

Sawbones 505: Mechanical Heart Pump

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

[theme music plays]

[audience cheers]

Justin: Hello everybody, and welcome to *Sawbones*, a marital tour. Ladies and gentlemen, Sydnee McElroy.

[audience cheers]

Sydnee: And Justin McElroy.

[audience cheers]

Sydnee: Did we do it opposite for some reason? Why'd we do it opposite?

Justin: Thank you. Paul, thank you so much for pre-opening my Coke Zero. Your job is safe for another day.

Sydnee: And my Coors Light.

[audience cheers]

Sydnee: It's a special music edition.

Justin: That's perfect for Detroit. They love music here.

Sydnee: Coors Light.

Justin: Coors Light.

Sydnee: The Detroit classic.

[audience laughs]

Sydnee: That's wrong.

Justin: Yeah, we are talking about an actual Detroit classic, though. Am I wrong, Syd?

Sydnee: Yes, that's true. It's so great to be here and get to do this. Thank you.

[audience cheers]

Sydnee: Um, we always try to do something relevant to wherever we are, and that's such a wide range, because sometimes it's just like a weird thing. Like Chicago reversed their whole river once, which is really wild. And then sometimes we accidentally insult somewhere. [laughs quietly] Um, like we go to Salt Lake City and say, "Hey, you know, those essential oil companies Doterra and Young Living, they really suck." Um, and that's there. That's, like, right there. They're all about those there.

Justin: You went to Indiana and talked smack about Eli Lilly, like, within view of Eli Lilly. Like, you could see Eli Lilly.

Sydnee: We could see it.

[audience cheers]

Sydnee: Like, from the theater we were like, "Well, there it is."

Justin: [laughs]

Sydnee: Oops.

Justin: But this isn't one of those!

Sydnee: No. This is a good one.

Justin: You can relax now. Let your breath go free. Except for, of course, the maniac doctor of Detroit, the doctor that killed 100 people. That is—tonight's topic is the maniac doctor of Detroit.

Sydnee: No!

Justin: No.

Sydnee: Is that a thing?

Justin: No, but wouldn't that be, like, wild?

[audience laughs]

Justin: That's good. HBO, get at me. Go ahead, Syd.

Sydnee: No, this is a good one. I kept finding good things about medical history here. Which is, like, good and bad. 'Cause it's nice for Detroit, but it's bad when you're trying to find really, you know, whack stuff for a podcast. It's harder. Um, but I do want to talk about a good thing, a landmark medical intervention that come from right here in Detroit. Using—like, utilizing all the things that me, not knowing a ton about Detroit, kind of knew.

So, first of all, it's important to note that for much of human history—much of medical and human history—we really didn't think we could operate on the heart. It was thought that, like, if there's something going wrong inside the heart or with the heart, anything that would involve, like, a surgery on the heart, we just—we don't do that.

Justin: It's like when you get—when you're trying to fix an electronic, and then you get to a part that you know you're not supposed to be into. Like, oh, no, no. This isn't for me. I'm gonna put this away. I've opened the wrong panel here. This is for adults.

Sydnee: No. And so it was—if we attempted to do anything, it was mainly just palliative, or to relieve symptoms, or some sort of last ditch effort. But there really wasn't a coordinated effort to come up with a way to operate on the heart, because of all the blood in there. [laughs quietly]

[audience laughs]

Sydnee: That—that, like, comes out really quickly.

Justin: And how hard it is to take it out, stop it for a few minutes, fix her up, and slap it back in, right? That's a huge challenge.

Sydnee: That's a big deal. And it's gotta be pumpin' the whole time.

Justin: The whole time!

Sydnee: The whole time you're doing surgery on it, it has to keep pumping. And if it's being cut on, maybe it can't, and so then you're gonna need something to pump for it. This is, like, foreshadowing.

