sydnee: These cases where someone touches a mysterious powder, which is usually what the story is. "I touched a pow—" or, like, there's the one. "They gave me a dollar bill and then I felt funny." Have you heard that? "I got change at a convenience store and then I felt funny after I touched it."

That's not something that fentanyl can do. Those are myths. That's not—and they've never proven—any of those cases that you've ever read about in the news, they never proved that that's what happened.

There were some where they found that the person who experienced the overdose also had substance use disorder, and that that was—that they didn't want to share that, of course, because there's so much stigma and shame still associated with these things. In other cases, it's more of a panic response because of all this fear surrounding fentanyl. But that is not how you absorb fentanyl. You're not gonna get fentanyl that way.

You will not be harmed by helping someone who is experiencing an overdose by the fentanyl itself. So, that's another—there are people who are afraid to administer naloxone, or do CPR, or if you're someone who's trained in rescue breathing do rescue breathing on someone who perhaps has overdosed on fentanyl, because what if it hurts me too? There's no evidence of—I don't know how that would happen, so that's not—that is not something to be afraid of. So please do not let that fear limit you from helping somebody in need.

Um, so I think it's really important to understand that those are not true. There is a lot of fear around what could be laced with fentanyl. So, there are some things we know about fentanyl is getting into certain drug supplies. We know that a lot of what is sold as heroin is fentanyl or partially fentanyl. We know that. We know that fentanyl has been found in methamphetamines as well. Uh, we do know that there are pressed pills, meaning pills that look like a pill you get prescribed that would come in a prescription pill bottle, that is actually made of fentanyl. We know that those exist.

Justin: Would people know what to do with the—like, would they just hold them in their mouths, or...

Sydnee: Well, you would take it thinking you're taking a Xanax. But it's fentanyl.

Justin: Oh, okay. Which would still have an effect, I guess.

Sydnee: It would still have an effect, yes.

Justin: Just not the most potent. Gotcha.

Sydnee: Mm-hmm. It's not the most potent way to get fentanyl. But, I mean, you can—yes. You can get it that way. It's just it's not the most potent. It's why we don't use it that way medically. But, um—so there are pills. Specifically the most common are oxycodone tablets, Xanax tablets, and then the other thing is cocaine. Cocaine and fentanyl—fentanyl is often being—not often. But it is happening that fentanyl is put in cocaine.

So these are the substances that are most frequently found laced with fentanyl, and people are unaware. So if you hear about someone overdosing at, like, on a college campus or at a party or at a festival, where they took something that they thought was one thing and it turned out to have fentanyl in it, it was probably one of these things. I mean, that—not limited to but probably one of these.

You can look up, by the way, there are pictures of these things. The FDA puts out alerts. The NIH puts out a lot of information. Obviously—the DEA puts out a lot of information. Obviously the government is very interested in...

Justin: [snorts]

Sydnee: [laughs quietly] ... finding who's making these illegal pills and letting you know what they look like. So you can look up pictures of them. Um, generally speaking, don't take pills that aren't prescribed to you is the best way to do that. But that's also silly advice, and works about as well as "Just say no."

So, in light of that, there are fentanyl test strips that I alluded to. These are easy to find and use. Um, hopefully you have something like the West Virginia Drug Intervention Institute in your area, or a health department, or a local harm reduction program. You can buy them online, certainly. They sell them on Amazon.

Justin: Yeah. [crosstalk]

Sydnee: They're a little pricey. Uh, but they're really easy to use. I mean, well, they're pricey for an individual to have to buy a lot of. I guess if you just need a couple it's not—I'm always thinking in large scale. [laughs]

Justin: [laughs]

Sydnee: 'Cause I'm buying them for the clinic, not just for myself. But, uh, you can—basically you just need a teeny, teeny little amount of whatever the substance is. You put it in a teaspoon of water so you can, like, crush the pill or whatever, take a little chip off of it, crush it up, put that in the water, dip

the strip in it. And then if it reads out two lines, it's negative, and one line, it's positive. I know that's weird, but that's the way it works.

So you can check and see if fentanyl is in the thing that you are considering taking, which is a good idea. It's a good harm reduction tool, and they're widely available. And like I said, they're pretty easy to use.

Um, the other thing that is important to do is know what naloxone is, where to get it, and how to use it, and that's where the ONEbox comes into play.

Justin: Right.

Sydnee: So the ONEbox is—it looks like a little—it looks like a first aid kit, basically. It's a small box that you would hang on the wall, anywhere where you might need naloxone, which is basically anywhere.

So it's great for, you know, dormitories, like college dormitories, for libraries, for convenience stores, for any sort of, like, gathering space like a convention center or sporting field. You know, anywhere where people may gather, anywhere where—

Justin: Old West opium dens.

Sydnee: That too, sure. [laughs quietly] Um, apartment complexes, convenience stores, everywhere. Like, this is a great thing. Anywhere where you would think a first aid kit or maybe an AED would be hanging on a wall, you should have a ONEbox hanging next to it.

