# Optimizing Care for Heart Disease with Technology from HeartFlow

## With Lauren Marcheskie

### Episode 62

*Read the show notes or listen to the episode:*[*TheHealthcareLeadershipExperience.com*](http://thehealthcareleadershipexperience.com/)

Lauren ([00:00](https://www.rev.com/transcript-editor/Edit?token=2QtOx-ul1ifF2Z6SLXfRydQKang-bYg_F43dhW48qIVESCd8P41THpmrkdZiSEVSIw4y7UNMj4EO7UHHBui0aaVW1rM&loadFrom=DocumentDeeplink&ts=0.54)):

You have a ton of patients in a healthcare system getting tests that may not be helpful in their diagnosis or creating a treatment plan, and this causes a real strain on the patient experience, so they're just getting bopped around from test to test, not quite getting their answers yet. Staffing, huge issue right now. Costs to the healthcare system, accuracy of the diagnosis, and ultimately the outcomes.

Introduction ([00:25](https://www.rev.com/transcript-editor/Edit?token=DI94tjaxtqdDCGwGv5WtDs5gpwECd3o2zGqPw_JR1xvdVpk7uxAU5rSI_TYPthq_w-eV3XEVIOMfACQKZ6wHKdXXnBo&loadFrom=DocumentDeeplink&ts=25.62)):

Welcome to the Healthcare Leadership Experience Podcast, hosted by Lisa Miller and Jim Cagliostro. Lisa is the founder of VIE Healthcare Consulting and now managing director at SpendMend. Lisa and her team has generated over $1 billion in financial improvements for VIE’s clients since 1999.

Since 2007, Jim has been a registered nurse working in critical care, perioperative services, and outpatient settings at nationally-recognized medical facilities across three states, you'll hear conversations on relevant and trending topics in healthcare and much more. Now here's your hosts, Lisa and Jim.

Jim ([01:05](https://www.rev.com/transcript-editor/Edit?token=GILb5YU36zmZlNGL9SF2pcwb7DBS-s07MuanoG-Z6P5QQALE-WEiqkqmA-ZohY9PkoRXLMUp1Q6UjYRe0WWXgJrpiK8&loadFrom=DocumentDeeplink&ts=65.22)):

Hi, this is Jim Cagliostro and you're listening to the Healthcare Leadership Experience Radio Show. Today's guest is Lauren Marcheskie, district sales manager for HeartFlow. We're excited to learn more about the technology that HeartFlow uses and how it can help patients avoid unnecessary testing and ultimately help hospitals save money. Welcome Lauren, and thanks for joining us today.

Lauren ([01:26](https://www.rev.com/transcript-editor/Edit?token=meCYPfsWmhNmSjPSigdnfKDk_JUJK2yFk5ucn9AjbbpM6dLVHvHbFiIXO2VdwzF2bXBPOmYi7GX7otYU_inuFRju6Gk&loadFrom=DocumentDeeplink&ts=86.79)):

Thanks for having me, Jim. I'm excited to be here.

Jim ([01:29](https://www.rev.com/transcript-editor/Edit?token=WEuDOLU32dfiK8gZSD-RjKxepn7N29A3pt4r9VxKjdF8T83Pqv9lDDxkIIvHH0BzkLbDtqiZRRNfPuoZCq3ZGpK0kpM&loadFrom=DocumentDeeplink&ts=89.04)):

Awesome. So to start, I always believe it helps our listeners to hear a little bit about your journey, including whether it's your education, training, your work experience, life experience — everything that has brought you to this point, everything that's prepared you for the current role that you serve as district sales manager for HeartFlow.

Lauren ([01:47](https://www.rev.com/transcript-editor/Edit?token=0_44dhuuOarsqx31qdSjxSLvCsREJ0VQbb5fbwz7VJ0D5aOW1A5iI8uYhX2B8uYoiRTaj1w2ZDPNvHuKquUBU3szq5s&loadFrom=DocumentDeeplink&ts=107.94)):

Absolutely. My journey for my career really started at York College in York, PA. I received my bachelor’s of nursing there in, dating myself 2005, and it was a wonderful program, excellent education, and really lifelong friends were established there. And then I began my career as a critical care nurse, and I started actually at York Hospital. And some people may ask, "Why did you choose York Hospital?" Well one, I was already a certified nursing assistant in their ICU, in their coronary care unit. Two, fun fact, I drove a 1985 Chevette in 2005. So this car only had AM radio and it could go 40 miles an hour, so I was relegated to wherever I could go that wasn't on the highway. Luckily WellSpan York Hospital's an excellent place to start, really gave me a foundation in coronary care and later open heart.

Lauren ([02:50](https://www.rev.com/transcript-editor/Edit?token=21rPj7cNL49oFW867e7Oz2MwlGX4DiYFnnaPzFH3QtMmhrQoPFVoTBk6GAX90KuKSuQxfV4WbWKkzpPHsFMHAi8HUsg&loadFrom=DocumentDeeplink&ts=170.25)):

And then I traveled my journey up 83 to Penn State Hershey Medical Center, built more skills there with post-op cardiac thoracic surgery type nursing ICU, and then really got interested into technology. At that point, it was around '07 at that point, things like LVADs ,heart transplant really became that next level. So I worked with those devices at the bedside and then they said, "Would you be interested in being a coordinator for these patients at the hospital?" And that was probably one of my most fulfilling jobs. I was able to help see the patients when they were very, very sick, before they had their LVAD, assist during the actual surgery, and then follow them, educate them post-operatively, and then discharged, sometimes till the end of their life we kept in touch. So that was a really wonderful job that helped me build skills for building programs within a hospital and understanding that continuum of care for both LVAD and heart transplant patients.

Lauren ([03:54](https://www.rev.com/transcript-editor/Edit?token=n61bYIUtSZ7vHYALt16tXVgS3N2jR5xwVbMiWMxuvXeAdmC7HS01Q9H2X46juBEDVogCi9PIzpc8eh1cEh3vfmvkqmY&loadFrom=DocumentDeeplink&ts=234.63)):

And then when you work with these devices every day, you get to know the representatives from the companies as well, especially people typically known as clinical consultants or clinical specialists. So there was a small company called Thoritech at the time who was really the only manufacturer of left ventricular assist devices at that particular time. And got to really be friends with those representatives and they had an opening in central PA, and I got to interview and was lucky enough to be offered that position. So that was my big jump, I guess, from bedside nursing, direct patient care, over to industry. Loved being a part of industry. It was kind of doing the same job as an LVAD coordinator in that I was educating a lot. I was assisting in the surgeries and helping the physicians get better outcomes, but I got do it a lot of different hospitals. So you get to learn from the best of the best over in Philadelphia, Lehigh Valley, York, you get to hop around every day. It's a little bit different. So I always really enjoyed that type of variety.