Justin: Whoa. You saying it like this, I'm realizing—man. It sounds so hard. [laughs]

[audience laughs]

Justin: Like, I would—right now, I don't think I could crack it, like, just sitting here. And I'm, like, a 2024 guy, you know what I mean? Like, I've been on Netflix, like, a bunch. Like, I should understand everything these Cro-Magnons are able to piece together. Right, Syd?

Sydnee: Well, I mean...

[audience laughs]

Justin: So, you were saying? I'm sorry to interrupt.

Sydnee: It's so notable that—I was looking back, like, the history of cardiac surgery, what did we do before? And there is this one instance that I kept

finding repeated back in 1896 where they were like, "Now, this one time... one guy tried this." And the story itself is weird, because there's this 22-year-old gardener, Wilhelm Eustace, who was wounded by a knife. That's all you get.

[audience laughs]

Sydnee: A passerby finds him on the side of the road, stabbed through the heart. No explanation. Which makes me suspect the passerby.

[audience laughs]

Sydnee: And this is how this story is repeated every time I read it!

Justin: Oh, or this guy's—or the victim's an absolute stinker. Like, "So, why did they stab you?"

"Uh, nothing... " [wheezes] "It was the—I didn't—nothing! It was not a big deal. Don't worry about it."

Sydnee: But it's wild, because he comes in on September 7th, 1896. He's got this stab wound in his heart. And all the doctors are basically like, "[weakly] Ohh... that's too bad... "

Justin: "Not the heart!"

Sydnee: "Ooh, that's bad!"

Justin: "Why'd you let 'em do that?"

Sydnee: And they don't really do much for him. They, like, put some camphor on him. They apply a topical cream. [laughs]

[audience laughs]

Justin: I mean, you mentioned palliative care, which in this era must've just been making a sad face at the person, right? "This is rough. You're right."

Sydnee: Ice packs? They put ice packs on him.

Justin: "You made it to 45, though. Good job."

Sydnee: He's 22!

Justin: Aww, man!

[audience laughs]

Sydnee: But it has a happy ending, because then—so, like, two days after he comes in, there's finally—Ludwig Wren was a surgeon who said, "I mean, we gotta do something, right?" And everybody was like, "No, Ludwig. We don't operate on the heart. It's the one thing we won't do!" And he's like, "Well... maybe I'll try."

So he goes in. He opens the guy up. He sews his heart back up. That was basically all he did was just sew the heart, sew the, you know, the slash in the heart back together. And then tell him, "Don't do any hard work for a few days."

[audience laughs]

Justin: I'm surprised—

Sydnee: And the guy lived! I mean, he survived. That was our f—that's our first, like, heart surgery in history ever done was sewing a hole back up.

Justin: Now, it surprises me. As much as surgeons in that period used to be real, real dirty dogs—like, real happy for any opportunity to get in there and cut—I'm surprised that no one had thought of this before. Like, "Well, this one's going out. Less mess around with the heart a little bit and see what we can figure out."

Sydnee: [laughs quietly]

[audience laughs]

Sydnee: Well... I mean, I think—there's so much in the history—

Justin: That's what this—you all are laughing. That's exactly what this dude did. He's like, "Let me just get in there real quick. What's the worse case scenario? He dies of a stab wound? That's gonna happen anyway! Let me see what I can figure out in there!"

Sydnee: It was just such a taboo, because you didn't want to be... I mean, and I think this is probably, I would assume, true of surgeons today. I am not a surgeon. I'm a family doctor. But I'm gonna guess it's true of surgeons. That you don't want to be the reason someone dies?

[audience laughs]

Justin: Yeah, but like... again, I don't wanna keep harping on it, but this was a heart stab. They cannot get you for this. Like, no matter how bad you mess up they're like, "Oh, yeah. That one... was there before. Wild."

Sydnee: Not your fault.

Justin: Wildly, yeah, that one was before. That was not me.