And it does a couple things. One, I think putting them up on the wall prominently says "This is an important, lifesaving thing that we should all know how to do."

Because substance use disorder can affect literally anyone. It does not know class, or gender, or race, or socioeconomic background, or educational status, or where you're from.

Anybody can develop substance use disorder, and anybody can overdose. So knowing how to save someone's life with a ONEbox is just as important as knowing how to, you know, stop bleeding or use an AED, right?

The next thing that's great about the ONEbox, not only does it prominently display the need for this, when you open it up it's got inside naloxone, which if you already know how to use it, that's great. You can grab the naloxone and use it. It's got a pair of gloves. It's got a little breathing mask.

But what it also has is a video screen. [laughs quietly] There are two settings on the ONEbox. There's the emergency setting and there's the training setting. If you hit the emergency button, which when you open it the video starts, you will see my friend, Jan Rader, who you may know from the documentary Heroin(e), who is amazing, and knows a lot about reversing overdoses.

And she will very quickly tell you exactly how to use the naloxone.

Justin: In an emergency, you call Jan. [laughs]

Sydnee: You call Jan.

Justin: You get Jan in an emergency ONEbox situation. But if you have a little time, if you have a little more time on your hands...

Sydnee: Yeah. So if you—so if it's an emergency and you don't know how to use it, you hit that button, and by the time you get the gloves on and get the naloxone out of the box, Jan's gonna have told you exactly how to use it, so you can feel confident that you're about to do the right thing.

And of course you're always calling 911 when you're doing this. She's gonna tell you that too. But you've gotta call 911 when you're doing this.

If you want to train people on how to use naloxone, so you need a slightly longer video that you can use for, like, a crowd, like, "Let me show you all how to use this medication," I'm on the video. [laughs quietly]

And I will teach you. I will walk you through, step by step, how to recognize an overdose, administer naloxone, and keep that person safe until EMS has arrived. It's about a five or six minute video, the longer form, so not very long. And it's great for training whatever your staff is.

So if you want to have one of these up in your restaurant, or your store, or at the library, or wherever, this is a great way to train everybody who works there, or any volunteers who want to know how to use this.

I should note, I do not receive any money whatsoever from ONEbox. I did not get any compensation for recording the video. I do not—I am not invested in this company. I do not receive any money from any sales of ONEbox anywhere, ever.

Justin: You can tell they're not paying her 'cause she curses through the whole video.

Sydnee: No I don't.

Justin: It's wild.

Sydnee: No, I don't. Don't do that. I believe that the ONEbox is a really useful, practical product. Like I said, it does a couple things. It gives you naloxone in public spaces, quickly makes you comfortable with how to use it, but it also raises the awareness. I like the idea that just like—I mean, knowing how to use an AED, where you put the little pads on somebody's chest if they're having cardiac arrest and shock them so that you can save their life, we all kind of accept that that's an amazing, heroic, noble act.

I don't know that we always look at naloxone in the some light. I don't think we always see that that same way.

There are people out there who would tell you you shouldn't do it. And it's because they still see using drugs as a moral failing, as opposed to a medical condition that we can address and treat using evidence-based science.

And putting the ONEbox up on the wall and making naloxone readily available and easy to use sends the message that this is a heroic, lifesaving,

important, humanist thing that we are all capable of doing, and it matters. And these lives matter, just like somebody who's having a cardiac arrest or who's had some sort of trauma, or something else that you would need emergency equipment for, correct?

Justin: Yeah.

Sydnee: So I think that's the real magic of the ONEbox. They're super easy to use. Um, if you go to the West Virginia Drug Intervention Institute, it's really easy to—

Justin: Yeah, it's WVDII.org.

Sydnee: And these would be great. And you can check out how to get a ONEbox. Um, how to put them in facilities, like I said. Schools would be a great place for these to be.

Justin: A lot of good resources on there, too. Um, they're pushing a lot about, uh, not keeping prescription medications accessible, stuff like that.

Sydnee: Oh, there's a—oh, it's more than just the ONEbox. They have a ton of great information on there. They also work to, like, debunk some of these myths. Things like—this is still a big question about fentanyl. People have said it's in marijuana. It's in, like, vape cartridges and stuff like that. They've been laced with fentanyl. And that's still a big question, because the temperature at which fentanyl vaporizes is 875 degrees.

Justin: Wow. That's Fahrenheit.

Sydnee: So the vape would have to reach—yes, 875 degrees to vaporize the fentanyl so that you could ingest it.

So the thought has been it—even if it's in there, it couldn't be doing anything, because most vapes get to, like, 400, 425. And so—now, I will say that they have tested—there is—there have—

Justin: A lot of 'em get to 420. [snorts]

Sydnee: There have been times where they've tested vapes, or they've tested—they have found evidence that maybe fentanyl is being put in things. But there's still a question as to whether that would make any sense, right? Like, could you even inhale it that—like, is it getting into your system at all that way?

