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[MUSIC PLAYING] ALEX MAIERSPERGER: There are some statistics about health care in today's conversation that will blow your mind and in a lot of ways, break your heart. I'm your host, Alex Maiersperger, and in season three of The Health Pulse Podcast we get to celebrate leaders changing health care and life sciences for the better. And today I'm so excited to welcome and celebrate Eric Doherty, President of PERSOWN, leader in low-cost diagnostic testing and personal electronic health records. Welcome, Eric.

ERIC DOHERTY: Hey, thanks Alex. Thanks very much for the opportunity.

ALEX MAIERSPERGER: Let's start on the diagnostic side of the business. So ultra accurate and low-cost, that sounds like the Holy Grail, and I think what a lot are promising. What's the difference in price and accuracy with PERSOWN?

ERIC DOHERTY: Now, I really appreciate that. We're working with a-- it's a technology that's been around for a while from a concept standpoint, but not in the diagnostic space. We're working with a technology that's called electrochemical biosensor technology. Basically, it's similar in its platform design to a PCR, where you get a very accurate, very sensitive and specific test, but on the flip side you get a result in a very quick time frame. We're looking at anything under 2 minutes. And so the benefit of a very accurate test, but also a test that you get in a very quick period of time, is obviously hugely beneficial to the marketplace. And really, a game-changer in the diagnostic space.

And so we're looking at the platform as being a way to transpose a system of testing that is obviously a very high-value type of test, but also a low-cost type of test. And so the benefit of the platform is bringing low-cost diagnostics to, not only the US marketplace, but also to the global marketplace. And so the intent is to drive the costs down of diagnostic testing, kind of a lab-on-a-chip type of design, where you can use it in the pharmacies and a doctor's office, yes, but also at home at a very, very inexpensive price.

ALEX MAIERSPERGER: You mentioned the US and the rest of the world. One of the shocking statistics on the website was that there's 26 doctors per 10,000 people in the United States. And there's less than 1, I think it said 0.23, doctors per 10,000 people in the poorest countries. What's the USA versus rest of the world split in the focus of your business?

ERIC DOHERTY: Yeah, it's actually probably 50/50 if not probably even 60/40 where it's 60/40 on the lower- to middle-income country focus. One other statistic that is not on the website, question for you. How many pediatricians are in the country of Madagascar, outside of Africa? Any idea?

ALEX MAIERSPERGER: Less than that 0.23 per 10,000.

ERIC DOHERTY: Zero. Zero. You know it's crazy. And really, the value that we're bringing from a diagnostic standpoint, but also on the IT front, is the ability to bring to those lower- to middle-income countries, a platform that can really change the dynamics of what's happening right there in those countries, from a health standpoint, bringing low-cost lab-quality testing at a very, very inexpensive venue. And I think we're able to do that on a grand scale.

I think the benefit of the platform, as well, is the multitude of different assays we're looking to bring to market. We're working on a number of, right now, areas like COVID, like tuberculosis. Sepsis is a big one for us. We're actually working with a sepsis project with SAS and really driving the Viya Solution around that.

But even areas like Alzheimer's, breast cancer, and even concussion are some of the areas that we've done some preliminary work in that we're looking to move forward, from a testing standpoint. Where, in those lower- to middle-income countries, you've got the ability to bring in very, very low-cost diagnostics to really change that health care marketplace and health care perception of diagnostic testing.

ALEX MAIERSPERGER: Are all these tests on the same strip? You just mention-- You just rattled off a bunch. Many of us, I think, when we think of testing probably naturally jump to COVID and some of the infectious diseases, but you mentioned brain injuries, and cancers, and I think heart attacks were in there, and tuberculosis, sepsis. Is this like breaking out a deck of cards for each different test?

ERIC DOHERTY: I appreciate the fact that you brought that up. And so I did bring my deck of-- I call them strips, instead of deck of cards. But in essence, this is really what the technology is leant upon. In essence, it's similar to glucose strips in its production. So the ability to basically do layer upon layer production on very high-speed machinery is the concept.