Jim ([05:02](https://www.rev.com/transcript-editor/Edit?token=SUGw_ssDMyv2e4ZOZrE02-XGhgY9ZwnrUUz2tcm8cFY_VQVROvj18Sep8BWQYVJyFefLmBbc1475KNaIN5ZlYzkaIwc&loadFrom=DocumentDeeplink&ts=302.25)):

Can I ask, Lauren, sorry to jump in here. Can you just take us back a little bit into making that transition? It sounds like that role as the coordinator for LVAD helped, but was that a scary thing, was that intimidating, or a lot of that responsibility overlapped where it wasn't that difficult of a transition, going from the bedside to the industry?

Lauren ([05:23](https://www.rev.com/transcript-editor/Edit?token=d6kWfOfcjaAYrAvwsuP1HBf4N3eqphHZctpiNUHPQUuJGmjfxLpuZS0o-ynWkO3Wehw9sNrISKd35gPg9A9vs9QCXM8&loadFrom=DocumentDeeplink&ts=323.19)):

For me, it was easy, it was exciting, I wanted that jump. And because the day-to-day was so very similar, working with the same devices and the same in terms of skillset, for me that was fairly seamless. What I usually tell my RN colleagues who are interested in getting into industry is, one, think about the devices or the technologies that you currently work with that you're passionate about. I couldn't go out and just sell copiers or something. I had to really be a part of an industry was something that I'm very passionate about clinically. So I think that's number one. And two, being comfortable with the business side of medicine. Not all nurses are wired that way, but those that can understand that this is a really unique position where every patient that we help is also building the business side of medicine and helping to advance research. So if you're comfortable tying those two things together, then I think industry can be a really wonderful spot for those RNs who want to pursue that avenue.

Lauren ([06:32](https://www.rev.com/transcript-editor/Edit?token=sj7q8xW6Y-4eCa6FRYCsAejVjddF2WtkLTu7OG8NCD7w613hqwl4gl1Ke2Lz3VzVPMmVwNCM0EHPBn-FDFINRnIL7o0&loadFrom=DocumentDeeplink&ts=392.25)):

It really is something that people approach me a lot, like, "How did you go from one to the other?" So it's just thinking about what do you get your hands on every day in the hospital that could want to do something further with. But yeah, from there I was a clinical consultant. It was part of the Philadelphia and central PA team. We went through a series of acquisitions. So Thoritech got bought by St. Jude Medical, and then a year later, St. Jude Medical got bought by Abbott. So we just rode the wave of acquisitions, ended up moving over to the marketing team for heart failure, helping to lead some of their different projects within training. So new hires, teaching them about LVAD therapy, helping with some of the surgical trainings, new surgeons, new physicians, running those programs, and even did some stuff with a speaker's bureau where peer physicians come and speak to other peers.

Lauren ([07:20](https://www.rev.com/transcript-editor/Edit?token=UyzF6P1tbj4dMY-Tj48SfnasbZEJ7sT9gJE-I6OysakoBpBTLGFlRb4POCbjBjQ3UJbB0-HyqPWe4lLvGLa5UcFAk4k&loadFrom=DocumentDeeplink&ts=440.94)):

So that was neat. That was a lot of collaboration amongst lots of different disciplines in a big company, and you're talking to compliance and legal and all these people that I didn't think I would ever have a chance to interact with and you learn a lot of skill sets in managing long-term projects. It was also an excellent job during COVID. I was able to do a lot of working from home, and at that point I just had a baby, he's like three and a half now. It was a nice balance.

Let's see, next chapter was moving into territory manager role, so that is a little bit more sales focused. You're responsible for the revenue of a territory, new accounts, and certainly customer service and clinical support is always tied into any medical device job.

Lauren ([08:09](https://www.rev.com/transcript-editor/Edit?token=Gbn8Ivq1NnJYO8EUZbnmKMtKFqZnIj-20kvb5unN9tcZw3OXuF8M1BRpIz7sX0dokIX3d72v32mUeWCYQ2rgc9Pk2rA&loadFrom=DocumentDeeplink&ts=489)):

And I did that with a device called MitraClip. So I actually left the world of LVADs and heart failure and went over to MitraClip which is a percutaneous mitral valve repair system. So they go in through the groin and actually can fix the mitral valve with this really tiny little clip. That was an awesome technology. Definitely explore that if you haven't. It does help patients with heart failure and also those with primary valve disease like prolapses or flail leaflets. So loved doing that job. And that was in the Philadelphia area.

And then I was given an opportunity with HeartFlow, and this is my current role as a district sales manager. HeartFlow is completely different than what I've done in the past. I've always worked kind of in this treatment space, people who have had heart attacks, who are suffering from heart failure, how to make them better, which can really be a journey, as you know, Jim. Once you have that big heart attack, it can be a struggle for many, many years.

Lauren ([09:07](https://www.rev.com/transcript-editor/Edit?token=BnBRu-QcxnTGCt4019z3pxm5gZ7rrn--uiAP1ZFy4eJYj7J-GnXYkeqLuLSYcp2XPg7UspwerOMeWKLqvFK4fQ2_DPc&loadFrom=DocumentDeeplink&ts=547.71)):

And thank goodness we have options for those patients, but with HeartFlow, this is more of a diagnostic software, and I was excited about the idea of helping people on a very broad scale, really changing population health, and maybe preventing that first big MI or getting to someone that we see that narrowing, the physician can do something about it before it gets to that point. So that was really exciting to me and certainly being able to leverage my knowledge of hospitals, of programs. I've always worked in innovative technology. I like the weird stuff that no one's heard of. So this has been a really, really good fit for me. I've only been here a couple months, but I love it so far and it's just really exciting space.

