Utilization of Telehealth in India

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Abstract

Health care technology is in use for a decade or more in India. The use of technology in healthcare especially in public health is very common due to the recent development in Information Communication Technology. The costs of equipments in ICT are generally falling. The present paper is looking at various studies on Telehealth technology. Based on the data available on the utilization it also tries to explain the utilization pattern. The utilization of such systems depends on various factors. They include, costs of setting up and maintaining such systems, the availability of man power, e-readiness, availability of equipments, cost of access, enabling regulatory environment, sustainability of such systems and so on. The Telemedicine user meet held in May 2007 at Ahmedabad, India, there were 30612 super specialty consultations since the inception. As per the data available, there are 563 super-specialty consultations per month in 10 centres in India.

Introduction

The present paper is a study based on the available data related to utilization of Telehealth facility in India. The utilization of a Telehealth system depends on various factors. Each country in the developing world experiences different problems in implementing the Telehealth. The present paper tries to study the impact of those factors affecting the utilization of Telehealth in super specialty care. It also tries to study the problems faced by some of the projects in the developing countries.

This paper infers that there are some similarities in the problems faced by

different Telehealth projects. In addition it is also important to address the sustainability of such systems.

Based on the literature the factors influencing the telehealth consultations are represented in Figure 1.

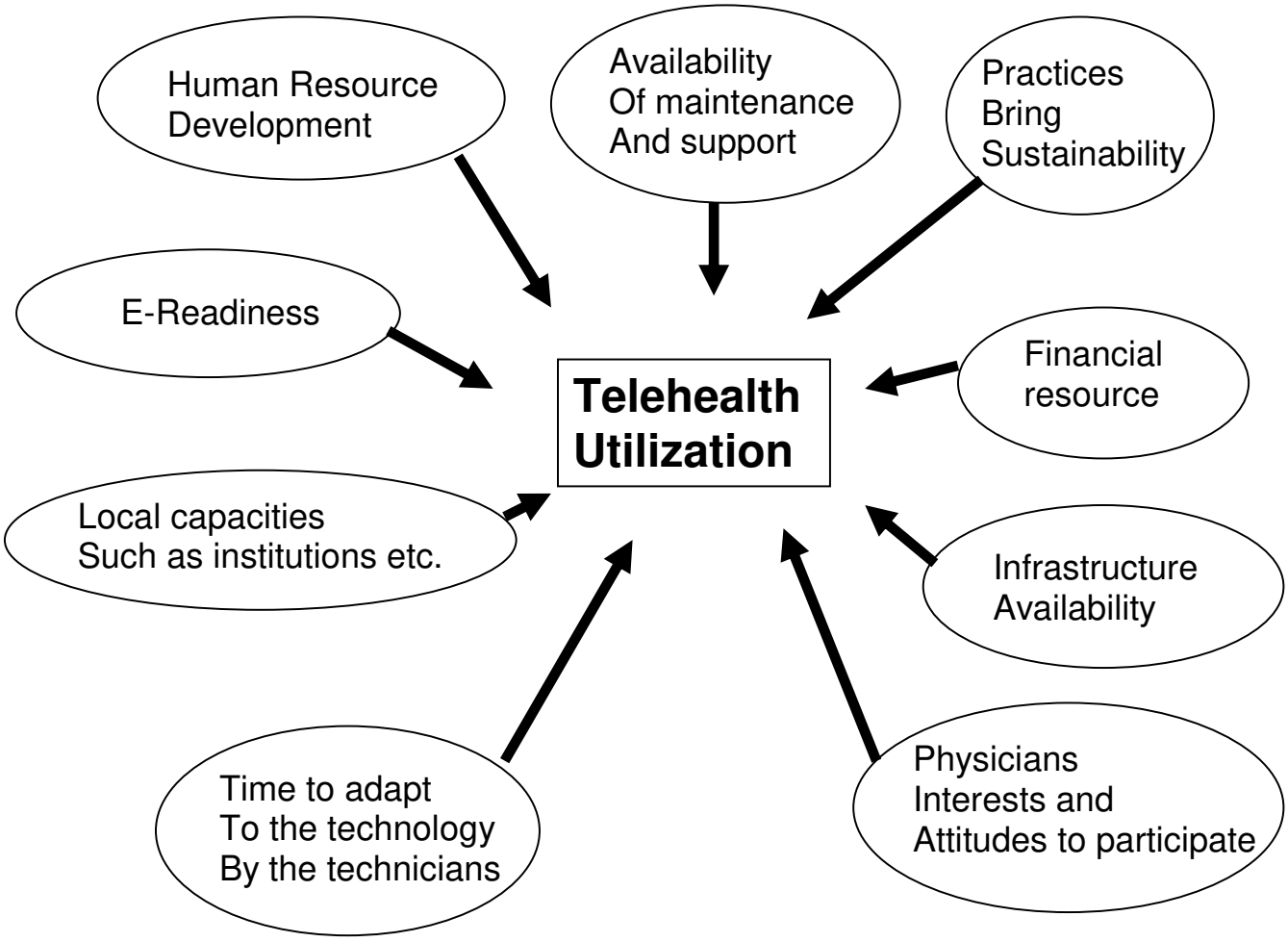

Figure 1 Factors influencing Telehealth Utilization in developing countries

The telehealth consultations are dependent on various factors such as,

1. Human Resources availability
2. E-Readiness
3. Time taken to adapt new technology by the technical man power
4. Interests of the physicians and their attitudes
5. Availability of infrastructure
6. Financial resources

7. Availability of support to maintain the systems
8. Sustainable practices

The following paragraph discusses the above factors in details. The experiences of different countries suggest that the performance of the telehealth systems are affected due to one or more factors mentioned above. There are also instance some initiatives are performing well in spite of non availability of some of them. There are initiatives which lack sustainability.

