Chronic Illness, Misdiagnosis & the Truth About Tick-Borne Disease with Dr. Susan Marra Transcript

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Podcast Introduction and Guest Welcome

Welcome to the Doctors Making a Difference podcast, where we help physicians to be empowered with the tools they need to successful in medicine, in finance, and in life.

Join us as we highlight doctors and other professionals around the world who are making a difference. Today I'm pleased to welcome Dr. Susan Mara. Dr Marra is a naturopathic doctor who has done extensive work in Lyme disease and she has more information on this for us as physicians and I am really excited to hear about it.

And it sounds like she's done a lot of work and am pleased welcome you. So Dr Mera, would you mind introducing yourself to our audience and telling them a little bit about your journey?

Sure. So my name is Dr. Susan Merrill, and I've been practicing for 27 years. I have a bachelor's and a master's in psychology, but not the Freudian psychology.

More like psychobiology, the way that the mind and the body interact. I had thought that I was perhaps interested in going into neuroscience. And so my first real job was working under Tom Insel at the NIMH in Bethesda, Maryland.

This was way back in the 80s.

Dr. Marrau2019s Background and Path to Naturopathic Medicine

So then when I got there, I I thought, I'm not sure that the lab is the best place for somebody like me because I am a little bit of an introvert, but I too bubbly for the Lab bench.

I was a pain in the neck to the people. They just wanted to do their work. Well, you found where you belong. That's great. And then I happened to come out to Seattle to visit my sister Lauren.

She told me of this naturopathic school, Bastyr, which at the time was the premier natural medicine school really in the world. And I went to look at it and I loved it.

I thought, this is who I am. So I applied and got in and did the four years. Then I got out and joined a practice in West Fort, Connecticut. and I started seeing all these patients and they had strange symptoms.

They had migratory joint pain, migraine headaches lasting for seven days, severe, SEVERE PMS, gut dysbiosis, all kinds of things. they weren't isolated.

So in a single patient, you saw disturbances in more than one organ system. And I thought to myself, something is wrong here, I know something's wrong.

I also tend to be very intuitive. So for me, if something doesn't feel right, it's not right. So I called doctors all over the area and I asked them, you know, are you seeing this?

What are seeing? I finally found a doctor, Dr. Bernie Raxlin, who happened to be a pioneer in the field of clinical diagnosis of Lyme disease. And he said to me, he says, You're right.

He said these patients have chronic infection. They have Lymedisease and co-infections. And I thought, you know, from school, we only had maybe three sentences about Lyme disease, about vector-borne illnesses.

It wasn't emphasized at all. And that was in the mid-90s, so like 30 years ago. yikes, you know, I don't really know anything about Lyme disease. And I started testing all my patients, and I would say nine out of 10 patients came back positive for Lyne.

Now remember, Westport, Connecticut is about 40 miles south of Lyde, CT. Lymed Connecticut, is where it really sort of blossomed. So I said, oh, All right.

Well, I got to get trained. So I joined ILADS, the International Lyme and Associated Diseases Organization, which is not the IDSA.

Recognizing Lyme Disease in Patients

The IDS is the Infectious Disease Society of America, Which is a more traditional way of looking at infections. And I work in the more holistic… I guess you'd call it alternative.

I don't call an alternative, but it's clearly not mainstream. And then I arranged to work with Dr. Richard Horowitz in Hyde Park, New York, because I got a preceptorship through Turn the Corner Foundation to sponsor me.

And I also did work for six years with Charles Ray Jones in New Haven, and he was the world-leading pediatric Lyme specialist. So I basically did a residency, essentially, with both of them.

Now, obviously, A residency in a hospital is different, but I mean, being immersed, absolutely immersed in the topic for six years, you come out the other end knowing something.

Absolutely. Right. So then where did your path take you after that? Well, unfortunately, I lived in Westport, Connecticut, which is highly Lyme endemic.

There's probably a member of every household in Connecticut that has Lymedisease. And I had a beautiful yellow lab and she would jump up on my bed. I'm pretty sure that a tick got on her.

And then it jumped onto me and that's how I got Lyme because I already knew about LyME. I was already practicing LyMe. But it's so prevalent there that you just can't stay away from it.

2000, I got Lyme disease and also Bartonella, which is a co-infection. And I lost the vision in my right eye for six months. I had to go on IV antibiotics and oral high dose prednisone because the pressure in the eye was so high, they were afraid it was going to burst.