Lauren ([09:56](https://www.rev.com/transcript-editor/Edit?token=tC4RUZt3h2myg4TvsDFlfKx3kaMeQ-VA2-yEQhnPTBn0ebzXuvfklYFE65Scpcry5Zt9fI2QHodiht0CwhvaBxoztDc&loadFrom=DocumentDeeplink&ts=596.55)):

You asked me at the very beginning about not just my career education, but also any life experiences. On that point I would say when I was a kid I moved around a lot. Every two years we moved around. And that taught me a lot of resilience, a lot of adaptability, which I think is so key in any role, but especially within nursing, and then later in life becoming a mom really helps you to prioritize-

Jim ([10:22](https://www.rev.com/transcript-editor/Edit?token=U4vb3qxdY1BSdp48mo6kHDITEMmRgoDI8JNYxLDUAVENlYurQdM9EQqdNNWU1GO7Ah7A4NxL0T9GexRolSw_OeXfUfg&loadFrom=DocumentDeeplink&ts=622.23)):

Changes everything, right?

Lauren ([10:23](https://www.rev.com/transcript-editor/Edit?token=W3VBR30DExbzfDrbLyaBVYQXzmqGG7TKLYN0k3jUvP4qePCFgjxf_SA1BTGQ9bWJc1amjigzzUnsByzMllrXGKXot0s&loadFrom=DocumentDeeplink&ts=623.16)):

In your communication. There's so many, I think, similarities between sometimes parenting and things that we have to do at work. But certainly finding humor and optimism in everything we do is my guiding force. And it's led me to hear so far.

Jim ([10:43](https://www.rev.com/transcript-editor/Edit?token=e6jOmCUvoHAvD8rRfann6q0C2stGFUX-Belz-QhZqB4Veho6zkYfPrKBM3GlHR8ximGfPPgkQrgXRQhHnwZQM7b3rvo&loadFrom=DocumentDeeplink&ts=643.95)):

And you mentioned something about where you started York Hospital and then going to Hershey, that's where our time overlapped. And I always go back to my early years of nursing. Laying that foundation. You don't realize it, but you're laying a foundation that is preparing you for especially that bedside experience that you mentioned, and the coordinator, and then getting into industry that overlapped what you did as a coordinator. All these things lay that foundation and I share with people often, it's so important to get that strong start to really build a foundation, especially in nursing, but really in any industry.

Lauren ([11:14](https://www.rev.com/transcript-editor/Edit?token=dISgYDJbVdZFKqUIzVNTCQWNj4LE1vwe8MAw0zCK1oh9LuooZ-LCyNk1v4aQ1aHu_6KSGEaQZSsFNTVW3jAWTzngDtw&loadFrom=DocumentDeeplink&ts=674.52)):

Yeah, you got to be in the trenches. I fully believe that.

Jim ([11:18](https://www.rev.com/transcript-editor/Edit?token=OWvylYfVixge4Fksm9mbH1UJxG1Cm-L8rT1E_PFrto_Oim6FEo5X8nQHapNhgIExYJbh_NaIpo9AmG03TYT4yAc-vnw&loadFrom=DocumentDeeplink&ts=678.33)):

Yes. So we'll jump into HeartFlow. It's a medical technology company. It focuses on supporting the diagnosis and management of coronary artery disease. And I know you mentioned a little bit there. Before getting into the specific technology, do you mind describing the traditional or historical approach to the diagnosis and management of coronary artery disease? I know you mentioned you were involved at York and Hershey in terms of the diagnosis and management of CAD. Can you just talk a little bit about the history before we get into what HeartFlow does?

Lauren ([11:50](https://www.rev.com/transcript-editor/Edit?token=9I1yZSBGVeD56aumpv5QmyWD2yEn1GA0nUDyHjOza8LIzYaEXSZ9__V93YnUL-DA9TDYV2yMyrB29dSIEgbRurP0ZWw&loadFrom=DocumentDeeplink&ts=710.07)):

Yeah, yeah, absolutely. So as you know, heart disease is the number one killer of all Americans. One in every four deaths is going to be related to heart disease. And when someone has stable chest pain, so I'm not talking about MI, the big MIs, those are going to go right to the cath lab or surgery, but when someone has stable chest pain, historically this would trigger a clinician to order a stress test, whether that be exercise, an echo, there's different nuclear scans, all of which have their right place within the medical field and can be very useful. However, specifically for coronary artery disease, these tests show areas of decreased blood flow in a particular area of the heart, or raw motion abnormalities.

Lauren ([12:35](https://www.rev.com/transcript-editor/Edit?token=oKBC9q_yJULPNYrltb2PE_km7L3pRPDhpHWZ56VHpfSqfGNIzdYpFjA1IHzxErq37rBoWTK280fQ8rx3iUqChXnFHOE&loadFrom=DocumentDeeplink&ts=755.37)):

But it's not clearly answering the question at hand, which is, "Do I have coronary artery disease that is causing my chest pain? Where? Which artery? Is it several? Is it just one? At what spot?" When you want to ask these specific questions, those tests really don't answer those questions. And in fact, 20 to 30% of the time when you go for these tests, they are inconclusive or can give a false reading. So that's pretty concerning. That was surprising to me, personally.

Jim ([13:07](https://www.rev.com/transcript-editor/Edit?token=sF1dHeqfHPQHKAyRO_cbzNEF4Tp8KmCBOb2GRuqB1pz1KbJCX2KHuwGd7L1KKPMBbTr4s7TjdaFx3VZnOUMTFumLx30&loadFrom=DocumentDeeplink&ts=787.17)):

I've heard that. I didn't know that was the numbers, but I've heard that about false readings and we've had family members that've had that experience.

Lauren ([13:13](https://www.rev.com/transcript-editor/Edit?token=1oofBHS4SeCu3PT3Jar49OSZsr67Xgc8TSLoyKEp74Ez6V10YBTgZsyatHJKfwdMjQEGcp-ueefdXyAujQf-naUWVl8&loadFrom=DocumentDeeplink&ts=793.71)):

Imagine you have this chest pain and they say, "Oh, we don't know what it is," or, "Looks great." Then something bad happens or looks bad and you end up with further testing that ends up being nothing.

