

Transcript of Show and Podcast

“Your Quality of Life – Healthy Alternatives”

Precision Medicine – with Dr. Abbas Zavar

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Hi, folks. Welcome to "Your Quality of Life - Healthy Alternatives. I'm Dr Christine Sauer, and I'm very excited to have today Dr Abbas Zavar. Thank you. Thank you so much. Thanks for having me. I'm excited to have you here today and talk about precision medicine now to start about sleep.

Tell us your story. I know you live in Canada, but how did you get here and what did you do before and what are you doing now? OK, so I have a medical background and I have been as a family doctor for almost 15 years in my back home in Iran.

And also, I was involved with other domains of, for example, clinical research, health management and the other domain of health care system. And I had the role as a decision support - the decision, support and business intelligence leaders position in hospitals or health network.

I got my MPH - master of public health - in mental health and addiction. Then I moved to that domain, teaching that concept . As a doctor, I try to solve the mental health and addiction problems of my patients in my clinic and also in management level.

And also, I started to get my Ph.D. in alcohol abuse for the first time in Iran. As you may know, my country is an Islamic country, so they try to hide and they ignore all complication or issues from alcohol.

But I started my pitch to that topic. I conducted the first international conference of alcohol abuse in Iran. But unfortunately, I couldn't finish my story, because I came to Canada 2015. Yeah, I had lots of accomplishments. But the most significant accomplishment, I want to say, is that I founded the first preventive method, preventative medicine institute in Iran.

Wow. And I grew lots of genius and talented people, healthcare professionals, to start some approaches for prevention. And it was the the first time I was introduced to the precision medicine concept. But more preventive stuff, though. Now, Abass.

Why have you changed your avenue now to digital health? Yeah, good point. So you are if you are a doctor like me, as I imagine, we both know that getting the Canadian medical license is a very tough way. My wife is a physician as well.

She wanted to go that way. So I believe that one person would be enough for each family. So I looked for alternatives to medicine and searched

around, talked with experts. And I realized that digital health or health informatics is that the future of health is a growing field.

There are lots of opportunity organizations, hospitals, initiatives working in this field. So because I have a little familiarity with this environment, so I choose this one, this pathway. I started from a certificate at Ryerson University, moved to a Masters program at the University of Toronto, working with several companies as a clinical data scientist or consultant.

And I'm teaching in the same Master program right now. That must be so exciting. How did you get into precision medicine and what the heck is it? Yeah. Precision medicine is the ultimate goal of medicine right now. Our medicine, even Western or traditional, is based on the evidence base.

We have some clinical research. We found a solution for a specific issue or problem in our health system. Then we advise that solution for our population. But it's - it usually works, but not perfectly. Precision medicine, if we include all data about each person, not only health data, genetics data, social data, behavioral, environmental, lifestyle, everything, then we can

customize, tailor or personalize our clinical intervention for each person or very small group of person that they are really similar to each other. This is the precision medicine. Maybe in past is it's out of our mind, but right now we have enough technology and cloud analysis, machine learning, all of those.

Those are stuff. We have it in other business sectors so we can use it in the health care system and included all of this data, analyze them and providing precision medicine. Hmm. So basically what it would mean is that universal data collection feeds into artificial intelligence networks and then try to determine by some computer algorithm what's best

for an individual. Exactly. So it's basically the modern scientific computerized version of individualized medicine. Yeah. Yeah. OK, I think I understand what it is. Now, let's ask you, what do you see are the advantages of precision medicine for patients?

For patients? Good question, right? Precision medicine has two different aspects. One treatment, one prevention. Definitely, as I mentioned, for example, for all diabetic patients, maybe type two diabetes for the first line, the recumbent, this kind of medicine for all of them.

If it works, perfect. If not, we will go to second line. Not go for the third line of medication. Right. So our patient need to accept this challenge with this treatment, evidence based treatment. If we provide them precision medicine, you are you are diabetic, patient, but you are a smoker.

You don't have enough activity. You are in this social level of status in your community. You have these behavioral, you have these kind of mental

health status. All of this in those five medication for all diabetes, type two.

The first one is the best for you. So I don't need to start from the first one, as the doctors. Also in prevention component, It's my favorite one because then precision medicine, because we have this holistic information, we can identify risk factors.

Even nobody know about myself, about genetic environment, Lifestyle, on everything. And then based on our guidelines, OK, our person is at risk of coronary artery disease without any sign on symptoms right now. So what what would be the personalized clinical intervention for me to prevent coronary artery disease happen in the next 10 years for me.

So this is an amazing one. Where do you get all those data from? Yeah, this is my research right now. I'm looking. Exactly. Try to find this answer of this question in Ontario of Canada with a group of my students, we are looking for exact genetic data,

health data, lifestyle, environmental data. How many of these data are available? Who is generating these data? Most of them are siloed in a specific organization or company. We don't have enough data sharing, but there are lots of problems.