They did these therapies and then I came off the prednisone. I went on to oral antibiotics and I got much, much better. My vision returned. It's not as good as my left eye, but it's fine with glasses.

I would say that it is not cured in me. I am in remission. And what I mean by that is if I have a really big stress, like a move or a death of a parent or death a sibling or anything like that, I will relapse and symptoms will slowly creep back in.

But I know what they are, so I right away, okay, we've got to get this under control. This is very typical of tick-borne illness. And it's most likely because in a stressful situation, and I mean like high stress, like losing your job, moving, you know.

The body becomes acidic. It's largely in an acidic state. And those organisms flourish in acid and sugar.

Personal Lyme Infection and Recovery

They love sugar, Bardnell loves sugar and spearketes, Raleigh-Bergdorferi, they like fats. That's one of the reasons why there is neuro-lime and neurobart is because they cross the blood-brain barrier and get into the brain and cause encephalopathy and causes a myriad of different cognitive issues like poor memory, brain fog, inability to

make decisions, impaired executive function, emotional ability, things like that.

You can speak the language of patients. You could speak to the languages of caregivers and doctors. Like you had studied it, then unfortunately contracted it yourself.

Obviously, you stayed engaged if you've done this for 27 years. So, I'm just curious about what you have seen evolve over that period of time as far as recognition and diagnosis and treatment modalities.

So the recognition of tick-borne illness is far greater than it was 27 years ago. In fact, just this past Sunday on 60 Minutes, there was an excerpt on some research that's being done on Nantucket Island, which is on the East Coast, and just off of Cape Cod.

And they're doing research looking at genetically modifying the white-footed mouse. because that is a very large vector on the island of Nantucket and the research hasn't started yet, but that's the plan.

Well, that a big deal. Very, very big. So Martha's Vineyard and Nanduckett are two of the most endemic places in the world for Lyme disease and tick-borne co-infections.

Well, like you say, we've gone from barely recognizing two words, three lines about it in your training to your job, you know, became… lots about it.

And now we're talking about genetic modification of the vectors. Have you seen any other advancements in the world of, like I say, of diagnosis or treatment in line?

I have, yes. Yes. Why? The tests have become much more sensitive. The laboratory that I choose to use is called Digenics. It's in Palo Alto, California, and they specialize in tick-borne illness.

That's all they do. And the tests have become more and more sensitive as the instruments have became more precise. And so you can do a myriad of different tests.

You can look at antibodies. You can look at PCR, polymerase chain reaction, which actually identifies the DNA of the offending organism. Or you can do a FISH test, fluorescent in situ hybridization, where you actually visualize the blood cells.

And if there is babesia in there, if they're spartanella in their, and if spirochetes in the, then you see that. That's good to hear. A lot of times we rely on older style tests, which it's nice that we have had all these different generations of tests.

Advances in Testing and Diagnosis

But if it was exclusively antibodies, it is challenging because you have IgM, you IgG, and sometimes that doesn't reflect the chronicity of the disease or you don't know how recent it.

You're correct. isolate it from a PCR sample and say, hey, we have genetic material from these microorganisms that is still present somewhere in this person's body, that certainly lends some specificity to your diagnosis.

So let me just say you're right with the exception of this. There has been an argument that PCR is perhaps not the best test because you cannot tell if the organism is living or not.

Oh, that's a good point. If the, if, the organ is dead, then you're going to pick up the DNA, right? It's dead. It is not pathogenic to your body. Although then the other side says, oh, no, even the remnants of the bacteria have peptidoglycans on them that are sort of toxic to the body.

So there's a lot of need for research. And I'm actually on the board of two organizations. One is called Global Lyma Alliance. and they're sort of the premier nonprofit organization.

And what they do is they raise money to then grant certain scientists research money, to look at certain questions. Then the other board that I'm on is the board for Dr.

Horowitz's nonprofit foundation. I've been on these boards for five or six years now, and we meet quarterly and talk about research and what do we think needs to be done.

So it's, I think, a really good thing to help continue to move the ball forward. Oh, absolutely. I'm a primary care doctor, so educate me a little bit.

What would you recommend ordering if I have someone who comes in with a multitude of symptoms and says, hey, think I may have been exposed to Lyme disease.