And in essence, as we're moving forward with different assays, different tests, the ability to test for breast cancer, the ability to test for concussion, et cetera, is really changing up the chemistry that's set upon the actual strip. And so the concept is that as you are moving forward into different areas, and I brought in some promo materials, but in essence, there's a handheld device, but there's also a smaller device that we're working towards.

But in essence, you would put in the strip, you put a sample of whatever you're testing for. So let's say for breast cancer we're initially looking at a saliva, as a fluid, for a testing basis. And so you would put a sample of the saliva on the test strip. You basically put the test strip in, you push the button, you get a result in under 2 minutes. And so the beauty is that you can literally, like basically a printer machine, a copier machine, change out the cartridge for the individual assays that you're looking to manufacture. So you could have a printer cartridge for a breast cancer assay, basically the chemistry that's built for those antibodies, for that testing device. And then move it over to a concussion test, or move it over to a sepsis test.

So that's where the beauty of the production capability lies. And then again, from a cost standpoint, producing these, again it's paper, plastics, and some ink, and other type of materials, very, very low-cost materials. These can be run in the millions per production line. So the ability to produce these in very large scale, then going back to the lower- to middle-income countries, but also here in the United States, is of huge value obviously to the hospital networks and hospital systems, but also really the governments, both locally and also internationally.

So our intent is to really drive that global health care change in really driving in high-end diagnostics, low-cost.

ALEX MAIERSPERGER: I appreciate the show-and-tell, and I appreciate the wide variety of conditions that you'll be able to spot and look for. Is one of these diseases that you mentioned, or medical conditions, a focus area in the short term for you?

ERIC DOHERTY: Well, we we're focusing on a few right now. So COVID, obviously. We started the company about a year and a half ago focused on COVID and so we're driving that initiative, but we're bringing in other elements, other assays as well, currently.

Right now primary areas that we're looking at focusing on would include sepsis, so really changing the marketplace there where again, past history, my father passed away from sepsis and so it's a big thing for me to really push that forward. But in essence, right now you've got a patient in the hospital system where they might wait an hour or longer for a test result to find out if they're going into a septic shock that basically can kill them, ultimately. And so the ability to test with a point-of-care type of testing diagnostic tool that I'm looking to bring to market, there at the bedside in an ICU or in a hospital wing or at a hospital bed, is our focus right now. And so the ability to be able to do that and do it point-of-care with a very rapid response, that's of huge value to the system. And so, that is one big project we're working on.

Breast cancer is another one. We're looking to partner with some of the largest universities in Florida where the ability to bring forward a saliva-based breast cancer test is obviously unique, but also from a low-cost standpoint, could be brought around the world to really focus on those billion moms that aren't being tested currently.

And as I mentioned, we're working on a couple of others in the background and those are moving forward. Alzheimer's, we're looking at both a saliva-based, but also a blood-based Alzheimer's test. Again, quite unique there. But even things like concussion, where the ability to test instantly, let's say on the side of a football field, for concussion using a saliva-based test is also something we're looking at.

ALEX MAIERSPERGER: So sorry to hear about your father. Many of the greatest inventions I think, come from those real personal stories and the mission of, I can change this for someone else and someone that comes after.

ERIC DOHERTY: Totally agree. Thank you.

ALEX MAIERSPERGER: And it sounds like from two hours, so from one or two hours getting that test back to one to two minutes I think, can definitely be a game-changer and definitely changes the course of lives. And so looking forward to that. There's another statistic on your website that says diagnostic errors account for the deaths of seven million children a year. And what goes into that statistic was everything from limited availability of testing, to the affordability, to lack of training of health personnel. How are you changing that statistic?

ERIC DOHERTY: Yeah, and that was a real telling one for us. You and I talked a few weeks back. We added a Dr. Robert Redfield, the former CDC director under President Trump, a few months back. And

through the conversations that I've had with Dr. Redfield, you know that was a really big issue when he did his work under President Bush, bringing the low-cost therapeutics to the African market for HIV. And the ability of testing, the ability of data. And more importantly, the trustworthiness of the data was so important there in the African nation, and really in a lot of the lower- to middle-income countries around the world.