So usually it starts with some type of non-invasive test. If the chest pain continues, then the patient would typically be get sent for an invasive cardiac catheterization. We're using needles catheters, it's usually in the groin or the arm, dye and radiation are administered. You shoot that dye and you can visualize the coronary arteries on a 2D image that looks like an x-ray in the cath lab. And that's often the gold standard of historically ruling out, that true coronary artery disease, yes or no.

Lauren ([13:58](https://www.rev.com/transcript-editor/Edit?token=ZUth-uc0K8rcBz0gNwkc47Ez2ZRbrTOKDLGtpBV3yxoG6PRPgTmsaYZ-wU3K-NJUyicXAeJTJxndh2pjp4IleLzvUKI&loadFrom=DocumentDeeplink&ts=838.02)):

Another surprising thing I found when I came to HeartFlow, 60% of the time when patients go for this invasive test, the coronaries are found to not be obstructed. More than half. More than half of the people going to get a diagnostic cardiac catheterization, either they find nothing or they find something that can't be intervened. So you have a ton of patients in a healthcare system getting tests that may not be helpful in their diagnosis for creating a treatment plan. And this causes a real strain on the patient experience, so they're getting bopped around from test to test, not quite getting their answers yet. Staffing, huge issue right now. Costs to the healthcare system, accuracy of the diagnosis, like you mentioned with your family member, and ultimately the outcomes. There is a problem that we are definitely trying to solve here.

Jim ([14:48](https://www.rev.com/transcript-editor/Edit?token=Gs9OxfH5Pq6i2c5bySOfC97jGyKHAEqfvSV5hL8iID2d53fNGW-E4sge9wiM74Y63RIaStUznvzI_pL3NxAPd-0p_Sk&loadFrom=DocumentDeeplink&ts=888.99)):

Sure, that's a great point. You mentioned the cost thing, and I know that's huge and I've been through personally, you go test after test after test and it's like, "Man, if only we could have skipped some of these." So I know we're getting to that. Can you explain to us how HeartFlow's technology, basically how it works and why it's an improvement to the historical approach that you just described? Thank you for that great breakdown, by the way.

Lauren ([15:13](https://www.rev.com/transcript-editor/Edit?token=P0acnOkG7cmhdIoM7bRdNrBew234J-LJQgWZ0dDN_GnmGpVrOX3ukejYbH2bWnwZcjmYmv-q14Rw8ODek56N1gtq7jM&loadFrom=DocumentDeeplink&ts=913.29)):

Yeah, definitely. So we walked through the patient journey to this point, the patient's gone... They have stable chest pain, a non-evasive test. Now they're on the table, naked in the cath lab and they're getting a cardiac catheterization. So the patient's on the cath lab table. Now the physician has injected the dye, they can see a visible narrowing of the artery. It still begs the question, is this the artery that's causing the chest pain? Because maybe there's multiple arteries being affected. So the traditional method would be the cardiologist would take it one step further using something called FFR, or fractional flow reserve. So imagine they float a wire through the narrowed artery invasively, so this is all invasively, going through the coronary artery, and they're able to... There's pressure sensors. They're able to test the flow before and after that lesion to see if there's a drop in flow. Is this lesion affecting actual blood flow?

Lauren ([16:13](https://www.rev.com/transcript-editor/Edit?token=FDG9zQe_c2ZODhiahgVcELUogXqXlJJbEb43NT82mFKbqS4Y3enQw_A8SnUvbLZcKu1XkgySncBSB6EcShnGn1oTJWA&loadFrom=DocumentDeeplink&ts=973.38)):

And there's been many publications that FFR has been established as a gold standard for figuring out the clinical significance of a narrowed artery, but albeit it's still invasive. So HeartFlow, it takes the coronary CT angiogram, so a CAT scan of coronary arteries, which is then analyzed by our proprietary software to provide non-invasive CT derived FFR. So we refer to this as FFR CT, and we can help physicians understand the physiology and clinical significance of a disease in the coronary artery now in a non-invasive way. So everything that we just talked about, that historical patient journey, can be condensed into one CAT scan, and we can get you so much information in one short visit.

Lauren ([17:05](https://www.rev.com/transcript-editor/Edit?token=77UlOIgTocFZqr-T0i5irEvRI5grlJPoHw_mkhpuNbA-7mT24kvTtLKUN2WlurUP6IP-rNS7C25Mq48lgMq5fPYpPD0&loadFrom=DocumentDeeplink&ts=1025.25)):

So the proposed new testing pathway, which has been... It's in the guidelines as well, is the patient undergoes a typical coronary CT angiogram. This is fairly quick, it's not invasive, your coronary CT is extremely accurate in providing the anatomy. So this has been proven. Your CT can show narrowing versus not narrowed arteries. Physician sits down, they're reviewing the images, and they notice a narrowing of 40 to 90%. At that point, he or she can request a HeartFlow analysis. So the raw scan images are sent to our artificial intelligence-based technology that creates a 3D model of the patient's arteries. So it's a combination of both artificial intelligence, deep learning, and people, because the next step is that trained analysts, human beings, review the model for accuracy. So at least two people, sometimes up to five, depending on how complex it is, will actually sit down, look at every lumen, look at every tracing that the computer has derived to say, "Is this accurate?"

Lauren ([18:17](https://www.rev.com/transcript-editor/Edit?token=dJU0Ia_NTNiq8TUQ-vggo7nqqWIdOHc_43xomop9eYscBcjErf7L8TxTpnCl5SZjTZoEx9RjZzLnYEIhXwBcH564RpA&loadFrom=DocumentDeeplink&ts=1097.52)):

And then the model uses some pretty high brow mathematics and computational fluid dynamics to quantify the blood flow in those modeled arteries. The completed analysis is then returned back to the hospital via the PAX imaging system and/or the EMR, the electronic medical record, within about four hours. And we even have the abilities... It's very cloud-based as well, so that you can also access it on a phone, an iPad, or any PC using our HeartFlow user interface, which is certainly securely stored. And then after that initial CT scan, there's no additional testing to get the HeartFlow analysis. That's really important. The patient doesn't have to come back in. We can just apply the technology to those who need it. And in about 30 to 40% of coronary CTs this will be applicable.