We've kind of got the traditional teaching of what we've done with antibody-based diagnosis, but I'm curious, what would you recommend if you say what's the initial workup for somebody who comes in and says, do I have this or not?

Okay, so first of all, 27 years ago, when you would test a patient, more than 50% of them would only have Lyme. Now, I only one patient in my practice who just has Lyne.

Everybody has a multitude of co-infections, and they can range from Bartonella, Babesia, Ehrlichia Anaplasma, Q fever, Tularemia Rocky Mountain spotted fever Powassan virus, Heartland virus Bourbon virus I mean relapsing fever.

I mean, there's like 16 or 17 vector-borne illnesses that we know are a problem. And so depending on the myriad of symptoms that a patient has, you would choose the correct test to look at that.

For example, If somebody came to you and they had night sweats, they have air hunger, and a pressure headache that felt like their head was in a vice, those are all signs of a babesia infection.

I use the babesy antibody test and the Babesya fish test. Okay, I used both of them. And you just sign up for an account with Digenics. And their phone number is 800-832-3200.

Sign up, they'll send you test kits and then… You can take a look at all the different tests that you can order. You order per pathogen or you order bundles.

And I typically order bundle just because of who I am. I'm pretty heavily sought after for what I do because I've been doing it for so long. So most of the people that come to me are really infected and really sick.

Like you said, most of your patients have this and you found co-infections with these precise tests. So another question related to the practical part of it is patients come in and a lot of times they have limited insurance or things like that and they don't have the ability to pay for expensive tests, how often are these tests covered by insurance?

It depends on the insurance company.

Insurance, Costs, and Access to Specialty Labs

There are some insurance companies that pay really well. Medicare will pay for igenex, but some also will not. So it really depends on the person's type of insurance that they have.

What happens is they'll give you a super bill. They'll give you a super bill for what you paid for in the test, and then you can submit that to insurance and see if your insurance company will pay for it.

Sometimes it does, sometimes it doesn't. Ideally, patients with health savings accounts, could they use those funds to help cover uncovered tests in this regard?

Is that used as like a credit card? You can. I mean, health savings accounts come if you have a high deductible insurance plan. And with that, you can put money aside that is earmarked for payment of medical bills.

various things that are kind of considered medical, but are not covered by May insurance. And if you don't know the specific answer to that, it's okay.

I'm just curious because a lot of times when I start ordering, yeah, when they order PCR tests and things like that. If they're not cover, my patients always come back and complain like this was a $900 test.

So I was curious, you know, if come across that much. No, it's a huge problem, and unfortunately, you know, It's not accessible for everybody because of the cost.

But I'm not in charge of that. If you run a person's blood through LabCorp or Quest, the likelihood of the test, which is an antibody test being positive, is very low.

Because those labs, they don't specialize in the identification of tick-borne illness or pathogens. They're a general lab, right? And so, Hygenics has really perfected the precision which with, they can identify tick-borne illness.

And there are other companies as too. Armin Labs is a really good lab. T-Labs in Gaithersburg, Maryland, those are probably the two other ones that It might be useful to doctors, but the tests are expensive.

I mean, to run a comprehensive panel for tick-borne illness throughigenics, it's $1,970. Yeah. And that's on par with what I've discovered on most PCR, you know, when you're getting down to that level and they're expensive.

So that is why I was asking because again, most of the people who listen to this are physicians and are saying, okay, I want to order this test because I have somebody with these crazy symptoms, this constellation of symptoms that makes me think of a vector borne illness.

But then that becomes kind of rate limiting steps. behoves you to either check insurance or have the patient check, insurance, or possibly like this health savings account deal for patients who have high deductible insurance plans.

That's interesting to see that, and I bet that's kind of developed over the last 27 years. So, you know, I have never taken insurance and there's a reason for that.

I didn't want to get into the controversy of whether or not what I was seeing was chronic Lyme because it's highly controversial, highly. And I didn't want to get into that.

That's not why I went into medicine. I have no desire whatsoever to be convincing anybody of anything. Right? I want do the right tests. And that's what I focus on.

Yeah, you're not going to be abrasive with somebody.

Treatment Options: Antibiotics, Antiparasitics, and Herbs

You're trying to help patients. That's really what we're all committed to do is help patience. But no, a lot of medical doctors, I've been called every name in the book, charlatan, fake, all kinds of things, because they don't understand what I do.

