

Dr. Arik Eisenkraft: I actually think this is the right path forward. I think that as we have more accurate, sophisticated and advanced tools, this may actually help all of us as healthcare providers to provide better health.

Jason Lopez: This is the tech barometer podcast. I'm Jason Lopez, the internet brought with it, profound disruptions, social media, disrupting newspapers, for example, but one that many have been waiting on is a disruption of healthcare where in the U S the per capita expense is more than \$11,000 annually, double the amount in most European countries. One of the core reasons for high costs is that the model focuses on treating the results of bad health, especially heart disease, cancer, diabetes, rather than on prevention data. Your access to information is the magic behind Airbnb, Uber, and other disruptive apps who has a room you can sleep in or a car. You can get a ride in, in health care to achieve a prevention model. The magic would sort of be the other way around as it is now. Your data from an annual checkup and blood draw is hardly anything. Imagine if your doctor could have your vital information on an ongoing basis. So how did doctors get access to your data? And even if they could, how can doctors deal with the data of hundreds of millions of people to get in front of disease.

Lisa Suennen: You go to the doctor and you've got some condition that's readily measured by some ongoing wearable sensor. How does the doctor know that? How do they prescribe it to you? Because it's not in their formulary, you know, and that's loaded into their epic system. How do they get paid for monitoring you?

Jason Lopez: Lisa Suennen is a venture capitalist at Manatt, Phelps, and Phillips. She's spent her career investigating business models, listening to startup pitches. And greenlighting the funding of various new technologies in healthcare.

Lisa Suennen: The medical system is not really set up to take this data, analyze it, and do things with it because they don't generally get paid for doing that. The medical system doesn't get paid to keep you healthy. It's paid to treat you, right. And so if you have a condition, like a heart attack, and there's a way to measure that you might have another heart attack, you know, they'd be looking for that. They'd be monitoring for that.

Dr. Arik Eisenkraft: Physicians and nurses are in many cases, more conservative when thinking about health issues than the public, it's not always like that, but we see that a lot.

Jason Lopez: Dr. Eric Eisenkraft is chief medical officer of the Israeli company, Biobeat technologies, and a medical researcher at Hebrew University of Jerusalem. Eisenkraft has been involved in testing remote technologies, such as augmented reality to conduct a medical procedure,

Dr. Arik Eisenkraft: A small study we've completed not long ago in which medical students were in an operating room. I was, some of my colleagues were standing in another room and the students were wearing these glasses. We could see through their glasses, what they're seeing. And they had a swine model of hemorrhagic shock and lung contusion there. We guided them in real time, how to perform an insertion of a chest tube. And we were drawing on the screen and they saw it on their glasses, how to perform the cuts and how to introduce the chest tube inside the animal. And it worked perfectly.

Jason Lopez: This is just an example of the many kinds of advances brought on by the it revolution, technologies such as the cloud, AI, robotics, AR and VR inspiring many new

developments in medical therapies. But perhaps the low hanging fruit of immediately impactful technologies are wearables. A recent study found that a mobile health app, when used as part of a doctor's care, significantly improved patient outcomes. But one of the insights of the paper is the next hurdle, actually getting the healthcare system to adopt it. Suennen says this piece is beginning to open up.

Lisa Suennen: Already starting to see movement towards payment for.

Dr. Arik Eisenkraft: There still a lot of way to move forward, but it's not in a preliminary phase anymore. And you don't have to stand beside the patient in order to get this information. The patient now can be thousands of miles away from you, and you can still understand what is happening, what is going through and provide either help from afar or at least give them the guidance, what to do now.

Jason Lopez: The technology to enable remote medicine and how it gets paid for is one discussion. Getting doctors and patients to start using it is another. But because of the COVID lockdown, remote medicine went from an alternative way to connect to an expected way.

Dr. Arik Eisenkraft: I must've made the COVID-19 for us was a huge leap forward because it enabled us to show the strengths of such a system. We are talking about remote patient monitoring. We are talking about reducing direct contact between healthcare providers and patients.

Jason Lopez: Eisenkraft's company, Biobeat makes a medical grade wearable device, which measures 12 different parameters, such as oxygen levels, heart rate, blood pressure, and cardiac index to name a few.

Dr. Arik Eisenkraft: Because now physicians started to think, "well, maybe I don't really want this patient to arrive to the hospital. Maybe he can stay at home and we can help him and provide medical care when he or she is still at home." So this is one thing. Another thing is pre-symptomatic detection of changes. So I don't want to wait until the patient will feel that something is happening. I want to be aware of that even before he feels that, and we have no more and more evidence that is possible. And we can do that.

Jason Lopez: What Eisenkraft just said is essentially the whole ball game. With enough data, it's possible to get in front of disease before it happens. So it's not just really about the wearable, but what that wearable is attached to: the algorithms that enable making sense of the data.

Dr. Arik Eisenkraft: We have huge data sets of thousands of patients, and by using machine learning tools and algorithms that perform better than us and keep on analyzing the data that was collected and refining that. And with every patient that is being added, we get more insights and more information. We see how our algorithms become stronger and better with better prediction capabilities. And on the other hand, we are a cloud-based company. So basically there is no limits to how many patients can now be monitored in currently different places. And physicians now can perform their own analysis or get our help in analyzing the data.

Jason Lopez: In other verticals, such as media, transportation, hospitality, such tech innovations in cloud and AI have meant disruption, transparency, lower prices, better services, but there's been more of a challenge for these platforms to become established in healthcare.

Lisa Suennen: You're seeing, you know, newer doctors are being trained in a digital world. Some of the medical schools are better at this than others, but they're starting to work, you know, in that realm or at least they're young enough to have engaged digitally in every other facet of their life so they're accustomed to that technology engagement. And, you know, as those replace older doctors, you know, that'll help, right? I do think all of these things are converging to make things different. 10 years is perhaps the right number of years when it will be fundamentally different for this. Not one year, but we're already starting to see some of that. It's not unheard of for these things to start being used now. Especially clinical trials, that's happening a lot.

Dr. Arik Eisenkraft: I think that we're really witnessing what we probably will be defined a few years from now kind of a revolution because there are multiple novel technologies that are now being implemented more and more. And it has to do with imaging and with using artificial intelligence and robotics and merging everything together. And it's quite different from how it was, let's say a decade ago.

Jason Lopez: Dr. Eric Eisenkraft is the chief medical officer of Biobeat Technologies. Lisa Suennen is a VC at Manatt, Phelps and Phillips. You might want to check out her blog, a must read in the industry called Venture Valkyrie. It's at venturevalkyrie.com. I'm Jason Lopez. This is the tech barometer podcast produced by the forecast. Find us at theforecastbynutanix.com.