



## **EPISODE 106: Leaving Surgery For a Career In Medical Devices**

**With guest Dr. Christine Mauro**

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CM: “For me, it's about listening to a little inner voice that said, ‘Even in spite of all of that, I think there is a way here. Let's try it and see.’ Now I'm years past that point and I have absolutely no doubts that it was the right choice for me.”

HF: Welcome to The Doctor's Crossing Carpe Diem podcast. If you're questioning your career in medicine, you've come to the right place. I'm Heather Fork, a former dermatologist and founder of The Doctor's Crossing. As a master certified coach, I've helped hundreds of physicians find greater happiness in their career, whether in medicine, a nonclinical job, or something else. I started this podcast to help you discover the career path that's best for you and give you some resources and encouragement to make it happen. You don't need to get stuck at the white coat crossroads. So, pull up a chair, my friend, and let's carpe that diem.

Hello, hello and welcome back to the Doctor's Crossing Carpe Diem podcast. You're listening to episode number 106. We have talked a fair amount on the podcast about pharma and the different roles physicians play in the process of bringing new drugs to market, but we haven't yet addressed the very interesting area of medical devices. Well, today's the day.

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I know some of you out there really like working with devices and have even come up with your own ideas for improving existing medical devices or for a completely new device that would be helpful to patients.

You may be wondering how you could parlay your interest and experience into working in this area as a consultant or an employee.

Today I'm joined by Dr. Christine Mauro who has been working in the medical device industry for over eight years. Dr. Mauro trained as a general surgeon and then went on to complete a research fellowship in vascular biology.

When she joins me in a minute, you will find out how and why she transitioned into working full-time in the medical device industry after finishing her fellowship. Christine is going to share with us the various ways physicians can contribute to the field of medical devices, what the day-to-day work can involve, which specialties tend to go into this area, some practical steps to get started and more. Without further ado, it is my delight and sincere pleasure to welcome Dr. Christine Mauro to the podcast. Hi, Christine. Hello. Welcome.

CM: Hi, Heather. It's really nice to be here with you today.

HF: Oh, this is a treat, and thank you again for coming on the podcast because this is an area that people have been asking about and I want to do them justice. So, I think you're going to be a great guest.

CM: That's great. I can't wait to talk a little bit and share some of my story with your listeners.

HF: Now, this is great because we're going to be learning about medical devices, but we're also going to be diving into your story and how you made a big decision to not continue along a clinical path. I think this will be valuable for a lot of listeners who may be making

this decision themselves. So, please take us back to this time when you were in residency and decided to do things a little bit differently.

CM: Sure. I think that's a good place to start. Now I have the benefit of a number of years of hindsight so I can kind of look back on my choices at the time and reflect. And at the time it was I would say a really difficult decision. I had done three years of surgery residency and then spent several years doing this research fellowship. I was very serious about an academic career as a surgeon/scientist, so surgeon and researcher, but really came to a point where I decided that I didn't think it was going to be in the cards for me. I knew that of all the mentors that I saw people in academia, they seemed extremely thinly stretched, people seemed very burnt out. I saw lots of examples of people who did not seem to have the balance that I really hoped to find in my future career, which at the time I was single, but I had thoughts of maybe having interest outside of work or having a family someday. And it just seemed some of those other aspects might be out of reach with that career.

And it was quite a difficult decision, but ultimately, I decided to make a really big career transition, which was I would say emotionally a huge step. And actually, going through with it was difficult, but I did decide to leave and took a job in the medical device industry.

HF: When you originally decided to become a surgeon, what was your vision of what that might look like?

CM: Oh, that's a good question. I thought surgery was fascinating and I knew that it was really challenging, which are both aspects that I think drew me into it. It almost looks like magic. I mean I remember being a medical student and the first time I was actually in an OR and I just was like, "I have no idea what's happening here, but it looks so cool." And it is. I still have a huge amount of respect for the field of surgery.

But I think it's one of those things where you learn more when you're in it than you know as an outsider ahead of time. And so, that really dawned on me as a resident that it's very intense. It's demanding. The lifestyle can be very unforgiving. There are many sacrifices that come with it as a career choice. I just wasn't sure if that was exactly what I was seeking. I'm not sure I can say exactly what I was seeking, but it became clear that maybe that was what I was not seeking.