And so they get a little bit irritated when they don't understand. And, you know, my response to that is, well, guess what? I don' understand cancer, but I do call these people bad names, right?

Just because someone is looking at something a different way doesn't mean they're wrong. That's been my experience, and I've been very grateful that I have been a little bit rebellious, silently though, not making a big ruffle, but just trusting my gut and just seeing like, something just doesn't feel right here.

It's not right. I know it's all right, I would say 99 percent of the time I'm right now. Now remember, that's the only kind of patient that i attract.

i'm not a general practitioner. So people will Google their lists of symptoms, right? And then recently they've been putting it into chat, GPT, and perplexity, as somehow they're coming up with my name.

So now it's like the quickest route to me now is my website, drsousanmera.com and there's a plethora of information on that website, which I've been working on for 27 years.

So it's got all kinds of stuff, videos, it has got financial assistance information. There are some organizations like the Limelight Foundation that will grant money to pay for children's testing.

So there are some, they're on my website, there's lots of blogs and articles, things like that, to help patients familiarize theirself in a watered down fashion, right?

So that they can understand it, because you have to meet the patient where they are or they'll not gonna get it. Right. Another question on this is, again, your career spans multiple decades.

What have you observed about the treatment changes? Certainly we've had different antibiotics and different things that have been developed during that time.

Have you seen any more specificity toward treatment of vector borne illnesses develop over the past three decades? Yes. There's been a couple of, obviously, the antibiotics, doxycycline, minocyclin, amoxicillin, zithromax, biaxin clindamycin, rifampin.

Yes, all of that. But there's been in the last, I would say, 10 to 15 years, there was a drug called disulfiram, which is actually used in addiction. It's shown to be very effective in some patients to kill the spherarchy.

The problem is that disulphiram has a lot of side effects, one of which, is pretty severe neuropathy. And these people already have neuropathy, so why are you gonna do that?

But some people do well on it. Another drug that I use a lot in my practice is methylene blue, which is actually a dye. And I do get it from a compounding pharmacy, and it is rather expensive.

But that drug, for whatever reason, is very, very good at crossing the blood-brain barrier and getting to the crevasses, I call, of where these organisms live.

It's especially Bartonella, but also lawn. So Lyme and Bardenella are very much affected by the presence of methylene blue. The downside of methylene blue is it will stain your toilet bowl bright blue, bright, blue and it's difficult to get off.

So that's another issue. And then another drug called Dapsone, And Dapsone is a drug I'm pretty sure was used originally in leprosy. And my mentor, Dr.

Richard Horowitz, is the person that identified its use in tick-borne illness. It's wonderful at really treating Lyme and Bardenal and Babesia. Especially Lyme and Bartonella, however, I don't like to use that drug.

People develop methemoglobinemia very easily. They have folate deficiencies. It's just, it's really risky. So I do not like use the drug unless I absolutely have to.

There's another drug called tefenequin or ericota, which is an antiparasitic and it's very strong and works against babesia. Babesias is intracellular red blood cell parasite and looks like a multi-cross in the red cell.

And, you know, things like mepron, malarum, coardom, Plaquenil, albenza, the anti-parasitic drugs can be very useful against Babesia. However, Babiesia is becoming more and more resistant to medication because more

people are getting it.

And it's an epidemic in New York. New york, Marthas Vindert, and Nantucket, I think, have the highest incidence of babesia, second to Slovenia in the world.

In the World. I mean, it's very bad there. And anyways, of this drug, tefenequine, which has been on the market for a long time, but it has a new application now.

This one you also usually have to get from a compounding pharmacy and you start with a dose of a hundred milligrams twice a day for three days. Then you do a 100 milligrams once a week.

So it is a really strong drug. You have to measure the G6PD before that, same with methylene blue, make sure the glucose 6-phosphate dehydrogenous pathway is normal.

If it's not, you cannot use those drugs.

Personalized and Epigenomic Approaches to Care

You will have a problem. So there's goods and bads about all these drugs, but if you look in medicine, that's true about every drug. That's about cancer drugs that true, about the satin drugs it true.

About antibiotics, it is true that every, every drugs has goods. I'm just trying to sort of give you the playing field. And you talk about the side effects with your patients and say, look, here's what we know can happen.