Telehealth Utilization and related problems

Elder and Clarke(2007) in their paper on the IDRC's experiences of Telemedicine in developing countries have brought out some interesting findings. According to the paper the hospitals in Uganda consulted patients who did not live near hospital. The project faced with challenges related to procuring appropriate equipment and setting up infrastructure and difficulty in connectivity. The experience has given a few learning. (1) Importance of understanding of how appropriate local capacities both technical and institutions should be built, (2) The need to focus on the "e-readiness" of the country with regard to availability of equipments, cost of access and an enabling regulatory environment. (3) Greater consideration about the underlying question whether Telehealth viable means of solving health problems in developing countries.

Unlike the African Telehealth experience, in India, the problems such as procuring appropriate equipment, infrastructure and connectivity were not faced. These were well managed by the experienced Government agency called Indian Space Research Organization. In addition, the state of art infrastructure and network availability in the country and the active role in preparing the state governments by the ISRO has prepared them ready to launch the project.

The IDRC's experience of India project (Pan Asia Networking) (Elder and Clarke 2007) faced challenges with respect to sustainability. And the Indonesia experience using Internet Technology found Human Resource capacity building,

particularly it has taken more time for training to facilitate and adoption of telemedicine technology. It highlights the importance of Human Resource Development in sustainable implementation of projects.

In the ISRO's experience the problems faced were similar to the Indonesia's experience. The Human Resources were the scarce for the day to operations. Here, the adoption of the Telehealth technology was never a problem. But the availability of man power and continuity of a person as a system administrator for more than six months were the problems. In spite of the large number of graduates qualifying the Engineering and Computer Applications courses, it is very difficult in getting them for the Telehealth activities. The boom in the IT sector attracts the best trained personnel in India. This is another reason for the high turnover rate among the technical personnel in Telehealth projects in India.