HF: I can't tell you how many surgeons I speak with who reach out to me. That's a selective group who say exactly what you said, that when they got into training, started seeing how stretched thin their attendings were and how they didn't have a life, and they seemed burned out, that it started them thinking that this may not be for them.

CM: Yeah. That was certainly the case for me. One other aspect that I maybe haven't touched on so far is I really craved a high degree of autonomy and agency and knew that that was something I needed to have as a critical element in whatever career was going to capture my interest for the long term. And that was maybe in and of itself as a requirement, a bit of a departure from what I thought I could access in surgery. And I should say my husband is a practicing general surgeon, so I don't mean in any way to denigrate surgery. And I feel very close just by personal history and also by the fact that my husband is a surgeon to the field.

But I just felt like there were some other things out there in the world that maybe I could find and that would draw me in and that would end up putting me in a place of, I would say, greater fulfillment.

HF: When you decided to do this research fellowship after your third year, did you think you'd be coming back to finish the surgical residency and then practice?

CM: Totally. Yeah, totally. That was 100% my intention. This was a standard part of the training at the residency program where I trained. Everybody went into the lab and did

research. In my particular case, I was very serious about the research, was really committed to the idea of becoming a clinical trialist. I did an additional master's degree during my research fellowship, also secured my own NIH grant funding all in the name of becoming a real researcher as well as a practicing surgeon.

My plan was to come back to finish general surgery residency, and then to move on to vascular surgery fellowship. And so, ultimately, I would've ended up as ideally a vascular surgeon, clinical researcher, but instead I ended up where I am, which is in a very different place.

HF: Now, how much was it “push” and how much was it “pull”, having you change this direction?

CM: That's a great question. I think for me it was almost 100% internal. Meaning that there was nobody sort of knocking on my door saying, “Oh, hey, do you want to think about opportunities in the medical device industry?” I think all of the signs, especially when you're in training, are all just propelling you forward on the path, like the well-trodden path that sends you through training and you finish and take the boards and get a job, and then poof, there you are, you're a surgeon or whatever kind of physician you are.

There wasn't really a pull, I would say. It was more so me asking these deep questions around, “Am I going to be able to get what I think? Even if it's ill-defined and hard for me to say exactly what I'm looking for, am I going to be able to find what I really think I need as an individual from this career path?” And then ultimately concluding, “No, I don't think I am going to”, which is a very grave and momentous conclusion to reach for a surgical trainee.

HF: It is, and I know this area where you've decided what you've been doing isn't going to work, but you yet don't have the vision or even the opportunity of where you're going to go instead and make physicians so uncomfortable that they choose the well-trodden

path. And before we recorded you and I talked a little bit about your personality, you talked about how you're more comfortable with ambiguity and you felt more comfortable just being able to figure things out, which is not typically how we tend to feel. I just want to let the listeners know that you had a bit of a different mindset sometimes than we usually do at this precipice. So, how did you go forward from this place of, "I don't know what the heck I'm going to do. I'm closing the door, the next door hasn't opened." So, what happened, Christine?

CM: Yeah, that's a good way to characterize it. I would encourage anyone listening for whom this idea resonates to really give some thought to just sort of sitting with fear. For me, it wasn't like I wasn't scared or nervous about what was going to come because I didn't know. I didn't know. I did decide to leave residency without having a job lined up. I wasn't sure what my future would hold, which I think it was a big leap to make, but I also somehow found this place of confidence where I thought, "You know what? I figured a lot of stuff out in my life. I figured out how to get to where I am, and I somehow think that I can figure this out too."

And maybe it sounds a little funny, but I think that actually was the right attitude. It worked. It somehow worked. And so, in spite of the fact that it was really devastating to actually go and actually say the words "I'm going to be leaving. I'm not planning to come back. I'm not going to finish training." That's a hard conversation. It's a very hard conversation to have. You feel like you're letting people down, wonder if you're letting yourself down, your program, other people who have expectations. But for me it's about listening to a little inner voice that said, "Even in spite of all of that, I think there is a way here. Let's try it and see." I'm years past that point and I have absolutely no doubts that it was the right choice for me.