Lauren Jim ([19:11](https://www.rev.com/transcript-editor/Edit?token=cFmYIIuRObvZ3FlqwiDmhW1ZVX6P1_6IpKeupoIyx6P0NU_xbdglOtaXPmasKIMjUsmJotzNoT0HdSCeXHbeF6BxJ6Q&loadFrom=DocumentDeeplink&ts=1151.04)):

Okay, that's great. You mentioned the importance of human clinicians, that they're a part of the process, but I'm impressed with that four-hour timeframe and the fact that patients do not have to return additional testing. I mean, you're simplifying the process. Again, patient experience, the cost, less visits, less need for staffing. That's great.

Lauren ([19:30](https://www.rev.com/transcript-editor/Edit?token=TyG4Kn-ayhlC0RZ4Q6EslmyWEKj42Sr8AetjxF_22_NQv-81qZqfQFGkr2P-B_zHf2gIL7Fp7um6r8IzgJpzQu-FM68&loadFrom=DocumentDeeplink&ts=1170.33)):

It's awesome. And that's really been a testament to the utilization of the technology. The more people who want it, the more analysts that we hire, we train. We've really built a lot over the past just year or two and helping that turnaround time be so clinically significant. We even have a prioritization button, so if somebody wants it really stat, we can turn it around usually in less than two hours if they push that button. So we've seen some application to that for folks who want to use this modality in the emergency room setting for stable chest vein, again, but you can get your answers sooner than later in that setting.

Jim ([20:10](https://www.rev.com/transcript-editor/Edit?token=JSQPMSn_doUGj0LHrkpj2aCxVSu8yZOwoiwf02sI44Bw7lujZagONL1a_x49_GVSXucNl2aFwduK9FZdJuaAF4O1axY&loadFrom=DocumentDeeplink&ts=1210.83)):

Sure, sure.

Lauren ([20:12](https://www.rev.com/transcript-editor/Edit?token=-mOlVz0SIeYCVqgyQIiloGfxdUzerUhS0J5ySIZeDoKwEY4NBPSssHYY6g8deJQcOGHkg5ZR1vZ4xjuw1zLRkpgjvOs&loadFrom=DocumentDeeplink&ts=1212.27)):

So just to complete that story, a clinician now has information on both anatomy and physiology regarding patient specific coronary arteries. And it's amazing how those two do not always match. I guess I always grow up treating people post MI, I was like, "Oh, they had a 99% lesion, they got a stent, here they are." Well, when it comes to these lesions that are more 40 to 90%, that story isn't always a one-to-one match. In fact, stenoses that are 50 to 70% blocked, it's a coin toss. It's a 50/50 whether or not that stenosis is physiologically significant. So whether the blood flow is affected or not.

Lauren ([20:58](https://www.rev.com/transcript-editor/Edit?token=Vu9vfGk5wgM7hKo2weY35-3uxEMAZ4k96v1M8rmMfYKNb73HJSjN1jvMSLkWmYNQ30B7rhsqTeRQsN1QRrWmBfOpusk&loadFrom=DocumentDeeplink&ts=1258.05)):

And even with very visually narrowed arteries, like 70 to 90%, there's still a one in four chance that it's not physiologically significant. So the fact that those two things don't always match or they're discordant means that we really need information on both. And there is a risk, there really is a risk of doctors putting stents in people who don't need them. It's not a benign procedure, and ultimately what we are providing is the data for physicians to make the right decisions for the right treatments at the right time.

Jim ([21:29](https://www.rev.com/transcript-editor/Edit?token=zTns_2aPkIc4wofO1vORqhQgdi_-vAbadjA61M-rsp-lLV4CFhZnTYjjoXZ9P6_rWN1jRPRofe3kurwjuxhKzQybM4g&loadFrom=DocumentDeeplink&ts=1289.79)):

That's important. That's great.

Lauren ([21:31](https://www.rev.com/transcript-editor/Edit?token=HT2d5qI8upEcGnpGPX-E2OP7IkxKAmYCvEUO41pHNSACUXh_49WTAb8sSe1d7YybA77JxV1dAnQ1O-gUAXYsLt1ifiI&loadFrom=DocumentDeeplink&ts=1291.86)):

It's so important. It's really exciting to be part of it. And it's also backed by long-term studies with data out to five years. We have evidence from over 500 peer reviewed publications. It's recognized in the professional guidelines. Just last year in 2021, the chest pain guidelines were revised, I think for the first time in 10 years by the ACCAHA organizations. So now FFRCT, which is only offered by HeartFlow, is in those guidelines, and you may even hear the term CT first as a hot buzzword out there, and that's a result of the guidelines that getting that coronary CT scan is a level 1A recommendation for stable chest pain.

Jim ([22:15](https://www.rev.com/transcript-editor/Edit?token=gTGG4yvfzHDoAWi4xx8vM6fbV20GkqT5yth6H175ZBvhmW1vUSKBgZvyxfbGbwM06LAZnZ16v2hd8R4ivOV8y9XScq4&loadFrom=DocumentDeeplink&ts=1335.72)):

Well, thank you Lauren. I've seen those 3D models. I know you've shared on LinkedIn and I went to the HeartFlow website. It's great to have that breakdown and say, "Okay, how do we get to that point?" So that's awesome. Thank you.

If you're just tuning in, you're listening to the Healthcare Leadership Experience Radio Show and I'm your host, Jim Cagliostro. This show is sponsored by VIE Healthcare Consulting, a SpendMend company, which provides leading edge financial and operational consulting for hospitals, healthcare institutions, and other providers of patient care.

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So Lauren, on HeartFlow's website, it says, HeartFlow is revolutionizing precision heart care and committed to making technology that is transformational. Can you break down for us how HeartFlow is revolutionizing precision heart care and why you believe it's transformational? First for the patients, then also I'm passionate about the patients, but the hospitals as well. How is it transformational?

Lauren ([23:28](https://www.rev.com/transcript-editor/Edit?token=KBps1Fv328ec--2HIHViJjLL6J3jbsqEyLIlyt1oWMlkKej7zo0fK8UhNStqY_EDGjJ8ZSx7Az3odjKsXAPcBlhPzio&loadFrom=DocumentDeeplink&ts=1408.17)):

Okay. Let's see if I can tackle this one.