Then you help them make a decision about what they want to do. Some people don't want go on antibiotics at all. They want just do herbs. And that's where being a naturopathic physician is really in my favor, is because we're well-trained in that.

And there are lots of herbs like teasel, Japanese knotweed, andrographis, oregano, thyme, wormwood, walnut that are very effective at killing these organisms.

The difference is that it takes much longer to treat a patient with multiple tick-borne illness or complex chronic illness with herbs than it does with the antibiotics.

Well, I always tell patients little solutions for little problems and big solutions, for big problems. And I think that's because a lot of patients, you know, buy all sorts of stuff, sometimes under the advice of some of the training and other times just what they've Googled and purchased.

You know and most of time if it's harmless and I say, well, if a little solution for a problem, go for it. If you're trying to treat stage three hypertension with something that is ineffective, like I'm not going to recommend that because you are going toast your kidneys.

But we just kind of have to match the treatment to the disease. And it sounds like you do that with your patients. Oh, I do very, very personalized medicine.

Very. I used to actually look at the genome. Then what I found was that, let's say, for example, the patient had the histida gene or the HNMT histamine N-methyltransferase gene.

But they didn't have allergies. They didn' have an MCAS response. And I said, what's going on here? And, I realized that what it is, is that in that particular patient, the antigen is not activating or not turning on the histamine genes.

So that's why I was talking to you earlier about how tick-borne illness is very much an epigenomic disease. And epigeonomic meaning that the actual pathogenic organisms very and the phenotypic expression of a patient.

And that's why there's a plethora of symptomatology for complex chronic illness and multiple tick-borne illness. You can have GI Lyme. you can Have NeuroLyme, you could have Cardiac Lyne, You could Have Musculoskeletal Lymes, like issues with your jaw and dental issues.

It really is a very individual thing. you really have to tailor your treatment to that particular patient because as you know, certain drugs treat certain things, right?

So doxy and minnow are really good at, they're anti-inflammatory. They'll calm down the Lyme arthritis a little bit. Plaquenil will help with the autoimmune component.

So it's just like any other wing of medicine, you have know what you're doing.

Research, Chronic Infection, and Future Directions

I've thought this often, Dr. Mera, as I encountered patients, our interaction with our environment, and that includes microorganisms in our environments, influences a lot of things, including, I think, the expression of genes, how our bodies respond to stuff.

And then also what your immune system happens to be up to fighting off these microorganism certainly has a big effect on the body in general and your ability to respond other diseases.

We see people who gain, unfortunately, an infection in the setting of some other chronic heart disease or kidney or liver disease. And then it really disturbs their ability to fight that.

I think that is true across the spectrum. So our interaction with microorganisms is something our immune system often shields us from, but it is certainly something we encounter almost every day.

There's more interactions with micro-organisms, I believe, than we even recognize. I 100% agree with you. One question for you is, we're still at the level where we are trying to understand things at a molecular level of how these organisms are interacting at cellular level, at DNA level or mitochondria level.

What way are they acting at that microscopic level of our bodies? And I guess the question is, going forward, where do you see research going with this?

Are there any things on the horizon outside of the genetically modified vector mice? I was wondering if there's any other research that you're aware of that's ongoing to try to change this.

Dr. Horowitz is trying to work on a double-blind clinical trial on Dapsone. So we're trying get that organized. There's a couple of universities that are interested, and there is a drug that Kim Lewis, I believe he's at Northwestern University, he found a drugs called hygromycin.

And the reason that it's wonderful is that doesn't disrupt the gut microbiome. and it only targets Lyme, only Lyne. So they're doing research on that as well.

It's called Hygromycin A. Well, it is exciting to see some changes. And like you said, your career has spanned enough time. You've observed things changing a lot from the diagnostic side and even the treatment side.

Then going forward, hopefully as we understand things more at that DNA or molecular level, you'll be able to develop more things because A traditional antibiotic treatment for an acute infection is the model we're taught, but you're observing that a lot of people have so many effects, whether it be from the acute or the prolonged exposure and your immune system's interaction with that disease, it can create a chronic disease state, which is really interesting.

It's not unlike strep or TB or syphilis or leprosy. or HIV, they can all become chronic. For the most part, all of them are chronic, right? I think now HIV can be healed.

I'm not 100% sure about that, but I that there's a triple cocktail that is very effective and can either put HIV into great remission or it cures the patient.