And so the concept that we're really working on is to obviously, with the partnership that we have with SAS, is to really drive not only the trustworthiness of the data that's coming out of our system, but with our PERSON Connect IT system, the ability to pull in data from other IVD tests, other IOT devices, other type of wearables and even monitors, either at a hospital bed setting, in a hospital specifically, but even at home. The ability to pull that data in, and then normalize it, and then run it through the Viya system within SAS, gives it that data trustworthiness that's really needed around the world.

And then you throw in obviously, the diagnostic side, just independently. The ability to test, test easily, test low-cost, and test frequently, is something that's not really done right now around the world. We're blessed here in the United States. We've got a really, pretty solid health care system. I mean could it be improved? Sure. But I mean, on a scale of one to ten, I'd give it probably about a seven and a half to eight. Around the world, in those lower- to middle-income countries, it's probably a negative two, negative five in some cases.

And so the ability for us to bring to market, not only the diagnostic side of the business and really drive down the cost and efficiencies, and efficacy as well, the ability also to tie-in the IT side, where the diagnostic data, the personal health data, the records part of the element for electronic health records, is of huge value, I believe, to that global market space.

ALEX MAIERSPERGER: You touched on a lot of the components, sort of hot topics, around electronic health records, trust, and ownership, and shareability, and ease-of-use, all of the things that we hear about and there's probably no hotter topic right now. Lots of organizations are certainly promising this, here in the US and abroad, of a National electronic health record, and the ease-of-use and things. What's your take on the personal electronic record?

ERIC DOHERTY: Yeah, you know, I think right now the issue or concern that I have, and I think it's a concern that's building, is really the ownership of personal health records, and personal records in and of itself. I mean again, how many data breaches have we had with credit cards over the last ten plus years? The same type of thing really is happening on the health care side, too. And really the question is, who owns your health record data? Who owns your information, your personal data?

And so from that standpoint again, PERSON, personal ownership, personal ownership of your own health records, is a key initiative that we're trying to drive into the marketplace. And the ability to control that data, giving you the ability to see who sees it. See where you want to put it. See where you want to push it towards. See who you want to, truly, share it with, is something that we want to really I think, extrapolate into the health care marketplace. That's not happening now. You look at your different EHR systems currently, and they typically will control that data.

If you are in a certain Health Network and you want to take your data and move it over to another Health Network that may be two miles down the road, you've got to go through a lot of hoops and hurdles to get that done. We're looking at it as an opportunity to be able to get and gain control of that data. You are

allowed to push and pull that data as you see fit. If you want it in clinical research, if you want it to go to a certain hospital, or if you want to go to a certain doctor, that is your choice. And so we're really trying to strive the ability of creating that for individuals, but also allowing the individual to totally control their own personal records.

ALEX MAIERSPERGER: So you did a little bit of show-and-tell on the diagnostic side, and we saw that. And I'm imagining on the personal electronic record side, the other show-and-tell of-- primarily being a cell phone. What if you don't have a cell phone?

ERIC DOHERTY: Yeah, great question. That's something we've already started working on to really make that as a provider element. One of the things we're doing as a company is connecting with some of those large organizations that are in that space. So think in terms of kind of again, global aspects. The first question would be again, from a phone standpoint. How do you get, to a person, a phone, or a pad, or something like that. So we're working with some of the largest organizations that are in that space. So the ability to provide that to those individuals is a key component.

Think on the other side, too. Again, you've got the ability here in the United States to connect with your phone into a system. But think in terms of Wi-Fi, and the ability to connect into Wi-Fi systems. So what we're also looking at doing is connecting into those infrastructures, again, geographical standpoint, if you're in the middle of Africa you can use satellite technology to get that Wi-Fi data to open up the access to again, phones or pads, to get your information.

So those are some of the things we're doing in the background. And then kind of flipping it over, one of the things we're also looking at doing, working with one of the largest universities in Florida and actually in the United States, to actually start work on a global education system where that system will be set up to where it will help educate those providers and those people using devices and tests and that type of thing globally.