Jim ([23:29](https://www.rev.com/transcript-editor/Edit?token=gDzfZ_UjG4-L48cuadxpAY4iwaqAYWS83JQvX6eMunFt2dH2vsPLpibq69LA9IGKs8FuPCotCtUcKMWtzABkcinuhhI&loadFrom=DocumentDeeplink&ts=1409.82)):

I know, loaded questions.

Lauren ([23:33](https://www.rev.com/transcript-editor/Edit?token=VSH1y9ij-3lRZr6Cb7mYZCmCmLI5q4GjvYTAq5RLWmcQDoq5Q0eFPaftTNAvffezFcN34_11EvVgQL413uICFP48zjk&loadFrom=DocumentDeeplink&ts=1413.33)):

Yeah, we're patient centric because we offer the first and only test in the market that helps physicians give the patient answers about their heart disease in a non-invasive way. I imagine if you or I had chest pain, I kind of want to know the answers pretty quickly to what's going on with that, knowing what we know.

And my favorite part of the job, as you mentioned, is when a patient sees that model of their 3D analysis, seeing that visual, if you haven't seen it yet, just type HeartFlow into your browser, it'll pop up. Anyone can quickly note that the blue color coding of the arteries is good and that red is bad. Regardless of medical training, I think you can quickly look at that and pictures speak a thousand words. I think a 3D model must be, I don't know, a novel.

Lauren ([24:22](https://www.rev.com/transcript-editor/Edit?token=pkph0CzBirmyROSYrFJTHkxLIu12qf4Wa3b2K5RpUgxt7N4Mlvh1CKV-OBIV-crNhbkZXrXg1dvag9CB4XBE5LZRIwE&loadFrom=DocumentDeeplink&ts=1462.8)):

Imagine showing a patient this 3D model and saying, "Okay, for your medication compliance, how many of our patients start lipid management?" And then they just take themselves off. Sometimes it's showing them, "Here's what's going on. Here's why you need to be on these particular medications." So medication and health compliance, discussing care plans, and certainly even follow up to the primary care provider or that referring physician is impactful. These physicians are sending the patient for a test and it's wonderful to empower them to understand what's going on in those arteries and then be able to pass that along to the patient family. And we even take it a step further. We have a recent FDA clearance of two additional offerings, so we're not stopping at just FFRCT. We are going a step further. We have the roadmap analysis, so that provides support for a quick analysis of potential stenosis areas in an anatomical model. So it's like a quick read, if you will.

Lauren ([25:25](https://www.rev.com/transcript-editor/Edit?token=29gtnvlrLd1p2qqZwBVkvT8b6pBLL4wlhVV2QKWYM9yT59rTuK41s630XF4hD8X7w7Gs4KMIqFU-jcT9xA6vOfLwgz0&loadFrom=DocumentDeeplink&ts=1525.41)):

And then plaque analysis helps physicians to identify and quantify plaque in the coronary arteries. This is phenomenal. I think it's going to be a game changer. So we're the first and only company to offer a full analysis on your anatomy, physiology, as well as plaque — putting all those pieces together. So that's how we're moving the needle forward.

From a healthcare perspective, gosh, HeartFlow helps physicians to identify and prioritize patients who need to be in the cath lab versus those who may not need to be. It's transforming the cath lab from a diagnostic facility to really a treatment facility. And our recent global prospective randomized trial that we just were able to publish results, it's called PRECISE, demonstrated that you're 78% more likely, in fact, to find patients who need revascularization when using the CT first testing modality. And you're twice as likely to keep patients out of the lab who don't need an intervention.

Lauren ([26:33](https://www.rev.com/transcript-editor/Edit?token=6l8qLrebE0LKr_ijlw2DSBAtH7sqgTsE-U03yAvuuhZKDP5ClABLF1ra9f--WermwPilOI2GJga54FFzlxnE6JXRwv0&loadFrom=DocumentDeeplink&ts=1593.24)):

Especially in my MitraClip days, cath lab space can be a much-needed place to be. Let's put it that way. Everybody wants time in the lab. There's never ending news. Structural heart interventions, EP, everybody wants that lab time. So if we can put patients in there who absolutely need to be in there, who can get the help that they need and keep more of the diagnostics into the CT realm, that is huge, I think, for the hospital system. And it certainly doesn't hurt.

Our business model is considered a software as a service. So you are only charged if the physician receives our FFRCT analysis. There are no initial startup costs involved, and almost all hospitals already have a CT scanner. So it's optimizing the usage of that existing capital equipment. And to date, this technology's been adopted by more than 725 hospitals, including 80% of the top 50 heart hospitals in the US, and clinicians have been using our technology to reach more than 135,000 patients. And that number is just going to keep going up.

Jim ([27:43](https://www.rev.com/transcript-editor/Edit?token=eOW0GvA3jOlC25Cn1dgKViIvH7a7DrzaCXHLzRUc-xdaOIaceaTCXUFxaVOo1YFuWQithCAb2c56tXZbKt36HQX9E3g&loadFrom=DocumentDeeplink&ts=1663.2)):

You mentioned a few things there that I just wanted to mention that stand out to me. I mean, showing the image to the patients, that's something that I didn't really think about, but I really believe that when a patient can see that image, rather than you're just talking with them, telling them about it, nothing sticks. I talk to my parents all the time, "How is the doctor's plan?" Remember nothing. Right? But when they see that image, it really stands out. And I believe in terms of patient compliance and sticking with whatever regimen of medications or whatever you need to do, seeing that image I think makes a huge difference.

And then you also mentioned in terms of the hospital side of things, I mean, they have the CT scanner, they have the equipment, and it's the software as a service, and it's serving the patients, again, alongside physicians that are already there with equipment that's already there. If I understand it correctly, you're not eliminating the need for the cath lab, but you're making the process more efficient, if I can put it that way. Is that a good way of stating it?

Lauren ([28:38](https://www.rev.com/transcript-editor/Edit?token=nWjTBYxPEVQixlMIwcUJBcTnLEjwj-64o32QpU5oIRv_dwWNTF2iUtKQ8Xt-6T5pl_ugZ1mYmsXmKZOUgiUq7NvAElc&loadFrom=DocumentDeeplink&ts=1718.88)):

Definitely. Yeah, yeah. I mean, listen, we absolutely need cardiac catheterizations. That's an absolute necessity. But what we're doing is I think we're finding more of the right patients who need to be in there that aren't going to come back saying, "Hey, we didn't find anything. You didn't have to go." But patients who are in there who could really benefit from an intervention or who really need that second look. So it's more about increasing that efficiency from a zoom out perspective, from the overall cath lab efficiency, as well as the healthcare system.

