

The Telemedicine Landscape in Pakistan- Why are we falling behind?

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Abstract

Telemedicine is the provision of healthcare using information and communication technology-based methods. In the past decade, the sector has grown exponentially and become a billion-dollar industry in the developed world. While telemedicine holds the promise to transcend many of the barriers impeding healthcare delivery in emerging markets, unfortunately Pakistan has not been able to obtain any significant benefit from these advancements. The lack of a regulatory framework and lack of interest from the government makes it difficult for new companies to set up projects in Pakistan which will deliver healthcare in innovative, cost-effective ways. A survey conducted across different levels of the medical community showed that only a small minority of the medical community is familiar with the concept and applications of telemedicine. From a business perspective, the landscape is ripe in Pakistan. Since other developing countries have been able to use telemedicine effectively, Pakistan should also look into the options available and catch up soon.

Keywords: Telemedicine, Healthcare, Technology.

Introduction

Telemedicine is the provision of healthcare through information and communication technology-based methods. It is a flourishing industry, valued at billions of dollars globally¹. In emerging markets, it has been of particular interest for the past few years due to its ability to transcend the common barriers which prevent people from accessing healthcare. These include long distances to a functional health facility, lack of doctors in rural areas and the high cumulative costs associated with a doctor's visit (cost of transportation, income lost due to time of work and the doctor's fee).

Telemedicine holds the promise of being able to connect patients in the remotest of regions to qualified doctors in urban areas. It is not dependent on time, with models working in real time (patient talking to doctor directly) and 'store and forward' methods (an assistant uploads all

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patient information into a database, and the doctor responds with his/her recommendations later).

Pakistan, like most emerging markets, has a healthcare problem. The rapid increase in population combined with an unstructured system of healthcare has led to an uneven distribution of doctors, which manifests as a chronic shortage of doctors in peri-urban and rural areas. In 2016², there were 0.8 doctors per 1000 population. Also, like other emerging markets, there is a neglect for healthcare in general, with Pakistan having spent only 0.9% of its GDP on healthcare in 2014, which was the lowest in all of Asia.³

Approximately 61% population lives in rural areas⁴, but lack of infrastructure, logistical difficulties and limited opportunities for progress prevent many doctors from practising there. The lack of qualified doctors leads to a fruitful markets for practitioners of traditional medicines and quacks. Hospitals are chronically understaffed and over-burdened. There is a very limited to almost no check on the qualifications and quality of private providers on ground.

Realising all the promise that telemedicine holds in revolutionising healthcare in emerging markets, the governments of India, Bangladesh, Kenya, Uganda, among others, have implemented telemedicine programmes which are providing healthcare through either audio, video, text messages and different applications (apps). These programmes have revolved around maternal and child health, pregnancy, prevention and diagnosis of acquired immunodeficiency syndrome (AIDS) etc. Sub Saharan Africa for example, implemented 487 unique telemedicine programmes from 2006 to 2016.¹¹ In more advanced markets, like India, companies are now beginning to develop chatbots, using artificial intelligence (AI) to solve common healthcare problems so patients do not need to visit the doctor for minor ailments at all.¹⁰

With so much exciting news coming from emerging markets, one has to ask the question, where does Pakistan stand in all this? According to the World Health Organisation (WHO) telemedicine survey of 2016, Pakistan has no telemedicine laws or regulations in place⁵. There is no framework on what sort of approval

you need to launch a programme and what permissions are required from which departments. Healthcare has been devolved to the provincial level and unfortunately, officials in most provincial health departments are not aware of the existence or benefits of telemedicine. The Pakistan Medical and Dental Council (PMDC) code of ethics, written back in 1970, has a mention of telemedicine in a vague context, providing no clarity. The lack of any regulations and framework make setting up any telemedicine programme difficult, especially for international corporations who like to have a legal safety net before starting projects in new markets.

It's no surprise that given the lack of infrastructure for telemedicine, the medical community is also not familiar with its latest developments. The authors conducted a nation-wide survey of doctors across Pakistan. A total of 100 doctors completed the survey, with their experience levels ranging from final year medical students, house officers, post-graduate trainees to consultants. Doctors from all the four provinces were included. The survey was conducted over a period of two months, from 6th July 17 to 2nd September 17. The questions in the survey assessed the doctors on their general knowledge of telemedicine, awareness of existing projects in Pakistan and the laws/regulations surrounding the field, as well as how telemedicine could be used to make their own work more efficient. Responses showed a discouraging state of their knowledge of the field. As many as 63(63%) of them were not familiar with the concept of telemedicine at all. All of them (100%) were not aware if there were any laws/regulations surrounding the field. And 77(77%) had no idea if there were any telemedicine programmes running in the country.