HF: What you just said is so powerful, and thank you, because it really is where we get to go into the unknown. We have to trust ourselves to be our own adventurer into an unknown

territory. It's what allowed people in the past to go exploring and knowing they might never come back.

CM: Totally, totally. It's not without risk. Actually, probably presents a fair amount of risk, but that's okay. I guess that's part of my message. It's okay, you can understand the risk and you can understand how to take steps so that it doesn't control you. So, that you're the one in the driver's seat.

HF: Love it. So, you're in the driver's seat and you ended up going into medical devices. Just so the listeners, kind of a sense, what does a physician even do in this area? Can you just give us some examples of how a physician might be involved as a consultant and even as an employee, and then we'll get into more details?

CM: Sure. Yeah. I've seen numerous physicians working in industry in my years and across a couple different companies doing everything from working as a chief medical officer for a division, that would be somebody who's a full-time employee doing procedural training. Sometimes devices are new to the market or there's a new procedure that a product is part of. And in order to increase adoption, they actually need physicians to go out and train other physicians. So, there are people who do that on how to do this new procedure. A lot of space in medical safety, which means things like post-market vigilance, looking at event reporting or complaints that come in around our products and trying to do medical risk assessment, looking at whether or not the devices might create potential for injury in patients, and if so, what do we do about that? Characterizing that, seeing physicians in clinical roles, looking at clinical trials and clinical data, which is sometimes part of device requirements for keeping products on the market.

There are people who are not fully employees, but who are external consultants, sort of just here and there who do some of these activities and maybe kind of a piecemeal fashion and just on contract basis. Or also there's sometimes people who are more closer to like the R&D teams who offer tips on design of new products. People who are

actually using them clinically in their practices in the OR and might want to give feedback if there's a new version of a device coming out, they often need validation labs, which have to involve surgeons. So, there are certainly physicians participating in that type of thing too. I would say there's a fair range of opportunities.

HF: How would someone begin to even look into opportunities? For example, say it's an orthopedic surgeon who wants to do something nonclinical with their expertise. What are some possibilities?

CM: I think the medical device field really lends itself most closely to people who are in procedural or surgical fields. Ortho is a good example. Many medical devices in ortho are also in interventional cardiology, for instance, and other procedural or surgical fields.

But for this ortho person, for example, I think that the actual easiest way is to just find a contact from a company with whose products you already work, which might mean even the sales rep. So, if you're practicing and you have a relationship with a rep from the company, that person to the natural point of contact will sort of give you a door into the company and might be able to connect you. If you have an interest in consulting with some of the teams internally, say the engineering research and development team or post-market surveillance team who might actually be able to put you on contract and start giving you some opportunities to work with the company. That's the easiest opportunity. Now, there are jobs that are posted if you are looking for something full-time, but I would say those are a little harder to come by.

HF: So, you could speak with your sales reps. Does some medical science liaison too come into play here?

CM: For sure. Yeah, I didn't mention that earlier, but there certainly are also physicians working as medical science liaisons, which means they basically understand the literature inside and out for a lot of the products. And there are products who are very

scientifically complex and actually go out and work with customers, hospitals or surgeons and answer questions or talk about the latest research on products. That's another good opportunity.

But to get your foot in the door, networking, I'm sure this has been brought up before, because this is like a tried-and-true strategy, but networking really helps. But I also think if you can find somebody, if you sort of target the companies in your field, like if you're ENT and look for companies that actually make products that are used in ENT and see if you can find a way to reach somebody and just start a conversation and say, "Hey, look, I'm here. I have this clinical expertise. I would love to start participating in some way, shape, or form."

HF: And who might you reach out to?

CM: That can be a little more difficult to find, the actual people who work for the company, which I think is probably your ultimate goal because those are the people that can actually make this happen. But if not through the sales force, you might try LinkedIn, you should be able to identify people on LinkedIn, who actually are employees. You might even find some physicians who are employees at a company of interest and just be able to contact them through the platform.

HF: I think that's a great suggestion because you can go on LinkedIn, you can search the company, you can look at the employees, you can put in a physician or MD, DO and see if people come up and they might also be in your alumni network.