Sydnee: No, and I mean, I think it speaks to kind of—having done a lot of studying of medical history for the over a decade we've been doing this show, you really get this sense that doctors have these sort of, like, codes of—and I don't even want to say ethics, 'cause it's not ethical—but just, like, here is what we do, and here is what we don't do. I mean, for a long time doctors didn't do surgery, right? We wouldn't cut into the human body at all, because that was something that was off limits. The idea that you would—I mean, the way Hippocrates wrote it, cut for the stone. You wouldn't do that. And so we just see this evolution over time where we go, "Well, but we do—we do want to fix things."

So eventually we start trying. And you see this kind of, like, sporadic cases. There's this one in 1896, and then in 1925 there was a surgeon in Middlesex who operated on a valve. Again, the patient lived. No one ever referred a patient to the surgeon again. That is what is documented is that no doctor

would send this guy any patients, because he cut on his heart! I mean, he lived, but still. Still!

Justin: It was that forbidden, it was that taboo. Sheesh!

Sydnee: The first time that a—a patent ductus arteriosus. It's a congenital heart defect, something that goes away while you're developing in the womb, but then it sometimes persists and you have to have a surgery to fix it when you're a baby.

Anyway, the first time we fixed one of those, the surgeon who did it was a resident in training. He did it without telling his chief resident, and while the attending physician was on holiday somewhere, so that nobody would know he was doing it, and he got away with it. And still, I mean, he got in huge trouble for it because it was like, "We don't do that! We don't operate on the heart." You start to see a little—

Justin: Yeah, I would ho—can I just say, I'm really glad that he got in huge trouble for that!

[audience laughs]

Sydnee: Well, I mean...

Justin: That is not a precedent! I don't need people doing night medicine! Like, secret...

[audience laughs]

Justin: It's like, "You've been to hospital. Welcome to Hospital Nights. This is where we get a little bit freaky with some of the treatment. It's all highly experimental."

Sydnee: This is tough for me, because—

Justin: "Don't get sick at night!"

Sydnee: I do—I do teach residents, and so there is a part of me that's like, "That is bone chilling. Like, that is—please don't do that. Please don't do that!"

Justin: This shouldn't be celebrated! I agree, yeah, for sure!

Sydnee: But I also, like—I watched House, you know.

[audience laughs]

Sydnee: Sometimes you gotta break the rules. Um, during World War II is really when we see this, like, interest in "Maybe we can do something with the heart" really grow. And it was because of sort of the severity of the wounds that they were seeing. And we were in a situation where the risk-benefit ratio really started to shift, right? You have somebody—

Justin: [scoffs]

Sydnee: [laughs quietly] I mean, that has sustained a traumatic injury to the chest. So they've been shot, there's shrapnel. There's something where it's like, "Okay. We know this person's gonna die, so we might as well try anything we can." And that...

[audience laughs]

Justin: So I'm a futurist at this point, right? I was just before my time. Like, I just realized it too early. Is that—must be it.

Sydnee: I mean, I do think that happens in medicine. Sometimes eventually we go, "Well, I guess it's bad enough that we should try it anyway." [laughs]

Justin: They should—did they have a meeting where they were like, "Okay, guys. We've all been putting it off. We gotta figure out how this friggin' thing works. Like, I know how hard it seems. Tony, you're always talking about it, how hard it is. I know. It seems really, really hard. But we gotta figure something out, 'cause this is embarrassing."

Sydnee: And that's—well, and that's exactly what they said. They were like, "Okay. We need to find a way... to keep the heart pumping. Keep blood circulating through the body while we are kind of disabling the pump for a minute," is a good way to—I mean, we're all just, like, electricity and plumbing, really. So, I mean, it's plumbing is what we're dealing with. And...

