TRANSCRIPT

HIE PODCAST 1: Prashant Warier and Qure.ai

BH: Hi, I'm Bruno Holthof and you're listening to Health Innovation and Entrepreneurship, a podcast series from the International Health and Tropical Medicines Programme at the University of Oxford.

Our guest today is Prashant Warier. Prashant studied operations research at the Georgia Institute of Technology and has successfully developed and commercialized various data science applications in industries such as trucking, fashion and now healthcare.

Prashant is co-founder and CEO at Qure.AI, a company that is focused on reshaping the landscape of medical diagnostics with artificial intelligence. QURE.AI was founded in 2016 and wants to disrupt traditional radiology practices by enhancing the imaging accuracy with artificial intelligence.

The company wants to make diagnostic imaging such as x-rays and CTs more precise, more accessible and more affordable.

More than 10 products already have MDR and FDA clearances and these products are being adopted in the screening and diagnosis of diseases such as lung cancer, tuberculosis and stroke in North America, Europe, Asia and Africa.

Hey Prashant, let me start by asking you what your vision is for QURE.ai and what impact do you hope to achieve in the next 10 years?

GUEST SPEAKER – PW: Thanks, thanks, Bruno. Great, great to be here. And thanks for having me. So, our mission from day one has been to make healthcare more affordable and accessible. And we have done that in the last seven years of Qure. So, we have been around for seven years, where we have been able to make tuberculosis screening available in the remotest parts of the world. We have been able to get thrombectomies for stroke patients, again, in some of the most hard to reach places, like for example, Assam, in India, I mean, there is a hospital in a very, very rural part of Assam, and we are able to process CT scans and enable thrombectomies to happen for stroke patients there.

So, we are doing that. We are making healthcare accessible and affordable across multiple disease areas from tuberculosis to stroke to lung cancer. But the one key number that we always track is the number of patients that we touch. And to date, we have reached about 25 million patients in the last seven years, and most of that in the last two years, actually. And the goal for us from the beginning has been to reach a billion lives.

So, we want to be able to touch a billion lives across multiple therapeutic areas, again, across tuberculosis, stroke, lung cancer, heart failure, which are areas that we currently offer services for, our products for, but we're also going to expand into more disease areas. And I think the goal is always that one billion number. And that's a number that we always track across the organization. Everybody is working towards that number.

BH: Great. And that one billion, would that be in North America, Europe, Asia, Africa? What's your core markets, Prashant?

GUEST SPEAKER – PW: So, we actually initially when we started building the solution we thought the markets would be US or UK or sort of Western Europe but we also found that there is a real opportunity in many of the more developing economies, low and middle income countries so called where there is not enough radiologists available.

I mean if you have an X-ray system, but you don't have a radiologist available, the X-ray system is sitting idle many times. And so, we are enabling X-ray interpretation in many of those places. And so, for us, I mean, I think while the initial vision was around the more developed countries, we assume that the opportunity is much bigger in the, developed countries, we assume that the opportunity is much bigger in the, what is called the global health space, right?

And we, so the number of 1 billion lives, I think, will come from both developed countries as well as low- and middle-income countries. And but the majority numbers will be I mean, for example, India has a billion, billion and a half people. So obviously, large numbers will come from India, and very similarly for Indonesia or parts of Africa. So we'll see numbers from these countries. I think the billion, maybe about 60, 70 percent of that will be LMICs is my perspective. Again, it's a future vision. We have to see how we get there.

BH: And who's your customer? Who's paying for your service Prashant?

GUEST SPEAKER – PW: So, we work with a wide variety of customers we work with hospitals who are always the users right the hospital systems providers are the users across the world so there are hospitals who are paying for our solutions there will be global health fund for example, a USAID or a Gates Foundation or a global fund who are also paying for certain products, right? So, for example, tuberculosis screening is heavily funded by a global fund and they have about $15 billion for tuberculosis, HIV and malaria. And they operate in about 30 countries, all the LMICs, right, where tuberculosis is prevalent right now. So, we work with programs like that.

So, they are up under, we work with governments across many countries, we work with governments in Asia, Africa, Middle East, we work with the NHS. So again, there's a lot of government work we're doing.

And then we work with pharma. So again, pharma is a pair in some areas because pharma also has, they do clinical trials. For them, there is, they also have incentives in improving diagnostics because improved diagnostics means more patients that are using their interventions.

So, we are seeing that multiple kinds of customers of ours, but the end user for our solutions always is a physician. The end user is always either a pulmonologist or a neurologist, neurosurgeon, a radiologist, infectious disease specialist, ICU specialist, interventionist, or an emergency physician. So those are the guys who are typically using our solutions.
And sometimes even healthcare workers and nurses also.

BH: Yeah, great. And you just mentioned that you've been on this journey since 2016 and hope to reach, touch the lives of a billion people. You must have learned quite a bit over that time period. And if you would start again, would you do anything differently?