Telehealth Utilizations in India

Recent Telemedicine Users' meet held in Ahmedabad by the ISRO during May 2007 has published some data on the hospital-wise super specialty tele-consultations. As per the data there were 30612 super specialty consultations were made during the last 5 years. Table 1 gives the details of the consultations. As per the data Narayana Hrudayalaya (NH Blore) a cardiac hospital in Bangalore top with 18070 super specialty consultations in last 5 years. This was followed by Apollo Hospitals, Chennai, Sri Ram Chandra Medical College (SRMC), Chennai, Amrita Institute of Medical Sciences(AIMS), Cochin and so on. The data on patient per annum shows more number of tele-consultations was made by NH Blore followed by SRMC, Apollo Hospitals, Chennai(ApolloCh) and so on.

Narayana Hrudayalaya consulted disciplines such as Cardiology, Cardiac Surgery, and Neurosciences and so on. They are predominantly tele-cardiology in nature. On the other hand Apollo Chennai there is no clear cut data available on the super specialty consultations. On the data on the remote end suggests Pediatrics consulted about 1220 cases since the beginning, followed by General Surgery. In case of Sri Ram Chandra Medical College there was no clear cut

distinction on the disciplines provided. Amrita Institute of Medical Sciences consulted across 21departments.

Among the government run hospitals, Post Graduate Institute of Medical Education and Research(PGIMER), Chandigarh consulted 1106 cases. Out of 1106 cases in 20 disciplines, Obstetrics and Gynecology was the most consulted discipline, followed by Pediatrics, Pulmonary Medicine and Orthopedics.

Other two government hospitals which consulted more tele-consultations are Sanjay Gandhi Postgraduate Institute of Medical Sciences(SGPGI,Luck), Lucknow with 754 consultations, Tata Memorial Hospital(TMC Mumbai), a Cancer Hospital at Mumbai with 550 consultations, and All India Institute of Medical Sciences(AIIMS), New Delhi with 450 consultations.

Table 1 Super specialty consultations

Sl. No.	Duration* (1)	2002-2007~ (2)	# Patients (3)~	Patients/month (rounded) (4)~	Patients/annum (rounded) (5)~
1.	5.5 years	NH Bl're	18070	274	3285
2.	4.5 years	SRMC	3300	61	733
3.	5 years	AIMS	1270	24	254
4.	6years	ApolloCh	3932	55	655
5.	1.5 years	Fortis	1132	63	755
6.	5 years	SGRH	48	1	10
7.	3 years	TMC Mumbai	550	15	183
8.	2years	PGIMER,CHA	1106	46	553
9.	4 years	SGPGI, Luck	754	16	189
10.	5 years	AIIMS	450	8	90

Source: Proceedings of the Telemedicine Users Meet 2007, ISRO.

~ Data published on the Proceedings of the Telemedicine Users Meet 2007 [(2), (3) and (4)]

* extrapolated from (3) and (4)

Specialty Consultation per annum

Figure 2 is a representation of Super specialty tele-consultation conducted by various hospitals per annum. The figures suggests that hospitals who started the Telehealth modalities earlier have consulted more than the recent ones. The hospital which was exceptions to this is, Fortis(755) and PGIMER(553), Chandigarh. Both the hospitals in a span of two years have consulted more than 1000 consultations.