CM: Yeah, that's true. Yeah. It's about doing the searching. Putting the work in. That's a big tip. I said this earlier, but you sort of need to be in the driver's seat and actually go out and try to find these things rather than thinking. In some rare cases, somebody might knock on your door, your rep might say, "Oh, hey we're looking for you Dr. X."



HF: Trick or treat.

CM: Yeah, exactly. Right. But that would be more unusual.

HF: All right. Well, I want to talk a little bit about what you might be doing day to day on some of these jobs, but before I do that, I want to take a quick break. Don't go away. We'll be right back.

It makes me happy to share free information with you such as this podcast. If you'd like to have additional free content, you can go to the Doctor's Crossing website and check out the freebie tab at the top of the page. Here you can access a downloadable career transition starter kit, as well as guides on topics such as interview prep, resumes, chart review, telemedicine, pharma, and medical writing with more on the way. If this sparks your interest, you can find these resources under the freebie tab at [doctorscrossing.com](http://doctorscrossing.com). Now, back to our podcast.

All right, we're back here with Dr. Christine Mauro. We're talking about medical devices. You mentioned some different jobs and positions that physicians have. I know the day to day could be different, but can you give us some guidance on what you might be doing in your job if you're in one of these roles?

CM: Sure. I think if you are more of a field supporting role, which would be like an MSL or physician trainer then obviously you're actually out and you might be in the hospital, might be in the OR actually working with clinicians. But for many of the other jobs, including my own job, it's essentially like a desk-based job. That means really sitting in front of a computer for many hours and doing a lot of video calls these days. And so, calls are back-to-back-to-back often. And so, lots of time in front of the computer. I would say in a normal year, I would also be traveling a fair amount. Maybe going out and meeting divisions. Right now, I would maybe do more internal travel, but in the past, in other roles, I've done a lot of external travel, going to conferences, professional society

meetings, customer visits as well. But right now, we're sort of still in the post-COVID phase where there's just not a ton of travel happening.

HF: Do you find it to be a 40 hour, 08:00 to 05:00 kind of job?

CM: I would say it is at times. And then there are the moments of firefighting that tend to creep up, which the time demands. It may in those cases become a little more intense and then it kind of creeps up. But all in all, I think the schedule in comparison, I would say is much kinder than say what I see my husband doing as a general surgeon. There's no call requirement. My job conforms to the contours of a business day by and large.

We work with people all over the world. Sometimes you might have a very early call if you're talking to somebody in Asia or something like that, but I don't feel that's too much to ask.

HF: When you think about going into a career, we go into medicine often because we think it will be fulfilling to help patients and save lives. What do you find fulfilling about this work?

CM: I think it's the same concept, but it's done in a different scale. I spend a lot of my time doing medical safety work, so thinking about what happens if devices are not working as intended and what the consequences are for the patient and what the device company as a manufacturer might need to do about that. And it's really all about putting the patient first and looking out for the patient's health and best interests.

I'm guided as much by integrity and by putting the patient forefront now as I was before. It's just that now I'm not thinking about one single patient in the OR. I'm thinking about all the patients in whom these devices are used. So, it's almost become magnified in that sense. But that's something I take very seriously, and I find it very meaningful. It's a very powerful concept that I really believe in.

HF: Are you able to give an example of how your involvement or company's involvement has helped change how a medical device has been used?

CM: Yeah. We certainly within the medical device industry and pharma and every regulated industry part of doing business is actually doing recalls when necessary. I think maybe without getting into too many specifics, I'm part of a team that actually considers all the recalls that come through or potential recalls that come through for the company. And so, we really sit down and debate in an appropriate way without any consideration where I am for commercial interests or costs or anything. Like, "What's the right thing to do? Does this device need to be corrected? If so, what does that mean? Do we send technicians out and actually fix the parts in the hospital? Do we put additional warnings on the device? Do we actually have to stop marketing this device?" And in an extreme case could be that we're no longer convinced that the device should be used on patients.

And so, I have been involved over the years in many, many, many of those discussions, and I really feel like the net result is that we have made patient care safer.