But we know that - what is general? Most of them is coming from hospitals, healthcare professionals, laboratory. The other one, they are generating data, but definitely is not enough. For example, we need the social, surveys, My my smartwatch, my phone, they are collecting data and I need it for precision medicine.

OK, now let's stick with the advantages. We get to the other part later. Do you see any advantages of precision medicine for health care providers? Yeah, I mentioned that. Right now, we each clinicians, our doctors, they are facing huge data for patients and then they need to analyze it based on their minds and algorithm to find the

best approach. So by cut. Even we have a huge data, but we have lots of lack of data for clinicians to support them to make a better decision. Precision medicine provides all required data at the point of care and providing a best recommendation for clinicians and clinicians.

Then by having those personalized data, then they may make a better decision and the best decision for each person or patient. OK. Now, are there any cost efficiency in precision medicine? Now, at the end. Yes, right now may be using this technology cloud, AI, all of them is expensive to catch that point.

But when we create the solution, definitely it could be cost effective. Always prevention is cost effectiveness . Pprevention is the best medicine. Always. And what we can prevent. I, I don't think anybody would disagree with that, that we should prevent what we can prevent now.

Exactly. So, yeah, go ahead. Yeah, I've just mentioned prevention is the best cost effective solution. And when we are also in treatment , treatment portion, when we customize our clinical intervention, we prevent comorbidity complication, wrong intervention. If indeed we exclude those errors, definitively it would be cost effective.

All right, now let me ask you, I heard you mentioned several times that precision medicine can support the doctor or clinician, make better decisions for the treatment of a patient. Now, who will argue who makes those decisions? Shouldn't it be the patient making the decision for themselves?

Yeah, why not? When we have this data and we have this technology, we can provide clinical decision support for health care professionals or as a very simple, simple application. We can provide this information for patients themselves. Yeah, OK.

This is your data. This is your risk factors. This is the recommendation. OK, go and talk with your doctors. This is the same recommendation for you, but only for you. This is a very customized one. Many people always, and I'm one of them say that it should be patient centric, which I think you mean that it should

be, that means, in the end, every person makes a decision for themselves. And the doctor is an advisor and educated support. Telling the patient this, in my opinion, would be the best for you. But it should be always followed.

But what do you think? Exactly. You know that. As a family doctor, you did that all the time. Yeah. Now, there will be people asking if precision medicine and the collection of that amount of data that are very private data, mental problems, personal health related data can be used by malevolent parties and to the detriment of people and

humankind generally. By "bad" people, to say it in easy language. Yes, I know. It's it's possible. But, you know, this is the concern, a big concern of privacy and security and precision medicine. But in my opinion. Lots of European countries.

They passed this privacy issues, cultural concern about the privacy. So definitely Canada can follow them and solve these issues as well as a cultural health literacy. Yeah. On the security part, I believe that we have enough technology. If our banking system has very strong security, why health systems don't doesn't follow that.

Now, some people would argue there have been banks hacked and being broken into with financial consequences. Now, if somebody breaks in the medical database, that could have consequences. that devastate whole populations. Each new concept, the new initiative, has advantages and disadvantages.

We need to trade off . If you count it, you will find that the advantages of precision medicine would be very bigger than disadvantages. I can't ignore it. Yes, we have to always consider all the strongest security for this very, very sensitive data.

But it's always it's possible some the smarter people want to take those data. Of course, most people want to know exactly what's going on with their bodies and around them. But there are people that value their privacy more than data and are afraid.

And you know that from your medical background, there's people that are afraid of everything, including loss of privacy. And I wanted to know from your knowledge in precision medicine and in detail, let's think about an ethical issue. Do most of the people that promote precision medicine support an opt in model that each patient has to give explicit permission

for them to use data? Yeah. Yeah. This is the the pretty amazing idea. And as I heard that Ontario and even Canada are going to develop a new clinical data strategy and they are following this the same approach.

Patient centric and myself as a patient, I will decide. Which part of my health data or personal data should be shared? Me, too. Yeah. All is based on my decision. Yeah. So if I am convinced enough, precision medicine, is it good for me?

Then I will let you know. You use my data. So and I fully support that, I mean, it is certainly an interesting future for medicine in our computer age to use artificial intelligence to help with different difficult differential diagnoses that often regular doctors just don't think about, because it's way too rare, complicated and a big advantage.

Yeah, for sure. I know there is still a percentage of people that would say, Will there be some kind of coercion? For example, if you don't agree to your data collection, we can't treat you under the national health system.

That is certainly a concern, and we have seen it or will there be a reward like some provinces gave people rewards for Covid vaccines, which is a form of coercion, whether you like it. And people some people say it's unethical, but you're right about that.

Do you see the danger that there will be benefits attached to giving the information or disadvantages if people opt out? Besides not getting the optimal treatment , obviously. Now, this is a really good question, but it's hard to answer.

Yeah. We need to know how much, if we give access to full access to patient for his or her health data. They mean it make them confused or make a wrong decision. We need to know how they clean them.