So that is still an area of research. I would not—again, I think that there's so much fear around fentanyl that it makes you afraid of people who are using, intentionally or unintentionally, fentanyl, and that's not helpful, or fair, or productive in taking care of people.

And there are new substances on the horizon. I think this is the—this is sort of the area we're in now with opioids. Because these molecules are relatively easy to synthesize and manipulate, we have all kinds of fentanyl derivatives out there. We also have the nitazenes. So, nitazenes are substances that were synthesized around the same time that fentanyl was. A part of that same area of research interest. How can we make faster acting, stronger opioids?

But they're really dangerous to humans because they are so potent, so they were never developed into medications the way that fentanyl was. Well, now they're back in the drug supply. We're finding them again. Because if you understand chemistry and you have a lab, you can make these things.

And so we're finding these substances that are, you know, 50 times, 100 times, 500 times more potent than fentanyl out there in the drug supply. And at this point I wouldn't even call these things overdoses. These are poisonings. People are being poisoned by dangerous substances that do not belong in the human body, now. And knowing how to use overdose reversal medications like naloxone is more important than ever, because the more of these poisons that get into our drug supply, the more people we're going to see overdosing.

Justin: Syd, I had thought earlier about making an impassioned plea that we stop putting Cinnamon Toast Crunch flavor in the all the snack foods, because that is also happening, but there was just never a moment that it seemed tasteful? And this also—

Sydnee: Uh-huh.

Justin: —is not that moment. I just wanted to... sort of bookmark it, and note that I didn't say it.

Sydnee: Uh, well. I'm—

Justin: I don't need plaudits for that. I just feel like I've grown up a lot, and matured, and I don't need a big parade or a fancy crown. [laughs quietly]

Sydnee: Mm-hmm.

Justin: But I do... just want to mention that if we could stop putting Cinnamon Toast Crunch flavor in literally everything—it's on Bugles now. I mean, I just wanna—I—just never seemed like a good moment to say that.

Sydnee: Well, no. I think that was—and you know what, Justin? I would say it's still wasn't a good moment to say that.

Justin: No, it wasn't. And I wasn't saying it. I do want to be really clear about this. I was saying that I wasn't saying it. I was—I really wanna be clear about that, Sydnee.

Sydnee: Uh-huh, uh-huh.

Justin: That it would be in poor taste for me to mention it.

Sydnee: You were saying that you weren't saying it.

Justin: Mm-hmm.

Sydnee: Mm-hmm. Also, August 31st is International Overdose Awareness Day. We will be—myself, and Jan, and Susan, we will all be at Charleston, at our capitol city. And there will be a lot of communities all over the country who are—and all over the world. It's an international overdose awareness day. To, um—the theme is "Together we can," because we can reverse

overdoses. We can address this. This is something that if we get the tools out and the information out, we can save lives. And, uh, and so this is a...

Justin: How do save a life? Just like The Fray said? Exactly, Sydnee.

Sydnee: Mm-hmm. [laughs quietly]

Justin: That's how to save a life. You're welcome, The Fray! We solved it for you. Hey, thank you so much for listening to our podcast. Um, thank you for being here with us. Thank you for supporting us. Thanks to The Taxpayers for the use of their song, Medicines, as the intro and outro of our—our incredible program here, that was have, uh, just put up for you. Thanks again. That's gonna do it for us. Right, Syd? You got anything else you want to add?

Sydnee: No. Just, uh, thank you for listening. Please consider learning how to use naloxone, being trained, and spreading awareness.

Justin: Yes.

Sydnee: To other people.

Justin: Yes.

Sydnee: These episodes are so hard to do. [sighs]

Justin: Oh!

Sydnee: I'm sorry.

Justin: I know. That's why I was being kinda extra goofy, trying to cheer you up.

Sydnee: I know. I really—

Justin: But I realize that—you know what's hard, Syd? You know what I realized recording this episode? Uh, I think that I saw you were upset, and I was trying to do jokes that would make you laugh but not really thinking

about if they would—if people would be mad at me for making 'em or not. I was just kind of going for it. So, I was just trying to cheer you up.

Sydnee: No, I mean, I understand. That's your job. That's your part in this.

Justin: My job is to cheer you up. That's my first job. My second job is to do a good job on this podcast. But my first job will always be to cheer you up. So honestly, if I need to bomb on Sawbones to put a smile on your face, I will absolutely do it every time.

Sydnee: It's hard. And probably a lot of other people who listen who work in this space, um, or who have gone through this personally with themselves, family, friends—it's hard to talk about this in abstract, or academically, or just give you the history. I always tell Justin that as I start reading about the history of fentanyl, and then opioids, and then, like, opioid abuse, and then what happened here in Appalachia, it feels like a train speeding towards me, and I know what happens at the end, and it's—it's hard to relive it.

Justin: I love you.

Sydnee: I love you, too.

Justin: Also, I once ranked Cinnamon Toast Crunch as my number two cereal of all time. So I'm part of the problem. Thanks for listening! That's gonna do it for us. 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]