Jim ([29:15](https://www.rev.com/transcript-editor/Edit?token=sHfWQwluQwYNhGX4Foq1Se8--q9X5OU0fodtHIXQTaamncK-QYi8k13FkizdmjAa6KoEF0Ube8pAlJxIaA-_fF9szAQ&loadFrom=DocumentDeeplink&ts=1755.18)):

Sure. No, minimizing waste of time or resources that in the end, "Oh yeah, we didn't really need this."

So Lauren, when it comes to advancements in medicine like this, like HeartFlow offers, do you often find a hesitancy among physicians, the physicians that you speak with or hospital leaders that you speak with? Why do you think there's often a hesitancy with newer technology like this?

Lauren ([29:38](https://www.rev.com/transcript-editor/Edit?token=vuci3lZYGiJTEHKi2e5v_i_fW9paHObJoYKDoT9EiGPWjWSDHnxptBMFd4pSF3lpb4C3D0lsSfJVL_tmugRJTioJz-c&loadFrom=DocumentDeeplink&ts=1778.49)):

And maybe it's because I'm coming into HeartFlow. They've been established for 12 years as a business, so I'm coming a little bit later. Usually what I'm met with is a lot of excitement or people already know about it, they want to know more, so I think we're in a really good spot right now. But in general, and historically, I think it personally sounds too good to be true. And human behavior is such that skepticism is the first thing. "No way. Is this real? Show me the data. I don't know." And change is hard. When people get set in the pattern of, "This is what I do when a patient presents with X, Y, Z," and now we're asking to change that human behavior. That can be challenging. But you may have heard this before, the phrase, "this is the way we've always done it," is the most dangerous phrase in medicine.

Jim ([30:24](https://www.rev.com/transcript-editor/Edit?token=zPZed_l9YzktOtqtMxk9ShTqZd-Al05f2pOiXsAv3wyY2enKYcM6MD44jhgqK-3KHGKWZIL3rXxJ5kxPGfzyAWPN0Jo&loadFrom=DocumentDeeplink&ts=1824.03)):

And the most expensive, we say, the most expensive.

Lauren ([30:27](https://www.rev.com/transcript-editor/Edit?token=RPBfQc7p2yubrLc3Z_X0Ir5bWq5B4wUK4a_HYiekL9nASbsl8Lk7vBtz8NWSBfeHwP0ttm1to1Xmc9Mqy9nYwcIyIko&loadFrom=DocumentDeeplink&ts=1827.21)):

Yes, there you go. We have to evolve in order to address this incredibly harmful issue of coronary artery disease in the modern world. The technology exists. It's my job, frankly, to make sure everybody knows about it. Thank you for the opportunity to be on the podcast. And this is ultimately why our founders from Stanford have invested so much time and energy into accumulating the data behind it, because science to validate the technology also really helps with adoption.

Lauren ([30:56](https://www.rev.com/transcript-editor/Edit?token=_boNyQnE89EutYb8O1WsdtLOxlpQQYA7e9caj-yrcblz182JnfqCmRYXJ6_qcKfVVepgDVLj5OWVLgllNSfjD9zM7GE&loadFrom=DocumentDeeplink&ts=1856.67)):

And then on the other side, when we talk about healthcare systems, I mean, it's not a secret that medicine in the US is a business. So some people when they first hear this idea, they think, "Oh, we're going to lose so much revenue from diagnostic CATs," or, "We just bought that nuclear scanner last year." Of course every hospital and imaging center is different, but we have many health systems showing a positive business story of increased interventions in the cath lab, increased cabbages, other halo effects of using the CT first pathway, and ultimately patients staying within the healthcare system because of the latest and greatest technology that their position and that their hospital offers. And it's great to know that HeartFlow is currently covered by Medicare nationally, and 98% of commercial payers in the US.

Jim ([31:46](https://www.rev.com/transcript-editor/Edit?token=HeV-4sl6luI-rKJwPXjrstVuMPr-djUPM-La45WrxkCF-kLa7qmnEmPuWVOmrPB-m9nKCjF3Kt_glVAcV7KVPNz5LKg&loadFrom=DocumentDeeplink&ts=1906.8)):

That makes a big difference. I know we had chatted about that earlier. And you're really bringing it together nicely that this whole idea of the science behind it, the data. Physicians are scientists, the healthcare workers are scientists, they want to see that data, but also the business aspect of it, and ultimately the patient care aspect. I mean, there's so many things coming together that you're discussing. Thank you for bringing that together.

In your experience, even prior to working with HeartFlow, in any of your experience, what do you think ultimately persuades physicians and hospital leaders to adopt and even embrace some of these newer technologies?

Lauren ([32:23](https://www.rev.com/transcript-editor/Edit?token=6WjUbZzxL-es5zSUbP_YMAgnykaGZn3eLM88wKLjQxV7OmQOsYtGDNTS_8Oy7N5_3NdacRdQdanMhLhPFwcMXMvp8Ik&loadFrom=DocumentDeeplink&ts=1943.19)):

I think for clinicians the science has to be solid, number one. The workflow must be easy. I mean, clinicians have so much on their plate nowadays in such limited time that it has to be efficient. And ultimately, adoption, in my opinion, seems to be based on the patient experience. The first time a clinician gets information on that suspicious lesion that's further validated by HeartFlow, FFRCT, they can feel confident in making their assessment and treatment plan. They can approach the patient and say, "See, we have a lot of information right here telling us you need a stent." Or conversely, "Hey, based on this, we saved you a trip to the cath lab, but let's talk about your lipid management to prevent further issues down the road." And that feels really good to know that we're helping physicians in crafting that right treatment plan with the right information.