[audience laughs]

Sydnee: [laughs quietly] I mean, basically. And so they start coming up with different ways to do it. There's this one great technique I was reading about, like, throughout the '40s. There was a medical student at Harvard who suggested a way to do it where you, like, create this little tunnel in the wall of one part of the heart, and the way you know you're in it is you stab yourself in the finger with the needle, and that's when you know you're in the right—that was part of the documented technique of this procedure is like, "And then you insert the needle, and when you feel it stabbing into the tip of your index finger, you're in."

[audience laughs]

Sydnee: So that didn't last very long. People were like, "Well... that seems bad." Um, and then there were people who proposed, like, well, maybe we just get 'em real cold.

Justin: I love that.

Sydnee: Let's freeze 'em.

Justin: That makes sense. We've done that.

Sydnee: Everything flows down.

Justin: That's happened.

Sydnee: And the thought was, if you made 'em super cold, and then you just clamped the whole heart off, and worked so fast...

[audience laughs]

Sydnee: ... you had, like, eight minutes, in and out.

Justin: Get in, get out. Stay cold.

[audience laughs]

Sydnee: [laughs]

Justin: Only do it outdoors in January. You gotta keep this puppy chilly.

Sydnee: It feels like an Ocean's movie. You get in, you get out. We've frozen the heart.

[audience laughs]

[ad break]

Sydnee: So, all of this was obviously not—not super successful. And then this enters, like, the hero of our story. And I really love this, because we're from West Virginia, and this is like a connection between Detroit and West Virginia! Because Dr. Forest Dewey Dodrill was born in 1902—January 26th, 1902—in Webster Springs, West Virginia.

Justin: Woo!

Sydnee: He went to WVU. Which... we're from Huntington—you all probably don't know this. We're from Huntington. We like Marshall. That's not the good college in our state.

[audience laughs]

Justin: Yeah.

Sydnee: Sorry. No, I'm kidding.

Justin: [simultaneously] WVU stinks. That's where I'm at.

Sydnee: [laughs] I—we went to Marshall so I gotta say that.

Justin: Yeah, okay.

Sydnee: But anyway, he went to WVU. He went to Harvard. So, like, super—like, better than WVU, probably, we can all agree, right? Then he went to Harvard. Uh, and then he did his internship and residency at Detroit's Harper Hospital and became a master of surgery, and got a degree from the University of Michigan in 1942, so he came from our home state and then right here to Detroit and started practicing medicine.

And it occurred to him while working in Detroit that, you know, kind of like I said, the pumping of the heart isn't that unlike pumping other fluids. And if you know how to pump some kind of fluid in some sort of, like, engine type of thing... maybe you could figure out how to pump fluids in the human body, and it's engine, you know, the heart. And he was right here in Detroit. So what did he do? He went to General Motors.

[audience laughs and cheers]

Sydnee: Um, he figured that if you could pump oil and gas and everything, you could probably figure out how to pump blood through the heart. And that is exactly what he tried to do. And this was—so, this idea of a machine that was external—like, something that would sit outside the human body and pump fluids through the human body for a period of time so you could work on it—had been exp—like, other people were doing these experiments. So he wasn't the first guy to kind of consider this idea.

But the only other guy who had done it at that point, Dr. John Gibbon, had only done it on cats.

[audience laughs]

Sydnee: Lots of cats.

[audience groans]

Sydnee: No, I mean, they lived! They were okay, don't worry.

[audience laughs and cheers]

Justin: Wait, Syd. Did they all live?

Sydnee: All the cats lived.

[audience laughs]

Justin: It says it right there in her notes, folks! All the cats lived!

[audience cheers and applauds]

Justin: It's amazing!

Sydnee: So we have—

Justin: Just today, everybody lives.

[scattered cheers]

Sydnee: All the—so he had published all these papers on, like, how to keep a cat alive, but he had never tried it in humans. And so this, like, opened the door for Dr. Dodrill. Like, "Well, I'm gonna do it in humans, and I'm gonna get General Motors to help me."