When asked about the benefits and how telemedicine can help their working efficiency, 47(47%) responded that almost half of the patients who visit their outpatient departments (OPDs) with minor complaints could have been handled outside the hospital using telemedicine consultations. Also, 70(70%) of the respondents believed that text message campaigns used to disseminate health education and preventive measures of diseases can help have a positive impact on the health of the population. And, 90(90%) of them were of the opinion that connecting basic health units (BHUs) in rural areas with urban centres through telemedicine will significantly improve the outcomes of patients in the rural areas.

As for the existing prevalence of telemedicine in non-official context, 97(97%) of the doctors surveyed had diagnosed and prescribed medicine over the phone, with frequency ranging from about once a month to almost every week.

Doctors who are currently in their house job and residencies were neutral to the role the government had to play in the promotion of telemedicine, but almost all the consultants and heads of departments agreed that governmental non-interest was a major reason why they were unable to set up a telemedicine programme within their hospital.

The doctors also did not feel that patients' literacy and familiarity with technology was a barrier to the adoption of telemedicine programmes. Finally, 50(50%) doctors responded that upto 75% of their patients were skilled in the use of cell phones, apps and other software to be able to make use of any telemedicine programme.

From a business perspective, the landscape is ripe in Pakistan. In some developing countries, more people have access to a mobile phone than to a toilet, electricity, or even clean water. In Bangladesh, of every 100 people, just 55 have access to sanitation services while 64 have mobile subscriptions⁶. While exact figures for Pakistan are not available, they are probably similar. The launch of 3G and 4G services by telecommunication companies has brought the internet within reach of almost everyone. It has now even overcome the difficulty in payment channels, with some form of mobile money payments available in all remote areas.

With increased ownership of mobile phones, better coverage of internet services and the easy availability of software, a number of telemedicine startups have been founded in Pakistan. Their services include video consultations with a doctor, talking to a doctor over chat, medication delivery and home sample collection, along with discounts. A number of them refer patients to doctors within their vicinity for an in-person check-up when required. Most of them are at an early stage of operations, and it is yet to be seen how they fare in the long term.⁷

A few wider-reaching programmes have been up, mostly with aid from international organisations. Almost all telecom operators have set up a doctor's helpline with varying success. Some are still functional, while others have been shut down or limited the scope of their services. Projects partnered with a telecom operator have the potential to reach millions of customers, e.g a multinational company is providing telemedicine services to hundreds of thousands of low-income patients nationwide.⁸

While the sector brings new opportunities, it also has its limitations. The idea of speaking to a doctor remotely using technology is so new that building patients' trust in

the service requires effort. The issues of having uninterrupted high-speed internet in the remotest of regions has led to some companies experimenting with satellite connectivity. There is a lack of trained staff, be it paramedics or nurses, to check vitals of the patients and assist in any other physical examination the doctor might require.

Setting up any telemedicine programme requires complex, multi-level partnerships between organisations from different sectors. A typical programme will be a partnership with a healthcare provider, technology firm, hardware/software vendor and the payment channel company. A significant investment of time, resources and capital goes into setting up a programme. Once set up though, the maintenance costs are minimal. A study into what causes a programme to sustain or fail has shown that government partnerships are critical for the success of any program.⁹ Partnering with the government allows the programme to reach massive scale, as well as to secure subsidies in costs to keep the end user price low and provide healthcare at reduced rates for the poorest. With all this kept in mind, it is essential that these programmes get some support from the government to keep them sustainable and functional.

The Punjab government's information technology (IT) sector has begun to realise the benefits of telemedicine and launched an ambitious project connecting 250 rural BHUs to a central hub through video-link, where doctors will be present to provide consultations. Such a project, if it leads to fruition, will provide proof of the concept, feasibility and benefits of telemedicine as a whole for rural areas.

It is understandable that due to the acute problems Pakistan's healthcare system faces, new and innovative ideas have to take a backseat and wait their turn, as officials focus on the many pressing situations our system faces around the year. However, since traditional methods of healthcare delivery have not gotten much better, or one could argue, have only gone worse, it is about time we looked into innovative ways of providing healthcare that may overcome the barriers the traditional brick-and-mortar model faces. Since all emerging markets face similar problems, the success of some telemedicine programmes in those markets serve as good templates to build our own programmes on. We should be looking at ways to deliver healthcare to a wider geographical range more cost-effectively. Telemedicine has been shown to reduce patient load in hospitals, decrease unnecessary visits and admissions, and curb the market of quacks by

providing easy access to a qualified physician. Hopefully in the near future we will be able to catch up to some of the emerging markets in integrating technology and healthcare to provide a solution to our many problems.

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