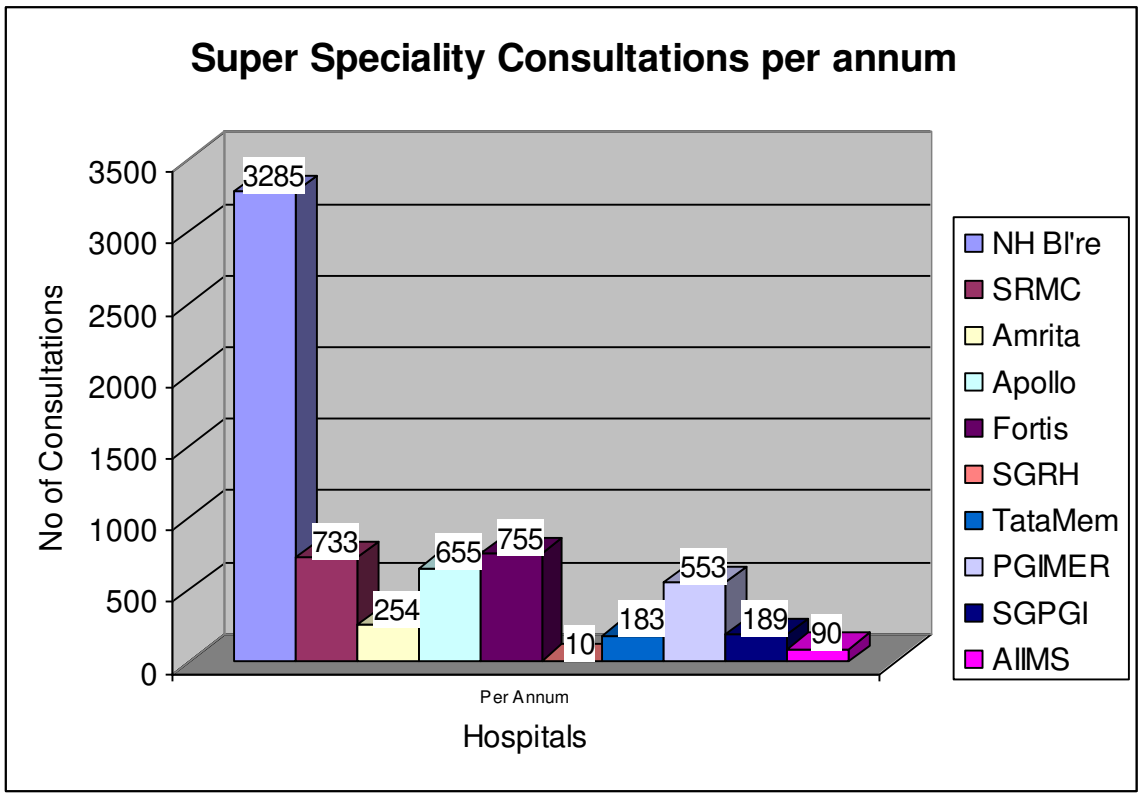

Figure 2 Super Specialty Consultation per annum

Source: Proceedings of the Telemedicine Users Meet 2007, ISRO.

As per the proceeding there are 40 super specialty hospitals connected to the network. Data was available only for 10 hospitals. Figure 2 shows two groups of hospitals, (a) Private run hospitals and (b) Government Hospitals. The number of consultations made in private hospitals ranges from 3285 to 755 and consultations in Government Hospitals ranges from 10 to 553. The private

hospitals are either corporate hospitals bodies or not for profit trusts or societies. Among the government run hospitals the PGIMER,CHA has consulted 553 cases in a year annum. It has performed better than some of the private run hospitals. The Sir Ganga Ram Hospital(SGRH), New Delhi has consulted only 10 cases per year. This is a not for profit trust hospital.

From the above it is clear there is no difference between the private and government hospitals in number of tele-consultations. In some cases the government hospitals performed better. In case of the specialty-wise consultations, there is no difference between the private and government hospitals. The specialty hospitals such as Cardiology and Oncology are performing well. This shows the number of cases consulted in different disciplines in other hospitals less of these specialties. There are also two eye hospitals that have performed well. The data on them were not included in the consolidated figures.

According to the proceedings there are few reasons mentioned for underutilization of the telehealth facilities. Some of them are given below.

1. Non availability of qualified personnel
2. Increase in workload to physicians
3. In Continuing Medical Education(CME) it was mentioned that there was no monetary benefit to conduct CMEs online.
4. System failures
5. No maintenance support after installation

Conclusion

In spite of the limitations, the Telehealth in India is performing well when compared to other developing countries. India is leading the Information and Communication Technologies and Space Technology has made a well performing country in Telehealth. The problems such as e-readiness, non-availability of infrastructure are absent in the country. The problems other

countries such as inappropriate selection of equipments(Uganda), are taken care by Indian Space Research Organization. The only problem to be addressed is the non availability of qualified man power to manage the system. This will also be addressed once the country has a policy for a specialized training in the Medical Institutions in the area of Telemedicine Technologies.

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