Lauren ([33:15](https://www.rev.com/transcript-editor/Edit?token=WPkj4079a5OOvtY0i7TcUqPWdocxoejlBu71z_IGzTlo-4iGWe34ncIXlh4DtYaqAMxvOwcF7Q1LmeooKZnSZFI2rKY&loadFrom=DocumentDeeplink&ts=1995.69)):

For hospitals, it's probably a little different as far as what ultimately persuades them. I think one, meeting an unmet need in their community, should be number one. But sometimes being the first to bring something to the area or to market is a nice thing for hospital administration. We certainly have an opportunity to show them how workflow efficiency and cost savings to the organization could be beneficial. And that's really fun about my job is I get to interact with people at all different levels of the hospital to figure out what matters most to them all while serving the patients' best interest.

Jim ([33:53](https://www.rev.com/transcript-editor/Edit?token=H2a8hBRI-wq8XbEvbOvJTZRdSXpEyHjF9moFiylTwQTrV7vG4UOu1w_bR-hjoRuEORxjfJHMca_en8xeic90Egbl70A&loadFrom=DocumentDeeplink&ts=2033.31)):

That's great. And I know based on what you told us about your past and your experience, it's clear you come to the table with that solid clinical experience and knowledge, but then also you can discuss with them, "Hey, the business side of things, how does this help patients? How does it help clinicians? How does it help hospital leadership in terms of saving money?"

So any parting words for our listeners, Lauren? Anything else that you'd like to share before we finish up here,

Lauren ([34:18](https://www.rev.com/transcript-editor/Edit?token=IAcSW6lYsueN9y7LjHUv4XOfrb-aN73wi8UqsPHLsLM9XBuYtUDnVOjob7FPzMhZCiJLwUqWFcHaTOHgcOJBYjT6PYg&loadFrom=DocumentDeeplink&ts=2058.99)):

Well one, thank you again for the opportunity here, Jim. The only constant in our world is change, and that is so evident in healthcare. I would encourage everyone to be curious, to ask questions, to challenge the status quo. Whether you're a clinician or a patient, ask, "Are there other options for me? Why do I need this test?" I'm very lucky to serve as a consultant for a product that is good for the patient, for the providers, the healthcare system, dare I even say the world.

I think it's going to really transform how cardiology's practiced, and I'm honored, honored to be a part of it. So if you want to learn more, visit heartflow.com, and again, sincerely appreciate you and all your listeners taking the time to hear more about HeartFlow today.

Jim ([35:04](https://www.rev.com/transcript-editor/Edit?token=Ofx69wpZdjVZ8iUtU4H_KRS2xdKJCix_7S9vyYOVJWIoG3wmm-PbV2v1GkJvS3Ha1XAIyKXy5GLaUEDsx3n-M1yVTfY&loadFrom=DocumentDeeplink&ts=2104.23)):

Awesome. Thank you, Lauren. Thank you so much for being on the show today. And thank you to our listeners who spent time with us today.

If you have any questions about VIE Healthcare Consulting, a SpendMend company, or if you want to reach out to me or Lisa Miller, you can find us on LinkedIn. Lauren, you're also on LinkedIn. I'll let our listeners know they can find you on LinkedIn.

We at VIE love helping hospitals save money and enhance the patient experience, and we're hoping that today's episode gave you some new insights or ideas to consider and actually use in your career and your own healthcare organization. So Lauren, thank you once again for being on the show with us.

Lauren ([35:39](https://www.rev.com/transcript-editor/Edit?token=XhbemQ-7rS4KKxaK1VVa6Ta0PWVbUxPl_pIbyI5DuE02xCQK-8Us7kKKzxd67u39xck_nyILMIhW-CGYUM2OVXzvN3c&loadFrom=DocumentDeeplink&ts=2139.72)):

My pleasure, thank you.

Speaker ([35:41](https://www.rev.com/transcript-editor/Edit?token=KiX3Bx-5fKtF46d2X3cW-m5irgwi3Eo9i9rwxmq57_vi_KzlhJY7IsSRYYSo-lf304iPm4he0mct7BN91mJhl92TlN4&loadFrom=DocumentDeeplink&ts=2141.91)):

Thanks for listening to the Healthcare Leadership Experience Podcast. We hope you've enjoyed this episode. If you're interested in learning new strategies, best practices, and ideas to utilize in your career and healthcare organization, check out our website at the healthcareleadershipexperience.com.

And oh yeah, don't forget to rate and review us, and be sure to join Lisa and Jim next time on the Healthcare Leadership Experience Podcast. Thanks again for listening.

**A person smiling for the camera

Description automatically generated with medium confidence**MEET LISA MILLER

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Lisa Miller launched VIE Healthcare Consulting in 1999 to provide leading-edge financial and operational consulting for hospitals, healthcare institutions, and all providers of patient care.

She has become a recognized leader in healthcare operational performance improvement, and with her team has generated more than $720 million in financial improvements for VIE Healthcare’s clients.

Lisa is a trusted advisor to hospital leaders on operational strategies within margin improvement, process improvements, technology/ telehealth, the patient experience, and growth opportunities.

Her innovative projects include VIE Healthcare’s EXCITE! Program, a performance improvement workshop that captures employee ideas and translates them into profit improvement initiatives, and Patient Journey Mapping®, an effective qualitative approach for visualizing patient experience to achieve clinical, operating, and financial improvements.

Lisa has developed patented technology for healthcare financial improvement within purchased services; in addition to a technology that increases patient satisfaction through front line insights.

Lisa received a BS degree in Business Administration from Eastern University in Pennsylvania and a Masters in Healthcare Administration from Seton Hall University in New Jersey.  
She is a member of the National Honor Society for Healthcare Administration – Upsilon Phi Delta. Her book The Entrepreneurial Hospital is being published by Taylor Francis.

MEET JIM CAGLIOSTRO

Jim joined VIE Healthcare Consulting in 2018 and brings to the role over a decade of critical care nursing experience at highly regarded medical facilities across three states.

During that time, he observed both the ‘good and bad’ of hospital operations in a number of regions, giving him a unique insight and understanding which he brings to VIE Healthcare Consulting’s clients

MEET Lauren Marcheskie

Lauren Marcheskie is a District Sales Manager for HeartFlow, Inc. To date, this technology has been adopted by more than 725 hospitals worldwide, including 80% of the Top 50 Heart Hospitals in the US. Clinicians have used our technology for more than 135,000 patients to aid in the diagnosis of heart disease.

With over 17 years of experience, Lauren brings innovation and measurable success to clinical, education, and sales outcomes in the cardiac medical device industry.

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