Restructuring it to where it's multilingual so literally, you can have somebody in Botswana, but also somebody in Brazil, on the Portuguese side, have the ability to give information in an educational format on how to use a certain device, how to use a certain type of test, in an environment where again, you don't have practitioners, really literally, on the ground. So giving that training and the ability to again, use those devices for patients and provide that health care benefit is something we're striving to do as well.

ALEX MAIERSPERGER: It sounds like there's a multi-pronged approach. I love the education factor, the technology factor, and the partnership factor. I think there's the build and partner and it sounded like from the statistics we talked about earlier, you have to have that. You have to be able to educate, and teach, and give, and share. And it sounds like a difficult challenge, but a worthwhile one.

You mentioned COVID earlier, a COVID test. Do you currently have a COVID test? Or is there one coming? And if you do, or if there is one coming, what's different about it?

ERIC DOHERTY: Yeah, we are working on that. We've done some preliminary work with the FDA. We did submit some information into them. We're moving, hopefully rapidly, towards bringing that to market because it is still, I think, a big market need. I know we're not really in a huge swell as far as a variant issue currently. It is moving around. I'm sure you've heard of some friends of yours getting sick over the

last month or so. I am still hearing of people getting sick. And so I think it is moving. The question is, will the next one be a little more virulent and obviously more severe? Don't really know, but again, probably at some point will be, unfortunately.

We are bringing to market, as I mentioned, a very rapid COVID test. The ability to test with a saliva-based system is our focus in that it is a very easy way to do it. You don't have to worry about the nasal swab up the nose. Very quick obviously, under 2 minutes. But I think again, the benefit will be that it will have the IT component. So the data will be pushed automatically into a cloud-based system. So that, from a data repository standpoint, is going to be relatively readily analyzed, which is I think hugely beneficial, but also giving the ability of not only qualitative, but also quantitative data.

So as we move forward with that test being used, there's probably a lot of great information that we'll be able to gather for it and from it, that will give probably, more insights on the COVID aspects, and possibly even down to variant aspects. So some pretty unique information that we feel that will be garnered from that test. And I think ultimately, again, it's the cost. I mean we're looking at a very low-cost system. And so the ability to test a wide number of people, but also test them very frequently and at a very low cost is also a very key element for our business.

ALEX MAIERSPERGER: There were some difficult and somewhat sad statistics that we talked about today of both in the US and abroad. And obviously we see a lot of negative news in health care and other parts of the economies that we deal with. What's one thing that makes you optimistic about the future?

ERIC DOHERTY: Technology. As we've seen over the last couple of years, I mean with COVID, and obviously the change in health care technology as a whole, there's a number of new ways-- I mean, obviously the vaccines that came out in roughly, what? Less than a year. That was astronomical. That's never happened before. And so the ability to bring to market things that are game-changing. And from a technology standpoint obviously, a positive move forward from a tech standpoint is of huge value. And I think as we move forward there, that will continue. One of the things that-- you and I talked a couple of weeks ago, one of the things that I think keeps me really optimistic on the health care front is the ability of children and kids that are currently now in school-- you know, I've got probably kids in kindergarten, or kids in grade school and high school that are thinking, or have concepts of what they would like to do in the future. And a lot of that, I'm sure, is on the health care front. And the ability for those kids to think about things and think about how they would make things better, make them more efficient, and make them more health care worldly, is something that's really cool. And I think that's always going to be happening.

ALEX MAIERSPERGER: What a great take. What a great view on technology and innovation and the future. Really appreciate that. Eric, there's so much demand on your time. So appreciative of you joining us today.

ERIC DOHERTY: Thanks, Alex. I appreciate it. That was a great talk. Thank you.

ALEX MAIERSPERGER: And for all of those viewing or listening, we know that there's infinite demands on your time, as well. We're so appreciative of you tuning in and we can't wait to continue creating a

healthier future with you. There are so many real challenges in the world around you. We hope that wherever you are, you have a chance to either see or be the good around you. We would love for your comments, if you have comments and questions, here in the YouTube section, or if you want to email us for future guests, or to be a guest, @TheHealthPulsePodcast@SAS.com. Thank you.

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