So he went to one of the cardiologists who was president of the Michigan Heart Association, who also had a good friend named Charles Wilson who worked at—he was the GM president at the time. He also sat on the board of the hospital. And so it was just like a match made in heaven. He went to him and he was like, "You know what I think you guys could do is build me an engine for the heart. If you could build something that can pump blood instead of all these other fluids that you pump, we could probably use this."

And that is exactly what General Motors decided to devote time and resources to. So they put together a team of more than a dozen engineers and researchers, and they had to work obviously with physicians, to kind of get together and discuss, "Okay. This is how the heart works. Here's how

your engines work." Which I don't really know, but I assume it's like a heart, 'cause I know how that works.

[audience laughs]

Sydnee: And we're all gonna get together and figure out, how can we make this something we can use in an operating room? And again, this is, like, a temporary thing. This would lead to, like, later on if you think about, like, a mechanical heart, this is the precursor to this that you're hearing about right now. At this time we're talking about something that would just sit outside the body and would be used temporarily, but this is what they're starting to discuss. Can we make a mechanical heart?

And so they start working on, how is this gonna go? It took them 20 months. It was all under Mr. Rippingille, was the leader of the team of engineers who put all this together. And they tested ten different versions of the mechanical heart, and the design that they finally settled on most closely resembles a V12 engine. Yes! And so they built an engine for the heart.

It has six pump units on each side of the two banks on it. Which, I mean, again, I think this is what an engine would look like. And one bank is gonna replace the left side of the heart. The other is gonna replace the right side of the heart. And the pump units are gonna circulate the blood using positive and negative air pressure throughout the body for a temporary period of time while you're able to operate.

Justin: I hope that AI never finds out about this one, Syd.

[audience laughs]

Justin: 'Cause I'm looking at it right now and I think, "This is the last piece they've been missing."

[audience laughs]

Sydnee: It's really—

Justin: This is the only thing keeping them from taking over is they don't have a heart and they don't love. And now I'm looking at this and I'm, like, kind of freaking out. 'Cause if the AI scrubs this one with its spiders, they're gonna be like, "Hey. 101110011110111001110, come take a look at this!"

[audience laughs]

Sydnee: Oh, that's the name of one of 'em.

Justin: Yeah, it's in binary.

Sydnee: [laughs]

Justin: Why would they have names like ours? Exactly.

Sydnee: Mm-hmm.

[audience laughs]

Sydnee: Maybe they already do.

Justin: Well, they don't, but now they have hearts, and can feel and love. They're gonna have their own names, because that's the only thing stopping them from taking over. Good job, Syd.

Sydnee: Sorry. Now I showed 'em how to make a heart. I, uh—

Justin: Just don't tell the AI about this one episode! It's not that hard. Just don't tell Alexa or whatever about it!

Sydnee: It's not my fault. It's really General Motors' fault. It's not my fault. [laughs quietly]

Justin: That's true. That's true.

Sydnee: I don't know how to build an engine. And I love the idea of this. Something about it—for some reason lately TikTok keeps showing me Mad Men clips. I don't know why. Is this anyone else? Is it just me? Right? Okay.

I feel like that it circulates sometimes certain things. And they're like, "You seem like you like this. You want more? You want more? You want more?"

And this feels like something that they'd be talking about on an episode of Mad Men. Like, "How are we gonna pitch this? How are we gonna—look, they built an engine for the heart."

It seems like the perfect Don Draper ad campaign. So anyway—

Justin: It's good enough for your heart, then it's good enough for your... GM brand car.

Sydnee: It's to sell cars, though. [laughs] So they built this prototype and they were really excited. And then... they had to test it.

Justin: [snorts] Listen. How big of a cat can you get down here right now?

[audience laughs]

Justin: Don't ask any more questions. Just find the biggest flippin' cat you can. I have, like, 30 minutes. I'm serious! A big cat, too, Jerry! Big!

