DevelopmentAid Dialogues

Episode 2: The Future of Medicine: Can Telehealth Revolutionize Global Healthcare Access? | A Conversation with Prof. K.Ganapathy, Neurosurgeon, Pioneer in Telemedicine

Hisham Allam

Welcome to DevelopmentAid Dialogues, our new project exploring the heart of humanitarian aid's most pressing topics. I'm your host Hisham Allam. Today, we delve into the transfer power of information and communication technologies and healthcare and health education. Joining us today, a pioneer in this field, Professor K. Prof. Ganapathy. Prof. Ganapathy is a distinguished professor and renowned neurosurgeon. He has been instrumental in advancing telemedicine in India. He's a former president of the Telemedicine Society of India and the current director of Apollo Telemedicine Networking Foundation and Apollo Telehealth Services. Good morning, Dr. Ganapathy, and welcome to DevelopmentAid Dialogues.

K. Ganapathy

Good morning, Hisham Alam. Thank you.

Hisham Allam

Doctor, what is telemedicine?

K. Ganapathy

The word telemedicine encompasses several things. Basically, it is a method of ensuring, delivering healthcare from remotely. The word tele is a Greek word meaning remote. Personally, I don't like the word telemedicine. The more appropriate word should be telehealth. So today, telemedicine has made geography free. History has made distance meaningless.

Telemedicine includes software, hardware, a beneficiary at one end. In the earlier years, we used to call him a patient. In the earlier years, we used to call him a doctor. But today, with the emphasis on promoting good health, on making people healthy, to keep them out of hospitals, the more appropriate word could be telehealth. Basically, it is a method of using technology to provide remote health care. In other words, to provide a health care provider anywhere in the world, even if he's physically not there.

Hisham Allam

So, there is a difference between telemedicine and telehealth?

K. Ganapathy

Medicine implies a one-to-one diagnosis and treatment. Basically, like when I was trained a half a century ago, a doctor, a patient goes to a doctor with symptoms and signs, and the doctor analyzes it, understands it, makes a diagnosis, and prescribes a medicine. When all this is done virtually with the patient on a screen, this could be a big screen. It could be on a smartphone and the doctor can be in another continent. In fact, the doctor can even be in another planet then it is called telemedicine.

Hisham Allam

To use smartphones, laptops to check patients through continents or from a country, uh, to a country. So, this needs pre, prepared infrastructure. We, need high quality cameras and, uh, high quality internet speed, right?

K. Ganapathy

Yes and no. We really do not require very sophisticated cameras. It is contextual. It depends entirely on the context for providing basic remote healthcare. I really do not require sophisticated technology. When I started telemedicine a quarter from a century ago, I managed with 128 KBPS. Today we talk about a hundred MVPs, we talk about one gigabyte per second, a bandwidth, and we talk about a, a good, smart form today has five cameras vary from 50 pixels to 100 mega pixels and so on. This is really not required. I could make a diagnosis and treatment for 90% of health problems with simple entry level smartphone and even without a smartphone. Nowadays, of course, in 2025, almost all phones are smartphone.

Hisham Allam

To have doctors or medical, service presenter, trained for this, they need to study something, at university, regarding this, or they get some kind of training after, postgraduates?

K. Ganapathy

That's a very good question. The whole purpose of telemedicine, the whole purpose of telehealth is for us to go into isolated, remote. Areas where there is no, where there's an acute shortage of persona. Of course, you can get a PhD in telemedicine from Harvard or Stanford. But honestly, the challenge, the thrill, the excitement in providing healthcare, what we have been doing for the harassment for years is to train school dropouts. All I need is a school dropout who has studied up to 6th grade or 8th grade who knows basically how to use a laptop and give me three months and I will train him in such a way that he will be able to act as what we call a telemedicine facilitator.

In hundreds of cases in the last several years, I have taught patients in the remote parts of India to use a stethoscope on themselves. They have placed the stethoscope, I have told them, go two inches below your collarbone on the left side, go four inches below your axilla, and so on and so forth.

Hisham Allam

Do you think that you will need also to raise the awareness of the patients, why go to telemedicine, not to a regular hospital and for a doctor, why money wise, he would prefer to get engaged in this technology than to, uh, have the, traditional way off checking out patients?