As a clinical data scientist, how summarized them and how prepared them to be for them and how much they need to have access to that data. Definitely based on the ethical, they have a right to have access to their data.

But I believe that as a physician, if you provide them the full data, it's not that effective or effectiveness for them. Yeah, sometimes it can be overwhelming for some. Yes. Exactly. Yeah. Now say. Even though let's let's construct the case, let's say you have a child that has a drug problem.

How would you feel comfortable if precision medicine had been implemented with complete data sharing to take it to a doctor, a therapist, knowing that this diagnosis and all the data around it will be stored electronically and maybe in case of a data breach used against them in the future, even if this element is long.

In the past, like some people on Facebook posted pictures, drinking or anything of them as a youngster, and then they can get a job when they have 40 because their employer found the picture. I will say this, this is a very complex topic about the privacy and security . For myself,

It's my option , his privacy is my option to share my data with my doctors or not or not. And this is the responsibility of doctor or company or organization security to secure that data. This is a trade off.

It's not always zero or 100. This is a range. I need to evaluate how much I want to share my privacy information and how much I can trust. That organization is secure from my information. Like, for an example, the genetic data is very, very sensitive data for precision medicine.

But there are lots of people. They trust some companies. They give them their sample. They analyze all genetics and recommend them preventive or treatment. So I trust that organization. I know that they are really secure. Yeah. So this is very based on range, how much I want to use my privacy and security.

I think so. That absolutely makes sense. And the sensitivity of each person. Yeah. And yeah. Well, that that is a fascinating topic. It is. It is really fascinating. But how is it with the data preservation? Would it be possible, even between doctors that when they see 20 years ago somebody was addicted to whatever, then go back and

say, oh, that's an addict? And some doctors are doctors are people. There's good doctors as doctors that have not so high ethical standards to say the nicest. I hope I don't meet many of them. I haven't. Most are very fine people.

But some somebody says, oh, my God, that's an addict. I don't even want to treat them. Now to those issues, would there be an option to remove all the data from the system? Information, would that be even possible

if, say, somebody grows up and says, well, I've grown up, I changed my mind.

I want all my health care data removed. Is that a possibility? If I this is a good question, and if right now we are going for patient centric or individual centric data and we let them know to control their data.

I believe so. It would be possible. I think that would be an important feature that many patients would be looking for. Who owns their data? Yeah, this would be the individual. Yes. You give the doctor and the computer access to it to analyze it for your benefit and not for the benefit of some third party.

Yeah. Right. And that is important. And I think that's a question that most people ask about that kind of medicine, which is, of course, very new, would that everything nowadays is controlled by computers. And it's not that long ago that George Orwell wrote the classic 1984 - with Big Brother is watching you and the horror scenario, that hopeful

never will come true. And so it's really fascinating. So what is in the future of precision medicine? What's coming up in the next weeks, months, years, what do you see coming up? Yeah. Not as a real precision medicine to include all of those data I mentioned, health data, genomics, also some social , everything.

We don't have that solution right now. And I couldn't find it in any country. But lots of companies and organizations, they are touching one portion of this because this is a huge one. Some companies are just working on genomics data.

The other one working on an imagined report data or the other one. We have a huge solution related to precision medicine. And at the end, all of them should be integrated. Yesterday, I helped one of them. It's really amazing one.

Maybe nobody think about it. A company in Ontario. So they have an A.I. solution to get your EMR data. And electronic medical records from each physician and try to search on the data to find rare diseases. And they found that between five to 10 percent of patients of each doctor, they have rare diseases and nobody could diagnose it.

. But this AI finds them and reports to that doctor and sends back all the data to back the doctor. They don't use it. They just implement the AI on the EMR. They find patients, report it and done. It's secure and very fascinating.

It's amazing. It's amazing. So rare diseases are really not that rare. Yeah, exactly. That's what I always thought as a physician myself, because I saw those rare diseases that are supposedly to be rare. Yeah, well, that is fascinating because they are mostly overlooked because in health care, at least in North America, doctors learn when you see hoofprints,

look for horses, not Zebras, there's oodles types of zebras, and if artificial intelligence can look at the whole herd and say, yes, her is that kind of zebra, look for it.... That is helpful for the physicians, of course, all for the individual that is affected by it.

So I understand your fascination with that kind of medicine, when you really can help. Make very difficult determinations that then lead to clinical consequences, because that may be something that needs to be treated differently. Exactly. And that is a big hope and a big positive.

So what do you see as a timeline when something like that, the beginnings will trickle in medical practice in reality? I wish I could say very soon, but I don't think so. At least in Canada, we have lots of challenges with policy agreement, consent.

Who is the real data owner? We are still challenging with this issue. But I really hope we can get it hopefully by next 10 years. Next year. OK, I might see that. I'm only 60. I am. I plan on being alive at seventy five.

Perfect. I'm looking forward to Canada, where some of us. It was a pleasure having you on my show. Thanks for having me. And all the best for you and your wife and your family for your future in Canada, too.

Thank you so much. Thank you. Bye bye. Thanks. Have a good day.