Sydnee: They had to test it. And let's just... you're all—I'm sure you're all smart enough to figure out what happened. But at the end of this story, I mentioned that Rippingille was the name of the lead engineer. Mr. Rippingille's family got a brand new pet dog.

[audience groans]

Sydnee: That had been kept alive on this amazing, mechanical GM heart machine. And, like all the other dogs that it was tested on, it was all fine. Anyway, it worked.

Justin: It was all fine! That part was true, though, I don't think she was lying! Did they really get to keep the dog?

Sydnee: They did. That was their family pet.

Justin: Oh, okay, good! Okay, well, that's a good one!

Sydnee: [simultaneously] Yeah, no, it worked.

Justin: Yay!

Sydnee: No, that's a true story!

[audience cheers]

Sydnee: No, that really was—that was their family pet. Which is, like, a great thing. Like, "Hey, you see our family dog? Guess what. [laughs quietly] I built an engine, and it kept this dog alive."

Maybe it wasn't necessary to put the dog on the machine. But the point is, the dog was fine.

Um, so they have this machine. They've tested it out. The Rippingille's have a new pet. Everything's great. But they need to try it on a human. And the perfect human walked in the doors of Harper Hospital on July 3rd, 1952: Mr. Henry Opitek, who was a 40 year old man—41 year old man—who had a mitral heart valve problem that he'd had since he was a kid. And his mitral valve was failing.

And he came in with basically, like, a heart failure. He was fluid overloaded. He was very sick. He couldn't breathe. And up until then, there wouldn't have really been much you could do, because they knew they needed to fix the valve. They knew how to fix the valve. But in order to do so they needed to keep the heart pumping the entire time. So up until this moment, there would've been nothing to do for Mr. Opitek except basically just, you know, palliative care, make him comfortable, let his family say goodbye.

But instead, he walked into Harper Hospital and Dr. Dodrill said, "We're gonna use the machine."

Justin: And he's like, "Can I see the machine?"

And they're like, "You don't wanna see the machine."

[audience laughs]

Justin: "You can see the machine after, okay? But you don't wanna—you don't wanna see it before." [laughs quietly]

Sydnee: This must have been the craziest operating room.

Justin: [wheeze-laughs] It looks like a cut scene from Grease!

[audience laughs]

Justin: [singing] Go Grease pumper, you're pumpin' that blood clean right through. Grease pumper!

Sydnee: [laughs quietly] 'Cause what you've got is this huge team of surgeons, because they're doing essentially the first open heart surgery. I mean, that is what is happening right now. The first open heart surgery.

Justin: And there's two guys—there's two guys working on the machine. The doctors are wearing masks and the two guys working on the machine aren't. Like, "Eh, it's fine. We're the machine guys, so we don't actually need one of those."

Sydnee: That is who they are. Those are General Motors employees. Those are engineers.

[audience laughs and cheers]

Justin: Notably germ-free. Always, like, sterilized before. [laughs]

Sydnee: Those are the—which, do you—here's—there are two possibilities. Either they came walking in with, like, no gown, no gloves, no mask, and everybody just went, "Uh... I don't wanna mess with them. It's fine."

Or somebody said, "You guys really need to wear, you know, this stuff."

And they went, "No."

Justin: "Nope. Maybe after the history picture. You guys can cover up your faces for the history picture. We wanna be in the history picture!"

Sydnee: [laughs]

Justin: "Maybe you guys'll be in a lot of these. We're just guys that work on this weird little heart at GM! We gotta be in history!"

Sydnee: So they—it took about 50 minutes that they kept Mr. Opitek on the machine, and it pumped for his heart during the procedure while they repaired his mitral valve. And like I said, they had the entire team. They had the GM employees. It was successful. It worked the entire time. I'm assuming it's all been sterilized and all that good stuff. 'Cause Mr. Opitek came through the surgery really well and survived another 29 years.

[audience cheers and applauds]

Sydnee: Thanks to what came to be known as the Dodrill GMR heart machine. Which is really cool! I know, look. The kids just love it.