K. Ganapathy

The most important reason why people prefer remote health care is for simply that there is all over the world, not only in India, but particularly in developing countries, what I like to call the urban rural health divide. I'll give you a simple example. I'm a neurosurgeon, eight years ago, I published a paper which demonstrated scientifically that at that time, 920 million Indians lived in areas where there was not a single neurosurgeon. The 3,500 neurosurgeons who cater to 1.4 billion people. Therefore, instead of a neurological patient having to travel a minimum distance sub five to hundred kilometers, we today make the specialist and super specialist. Virtually come to wherever you are, saves enormous effort, time and money. I think it's a crime for a specialist today. to make a six-month-old baby accompanied by parents and grandparents to travel a thousand kilometers so that the cardiac surgeon can see the scar on the baby for follow up treatment. 90 percent of follow up today at least in my institution is done virtually and we strongly discourage people from physically coming back to the hospital.

Hisham Allam

Sorry for interruption. So, you, you are speaking about the general cost, saving money and saving time, but for the specific cost paying for the doctor's service, is it more expensive or less?

K. Ganapathy

Telemedicine departments all over the world are not targeted with the aim of making money. Whereas a CT scan, an MRI, an open surgery, a cardiac surgery, et cetera, et cetera, that is a could be a commercial venture. Telemedicine, by definition, at the best, we made both ends meet. Physically, I may in the past I've seen, let's say 100 patients who live within five kilometers or 10 or 20 kilometers or where I am physically located with telemedicine. I'm able to see 1000 patients who are more than 1000 kilometers away from me, and even a 5 percent of them turn out to be patients who require major procedures or major management then necessarily have to come to the hospital. So that 5 percent of patients who might get by doing a teleconsultation, which I may personally benefit from a commercial point of view, the 95 percent of people for whom I'm actually doing a very sophisticated tele triage. They are the real beneficiaries. They are able to get your opinion of a very experienced SAB specialist, super specialist for 2, 3. The maximum would they would be paying today? Uh, maybe is about 20 US dollars for 20 US dollars. You get a super specialist to examine you.

Hisham Allam

From what you have said about the, privacy, of the patients. I would like to ask how can telemedicine guarantee the privacy of the health information of the patients?

K. Ganapathy

Okay. Now, honestly, I am not a domain expert in privacy and security, but let me assure you that all of us, the end user, the doctor, the patient, everybody, we are very conscious of the fact that privacy and security are very important. I'm sure my IT staff, IT people have all been very well trained, and they have put in place systems which ensure a very high level of privacy and security. Thank you. Interestingly, just a few months ago, August 11th, if I remember the digital personal data protection bill, there are not many countries in the world which have such an attention. Punishment is no guarantee to anybody who tries to hack a system. But between you and me, we know that if somebody really wants to hack, even the White House can be hacked. However, most of our hospitals are JCI accredited, are internationally accredited, and therefore it is mandatory by law that we, that we have built in privacy security as is now currently available in Europe, UK, or the United States.

Hisham Allam

Speaking about technology, now we are seeing how AI, the artificial intelligence, is developing, the next phase of the telemedicine that you can see an AI diagnosed or machine learning diagnosed for patients and providing kind of treatment plans.

K. Ganapathy

Most of the work in AI has been done by scientists of Indian origin who work in Google, Microsoft, etc, etc. The CEO of Google, the CEO of Microsoft and many, many, many other Fortune 50 companies are of Indian origin. So, India has a. in that particular that's how you say affinity towards AI. If the western, westerner say that VP is 120 by 80, it is just being assumed that normal blood pressure of an adult should be 120 by 80. But today we have got enough data of more than 25 million patients who have been followed up for several years and the last four years we have now developed what is called a personalized Thank you Master Health Checkup. Today we believe that healthcare should be personalized based on your genomic studies, based on your clinical history, your parental history, and so on and so forth.

So, this is something very interesting. Genomics have taken a big place and AI plays a very, very important role in this. Before I conclude about AI, I belong to the BC era. Before computers, before Christ, one and the same. I was the last set of neurosurgeons in this country who were trained before a computer was even available in a hospital.