GUEST SPEAKER – PW: I think so. I sort of mentioned this briefly in the last answer to the last question that I think we did not imagine that there is such a big need for AI interventions in the global health space in the low- and mid--income countries. We thought that the market opportunity is going to be in the developed countries.

But just like, I mean, we have mobile phones, India or Africa did not have regular landlines, but they got mobile phones to begin with. I mean, a lot of people in India never had a landline, right? They just got a mobile phone. I think that is also happening with healthcare technology where the technology adoption is much better in areas where there is no, the quality of care is very poor already. So, we are able to actually bring access. And that is something that we realized only very late in our journey, maybe about three, four years into building Qure, we realized that there is a such a large opportunity to improve the quality of care or bring access to patients in the LMICs.

And if I were to start Qure again today, I would definitely start in those markets from the beginning and figure out how we can solve some of the big problems in these global health markets.

BH: And I mean, artificial intelligence gets a lot of attention these days and often in a very positive context, but also quite a number of people are raising concerns around AI. What's your experience? How are the health professionals or the governments, how are they looking at AI? Do they see it as an opportunity, a threat? What's your view on that?

GUEST SPEAKER – PW: I think there is some of both. I mean, some people think of it as a threat because it feels like AI is going to take away jobs, right? Some people think of it as an opportunity because AI is going to provide access to care in places where there was no access to care. Some people think of it as a threat because your AI is likely to make a wrong decision, right? So autonomous cars, for example, right? I mean, if AI makes a wrong decision on the road, somebody could die because of that.

So again, I think there are multiple reasons why AI is both a boon and a threat. And the main thing we have to figure out is how do we make sure that people are using AI effectively.

And so, it has to be a mix of AI plus human decision making, and AI supporting human decisions. And where required, the human can override the AI decisions, where required, the human can basically rely on the AI decisions and make sure that you're not spending a lot of time doing that.

For example, I'll talk about one of our products in this. So, we found that chest X-rays, I mean, there are about 1.3 billion chest X-rays taken every year and a significant chunk of them are not reported in a short amount of time. They're reported in weeks. A large number of them are not reported at all by radiologists. And the main thing to understand is about 80% of x-

rays are normal and about 20% will be abnormal. So, we built algorithms which can classify x-rays as normal with a very, very high degree of accuracy, basically 99.99% plus, right? So there'll be the error rate is one in 10,000, which means that out of 100 x-rays, now I can say these, not necessarily 80, but maybe the 60 or 70 x-rays are normal with a super high accuracy. Now, what that means is I can, the radiologist does not have to worry about those x-rays. They can really focus on what is abnormal there. And these x-rays can be sort of either flipped through or basically reported automatically by AI.

So, you have to figure out, my point is, you have to design these interventions in a way that AI is supportive to human readers or radiologists or other physicians also, right? Not necessarily radiologists, but also a general practitioner or a neurologist, in helping them making decisions.

BH: Yeah, no, that's a wonderful, wonderful vision. And you clearly have been leading, sort of embedding these new technologies in often quite difficult parts of the world. As you know, we're teaching students to become leaders in global health in the future. What advice would you give to our students who want to pursue a leadership role in global health?

GUEST SPEAKER – PW: I think my biggest advice would be think big in global health. And what I've seen is that global health solutions are very, especially in the tech side, solutions are very local in nature. Your digital health solutions are somebody is building a solution in India, somebody is building for Africa, somebody is building for Indonesia. But I mean, there is a I mean, the same problems exist across all of these countries. Right. And if you think big, you can actually really solve problems for a lot of people. And thinking big requires working with a lot of partners. So, it's about leveraging the community that is there. There's a big global health community from a lot of funders to NGOs, to governments, to even private hospitals that are involved. And so, you have to create those partnerships so that you can create more impact. But my advice is think about reaching a large number of people. And that is the vision. From there, you can then see how you can build quality solutions to get there.

I think the other advice for me, I think the big learning, again, you asked about learnings. For me, one of the learnings was the regulatory clearance, right? Because these products, the products that we are building in Qure and anything that is in the clinical pathway typically requires a FDA clearance or a CE marking. And every country from India to Indonesia to Thailand to, I mean, any LATAM country will have their own regulatory pathway.
So having a very strong regulatory focus is important because otherwise you may not be able to sell the products in multiple geographies.

So, making sure that a digital health product, while quality of the product is important, but also making sure that you get the regulatory clearances and focus on regulatory from the beginning so that you can deploy it and commercialize it in multiple markets. And that was something we learned a little late in Qure. So, something that definitely is a learning I would want to pass on.

BH: Yeah, and it is a learning that we've picked up in also previous podcasts. So thank you very much for sharing your advice. If you like this podcast and you want to listen to other entrepreneurs in health, don't forget to subscribe to this podcast series. And if you're

interested in reading more about the work we're doing in international health and tropical medicine, please click on the link provided below the podcast. Thank you for joining and thank you, Prashant, for joining us.

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