[audience laughs]

Sydnee: I do think—

Justin: That one just dispenses slushies.

[audience laughs]

Justin: Actually, kids, it pumps the slushies directly into your bloodstream.

Sydnee: It sent me on this really weird—as I was looking up all these pictures of the surgery, you see—not only do you see people in the operating room who are like, no gown, no glove, no mask, nothing. Like, not what we would do today. You also see lots of pictures of surgeons with their masks under their nose. Right!

Like, it sent me down this weird rabbit hole where I was trying to figure out, when did we start putting our noses. And I can't—it was some time in the 40's. So this feels late. We should've known. This is the early 50's. We should've known. But at some time in the 40's we knew to pull our masks over our noses, and we just didn't!

Justin: So, I gotta ask—

Sydnee: In the operating room!

Justin: So, why—this is does not look like an early version of something that I recognize from modern medicine. Did this become, like, a standard that was, like, refined and retooled and built on, or...?

Sydnee: So, like a lot of, I think, not just in medical advancements but, like, scientific advancements in general, there were lots of people working on this idea all over the country at a similar time period, right? So this exact model that looks like a car engine wouldn't be the one that would eventually become what we think of as cardiopulmonary bypass today, because we can do that, right? We can put people on what are I think kind of commonly known as, like, heart and lung machines that will do the work of the heart and lungs for a temporary period of time while we operate on them or while they're out of commission, or for whatever reason we need to.

And certainly we have a lot of devices that we can, you know, use to artificially make the heart pump now that are much smaller. And, again, wouldn't be used in a car.

But this was—I mean, this was a landmark moment! Because this was the first time that a machine was used to pump blood through the body while a heart procedure was performed. And while this exact model didn't lead to what we use today, it definitely is a big piece of the story. And it was really interesting, because as I found this—I was reading all these sort of survey articles of, like, the history of cardiac surgery. And this isn't given enough, like, mention or credit. Like, Detroit, you should demand this. This was a huge accomplishment. And it's kind of glossed over.

[audience cheers and applauds]

Sydnee: But it really was. And you can find this—so, if you want to see the original—

Justin: Oh, man. If this was Huntington, though—you all got, like, cars, and lots of music and stuff. Like, if this happened in Huntington it would be all we talked about.

[audience laughs]

Justin: It would be the mascot of the city, the Robie the Robot Heart, for sure. We talk a lot about the, like—like—

Sydnee: Chili Fest.

Justin: Chili Fest. Like, Billy—like, Billy Crystal went to Marshall for a year on a softball scholarship. Like, that's what we... "You know, the voice of Chucky is actually from Huntington."

Sydnee: [laughs]

Justin: That's true, though. He's... Brad Dourif.

Sydnee: Jennifer Garner is from Charleston, which is 45—

Justin: Different.

Sydnee: —minutes away. But that's really close.

Justin: She probably likes WVU. [blows raspberry]

[audience laughs]

Sydnee: If you want to see the original, what they called the Michigan Heart Machine, it is at the Smithsonian, so you can check out the original. They've built another model that is in the Harper Hospital lobby, I believe. I have not been there, but perhaps someone here has. Um, and there's another on display at the GM Heritage Center.

They built, like, four of these different ones. And then they would add on to them to add oxygen so that it would be not just a heart machine but a heart and lung machine. Um, and like I said, it wasn't—well, this exact model obviously, you would notice. If you had seen this—if this was in operating rooms, someone would have noticed.

It's a big piece in the story of how we learned how to operate on the heart. So, thank you, Detroit.

Justin: Congratulations, Detroit!

[audience cheers and applauds]

Justin: That is, uh, gonna do it for us for this episode of Sawbones. We want to thank The Taxpayers for the use of their song, Medicines, as the intro and outro of our program. Uh, 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!

[audience cheers]

[theme music plays]

[chord]

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