I very strongly believe that AI, unlike what is probably being promoted by multinational companies, the hype about AI is so much we forget that AI is only a tool. Tool to achieve an N, not an N by itself. AI is an enabler. I still think that I, I like to call it NI, native intelligence, natural intelligence. AI cannot ever replace the God-given NI.

Hisham Allam

In India you have a diverse of linguistic and cultural landscape. I think there is over 700 languages and delicate are spoken. You think it's a challenge for a telemedicine services provider?

K. Ganapathy

Absolutely. I mean, India is not a country, it's a continent. Sometimes I think we are a separate planet as much, but the one very encouraging thing is, as I mentioned earlier, the political will plays the most important part. Today, the government of India has started on a very ambitious project of trying to ensure universal health coverage. Initially for 500 million Indians. Below the poverty line. I mean, not really BPL. That's the wrong word to use. In the lower socioeconomic strata, corporate hospital like Apollo, we have a standalone not for profit foundation called the Apollo Telemedicine Foundation. Similarly, most of the big corporate hospitals have a separate not for profit illegal division.

All the 540 medical colleges in India today are mandated by law. To have a telemedicine nodal officer, and similarly, the National Institutes, medical universities, etc, etc, every one of them have got the telemedicine department. So, there are different business models. The most interesting thing is the insurance company, the United States, uh, Insurance companies allow reimbursement for teleconsultation. And if I remember the statistics right, the number of teleconsultations in the U. S. jumped 25-fold just because of the single order that teleconsultations can be paid for. Similarly, Indian insurance companies, it has not yet been implemented. The administrative details are being worked out. But Indian insurance companies have in principle agreed to reimburse teleconsultations.

Hisham Allam

You made me think about people in conflict zones. How can telemedicine provide services to people in conflict zones?

K. Ganapathy

ok, there are different ways of doing it. One is the simplest, crudest way is that your symptoms and signs are transferred through the Internet to a general doctor, let us say, or to a medical constructor. We may not even have a doctor. We could have a paramedic, a physiotherapist, occupational therapist, psychologist, et cetera, et cetera, et cetera, trained in this. And then for simple things, they would take the decision. Problem is escalated. To a specialist to a super specialist and so on. So, answering your question, it's making a remote diagnosis and giving treatment remotely. They are e-prescriptions. All this is standardized. There's a standard operating procedure for every single facet of teleconsultation.

However, please understand that teleconsultation is actually a very sophisticated form of tele triage. It is not possible for us to treat every single patient through the internet. So, my job is to decide which patient mandatorily, compulsory request to physically go to an institution of higher learning to meet the specialist to understand and then a physical examination is required. Even today, for example, a rectal examination of a general examination and internal examination may still be required and afford the ultrasound of the pelvis may not suffice. I assume, all my doctors are trained in such a way that we assume that they use clinical judgment, clinical wisdom on each individual case on that particular day at that time by that doctor to decide whether a remote consultation is will suffice on.

Hisham Allam

So, you train your students or your, doctors on how to judge clinically, what kind of patients can receive the telemedicine service and who cannot, what kind of sickness is not compatible for telemedicine?

K. Ganapathy

The answer to your question is the same contextual, contextual, contextual. It depends entirely on the context. From a purely theoretical point of view, there's nothing really, which cannot be done remotely with the technology available today. I would say 80 out of 100 teleconsultations which we give can be managed. Through remote healthcare without my having to put my hand on the abdomen of the patient or my having to look to put my hand on a tumor or growth on a lump or whatever it is. I can peer into the interior of the stomach today with a tele endoscopy or if I have the technology sitting in a big city I can look into the interior of the stomach. In a patient several continents away, and this has been done also.

Hisham Allam

Can you play the role of the devil's advocate and tell me what are the disadvantages of the telemedicine?

K. Ganapathy

I wouldn't like to consider myself a devil's advocate. I would like to consider myself as a very mature clinician and a very mature clinician who is an evangelist who has spent the best part of his life in promoting telemedicine. As far as possible, I would still like to do a face-to-face consultation on day one.