That's not my area of expertise. So take it with a grain of salt. But I think it's something like that. Well, even like we were talking before we hit record, my observation is that there's so much research being done.

And the example I shared with you is hepatitis C. The screening, the recommendations for hepatite C screening weren't really in place because our treatments were kind of ineffective, tons of side effects, really didn't work that well.

And so it was hard to recommend that. Then a few years back, the treatment was developed that really, worked on hepatitis C, almost 100% cure rate. They said, hey, let's screen everybody for hepatite C because we can remove it for an individual that has it.

You hope for that day to come with these tick-borne illnesses, if we say we could identify it, and not only can we identify, but we have effective treatments so that we don't Ostracize people or make them feel like they are left out that there's no answer But rather we say we we think we know what's actually going on here and help you find a way that treats your disease Let me tell you the two areas that I'm most concerned about One is these organisms, they actually live deep in the tissue, but they come out into your blood.

And if you are a blood donor, They do not screen for Bartonella or Babesia or even Lyme. They only screened for HIV and syphilis, I think. I'm not positive about that, But I know the tick-borne illnesses they do Not screen four.

So if You receive a transfusion from somebody who had those infections and they lied dormant and nobody knew, then you're gonna get infected. And I've seen that many times, many time.

The other place that I'm concerned is that Lyme and the other offenders, the vector borne infections, they cross the placenta. So gestational Lyne, gestation Bartonella, Gestational Babesia is a real thing.

Key Takeaways for Physicians and Closing Remarks

And so the baby is sort of bathed in this infectious soup for nine months. And then when it's born, it can have a myriad of issues, anything from colic to autism to heart defects, a Myriad things that are not well known, right?

They're not Well known. So you really have to look for it. Thank you for sharing. Obviously, you have a lot of passion, a drive and a knowledge on this.

As we wrap up here, I want to think about what are some things if you could pick two or three things you would want physicians to know about this who are not Lyme experts.

What are the two of three takeaways that you want them to take away from this conversation to change how they interact as they recognize and treat folks with potential disease or ones who have already been confirmed with disease?

So the first thing I would say is when you have a new patient come to you and they have laundry list of symptoms, the 1st thing you should be thinking is some sort of vector borne illness.

And they probably have had it for a while. Either that or they got a huge pathogen load at the time of the bite. So that would be the 2nd thing. When you see multiple organ systems that are dysfunctional or sick or diseased, you should immediately start thinking infection, tick-borne illness.

Then of course, the questions I ask, have you ever been bit by a tick? Did you do a lot of camping and hiking? Because some of the ticks are nymphs and they're the size of a pinhead.

You can't see them. So you got to look at their lifestyle. Did they have an animal? Do they hike and camp a lots?

What was their life like? what was the risk of exposure?

So that would be the second thing is assessing risk of exposure. And then I think the third thing would to make sure that you test for co-infections. And to use a specific lab, you don't have to eugenics, that just happens to be the one that I'm using, but you can use Armin Labs or T-Labs are really also really good labs.

So that would be my suggestion is to go to a specialty laboratory for those tests. Now the downside of that is, is that you have pay upfront and then you submit the super bill to insurance and They will usually pay some amount, but it depends really on your insurance carrier.

Excellent. Thank you for sharing that. I appreciate your information and your perspective. And again, I can tell this is something you're very driven and passionate about.

You've been able to help, hundreds or probably thousands of people over those 27 years. Nine thousand now. Goodness gracious. Well, thank you. One more time, will you tell us the name of the website so folks who may want to follow your work and follow along?

My website is www.drsusanmera.com. And you can go on there and you could read about me if you're interested in like, how does she know this? Well, it'll tell you.

And then there's a lot of articles. There's lots of blogs, there are videos, financial assistance information, books that you read. I tried to be as comprehensive on my website as possible because there is not a whole lot resources for tick-borne illness patients.

My website, it's 27 years old. I just keep adding stuff, adding stuffs, and also modifying it as things change because medicine is always evolving. Absolutely.

Thank you for taking the time to record a podcast. This will be tremendously beneficial to those who listen to it. And I wish you the best in what you're doing and I look forward to following your work.

So thank you so much, Dr. Mara. All righty. Thanks for tuning in to the Doctors Making a Difference podcast. And thank you for what you do to help your patients and your community.

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See you next time.