HF: Now, if a physician is listening and they're wondering, "Is this something I could do?" We talked that it is important to be a physician who usually uses medical devices in some capacity, however, do they need to have a special research fellowship like you did or experience in clinical trials? What are some of the other requirements if there are them?

CM: Yeah, I don't think it's necessary to have much of a research background or to have an additional master's degree or MPH or anything of that nature. I do think it's very helpful to have an engineering orientation, maybe not an absolute requirement. I'm not trained as an engineer, but I work with engineers almost constantly, at least on a daily basis.

And so, the ability to think in those terms and sort of think mechanically about how the devices work and actually interface in the human body is where I spend a ton of my

time. So, I think physicians who are comfortable with that way of thinking and working would be successful.

HF: All right. Another important question we're often wondering too is as a surgeon, you probably were looking at a certain income. Going into medical devices, are you able to share a little bit about compensation?

CM: Yeah. I can speak in general terms, but just to give your listeners an idea, if you are working as a consultant, we do attempt as best as possible to pay fair market value rates. So, your hourly compensation rates are based on training and background and should match your expectations as far as what you're paid on an hourly basis.

For full-time employees, I would say the base salary does not compare as well to what say a general surgeon would get paid. It all depends on the grade in which you come into the organization. And the company HR people have this very well defined, but if you come in at say, like a medical director level, which might be sort of an entry level point of entree into the device industry, I would ballpark, and again, these are always ranges, not from numbers, but something like \$250,000 annual compensation as your guaranteed compensation. In addition to that, there is variable compensation that comes in the form of bonus, which is generally something like 20% at that grade. Annual bonus, plus a stock option grant of around this roughly the same amount.

So, it's not salary only, it's salary plus bonus plus equity. And that makes your total compensation for the year. All told, I think it ends up being... Actually, we'll say not discouraging for physicians.

HF: Absolutely. And this is similar to what we've talked about for pharma, that especially if you're in more of a primary care specialty, you often go up in your salary and it can keep increasing as you grow in the company. And we're getting close to the end here. What

are some things that I might not have thought to ask you that you'd like to share about the medical device industry?

CM: I think it's really fun, actually. In contrast to the pharmaceutical industry, this is just some personal reflection. I think the device industry is maybe less mature as an industry, also less mature in how it uses physicians within its ranks. But that means that there's actually a lot of opportunity to inflect and influence and change things, which is what I probably love most about my current job. I'm actually building a corporate clinical function where one didn't exist as a degree that I thought that it might. And so, just to have that opportunity to really put my stamp on something and also have the freedom to do that, I think is somewhat unique in that the device industry is changing so fast that these types of opportunities are open. I think it's really cool.

HF: Could someone who has an idea for a device, like, "Oh, I think this could be really great?", could they potentially reach out to a company to see if they were interested in working with them on an innovation?

CM: They can, and physicians often do, and there are business development teams who can have that conversation and take your information or take a look or see what stage you're at and give you some feedback. Now, I will say, and I don't want to be discouraging, but oftentimes companies want things to be pretty well along, and that often means have a regulatory clearance, which is a pretty big bar to clear before they will seriously show interest or want to really work with you. But at a minimum, definitely you can start to have the conversation.

HF: Well, wonderful. This has been a lot of fun, Christine, and your story I think is inspiring just to show that you don't have to just continue on the conveyor belt if the conveyor belt isn't headed in the direction you want to go to. Any last thoughts about transitions from your own experience?



CM: I would be another voice of encouragement. I'm an example. I'm sure there are many others that you've already interviewed, but of somebody who actually went through with it and found it to be the right choice. I have never looked back and I have never regretted it one single time. And so, I guess from the other side of the door, I would just say, yeah, if this is something that is really speaking to you, I would say really give it some serious thought and maybe go for it.

HF: Well, thank you. I'm glad it's worked out so well for you. I can tell that you really love this area and thanks again for coming on the podcast.

CM: Sure. Thank you. This is great.

HF: Wonderful. Okay, guys, thanks so much for listening. I hope you feel inspired to follow the path that's calling to you. And don't forget to carpe that diem. I'll see you in the next episode. Bye for now.

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Podcast details

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