So, I would advocate telemedicine only when A, it is not possible for a face-to-face consultation, B, it is very time consuming, labor intensive, economically very expensive, and so on and so forth. Number two is there are several instances where find you. Maybe MRI is good enough. Maybe an angiogram is good enough. But when I tell a person, look, you need to undergo a surgery on the medulla oblongata inside your brain. However good the TV screen is, however good the audio, the video is, nothing like a face-to-face contact. The body language, so your body language is very, very critical, both from a doctor's perspective and the patient's perspective, and this can best be done in a face-to-face consultation.

Sometimes, unfortunately, all are equal, but some are not. More equal than others. Monetary considerations still play a role at 20. Maybe a very, very reasonable amount for a tele consultation, but my patient, there's no way he can afford 20 and therefore he will have to physically go to a government hospital when every treatment is free. So monetary constraints also do play a role. Then, of course, audio video. I'm not going to the technology part of it. But if your internet is very unstable, I definitely do not want a teleconsultation. If your video quality, if your bandwidth, if the quality of your camera, there are so many technical issues involved. Unless I have 100 percent stable internet, unless my audio and video are stable, I definitely do not want to do a teleconsultation.

Hisham Allam

This personal communication between the patient and the doctor, when you follow up with the same doctor who had the record of, your illness, is something important for, the, for the patient himself to have this kind of mutual trust and interaction?

K. Ganapathy

Yes, absolutely. We use the term website in the olden days. Uh, decades ago, we used to talk of bedside manners. Medical students when you're giving a tele consultation, the discerning patient who is 3000 miles away. Well, who's waiting a death sentence is about to be pronounced. He's going to be told that he had a heart attack, that he requires tenting, he requires bypass surgery and so on. He's watching you. So please look at the camera, look at him and dress well, dress properly, ensure that the lighting is on you as if it was face to face. Do not look at the mobile phone. Do not

talk to somebody else when you're looking at the report. For that 300 second, the only reason for your existence is to sympathize, empathize with the beneficiary. And believe me, you don't need to be a PhD. You don't need to be a professor. Every patient can instinctively, instantaneously decide whether the tele consultant or the other end is really involved with my management or is just doing it. So, but website manners, I think, is very, very important.

Hisham Allam

How can public private partnerships, the PPP, be leveraged to drive innovative and investment and?

K. Ganapathy

I'm so happy you're asking me this question in the end. In India, almost 65 percent of healthcare is now delivered through the private sector. Government has realized and accepted ehat by itself, it can never, ever provide them coverage to all implementing modern digital health to PPP could address the issue. And I'm very happy that at a personal level, I was involved nine years ago, India's first digital health PPP project was carried out by us in the Himalayas at a height of 14,500 feet.

An entire district with a population of very small population of 34,000 people. The temperature in winter was minus 25 degrees centigrade. It was impossible for the government to get doctors to stay there in such a very, very difficult conditions. So, they entrusted it to us. Today it is nine years, and this has been used as a benchmark.

We have published several papers, written chapters and books. We also run the world's first 24 by seven tele emergency services all through public private partnership mode. And interestingly, we did the cost of, we did the detailed health economics study, which the government is now using. We showed that over a four-year period, the government is spending just. For two U.S. dollars, which they pay to a private organization like ours, Today, my department alone does about 20, 000 e transactions every single working day to 12 major public private partnership projects in about nine states in India.

A lesson which I have learned in the last two decades is do not try to do crystal ball gazing. Don't ever try to predict the future because the future is too far. I think we are on the way. When I say we, I'm Particularly talking about India, we are on the way to achieve, reach a critical mass.

Uh, all NASA and ISRO repeatedly mentioned that you need to arrive at a critical mass for a successful takeoff. I think we are going to get that critical mass very soon and I am very confident, I'm very optimistic that in my lifetime I am going to see digital Telemedicine, telehealth integrated into the core of the healthcare delivery system. In 10 years from now, I think face to face visits will be an exception and remote consultation will be the norm. If it can be done in India, it can be done anywhere in the world. Thank you Hisham and DevelopmentAid dialogues. It is a great talking to all of you.

Hisham Allam

Thank you. Thank you again for these rich insights. And for our audience, please remember DevelopmentAid is here to equip you with the resources and the connections to make a difference in the world.