

TELEMEDICINE-FUTURE PROSPECTS AND CHALLENGES

Ranu Singh Chauhan, Student of MBA(HM), College of Hospital Administration, TMU, Moradabad

Email:-ranu1992234@gmail.com

Add : 16/696 singh visram house urrhat, Rewa (M.P)

ABSTRACT

The challenges faced and the methods implemented by the healthcare groups in introducing telemedicine in Indian settings are discussed in this article. This research paper discusses about branches and future prospects of telemedicine in India. Telemedicine is a health-care delivery concept that enables distant patients especially in rural areas to be examined by the physicians using telecommunications technologies. It is given that majority of population dwells in rural areas in developing countries that represent the largest patient base of variety of health issues. Access to basic healthcare, doctors, and treatment is hardly reachable. The telemedicine market has witnessed spectacular rise lately mainly because of convergence Information technology Communication & Healthcare. The paper also briefly discusses about the type of telemedicine in developed nations.

Key words – telemedicine types, health-care delivery, challenges, and future prospects,

INTRODUCTION

Telemedicine is a combination of information technology and telecommunication to provide health services. The rapid advance information technology and telecommunication technology are revolutionizing life and business around the world. First setup of telemedicine Boston Airport to Massachusetts General Hospital 1967. Telemedicine can be very helpful in the developing countries like India, where the resources and scares and the beneficiaries are too many. According to WHO : “The delivery of health care services , where distance is critical factor , by the health care professionals using information and communication the exchange of valid information for diagnosis , treatment and prevention of diagnosis , treatment and prevention of diseases and injuries , research and evaluation and for continuing education of healthcare provider ,all in the interests of advancing the health of the individuals and their communities.” Information technologies can be an important tool for empowering health care workers and enabling them to be more productive effective in their work. Telemedicine can always aim to support health workers providing care as to close to the patient as possible. Telemedicine can strengthen care at the primary health care and secondary health care level. Telemedicine should be used to meet the local needs and adequate technical support for users must be made available. There is a strong likelihood of failure of program, if we could not satisfy the local needs of the people .Human factor is very important in telemedicine , it will depend not only upon the availability of the IT equipments and telecommunication facilities, but more important is the familiarity of the local people to use such gadgets with ease and comfort. Telemedicine is offered in Indian by these institutions-

- AIIMS, DELHI
- SGPGI, LUCKNOW
- PGI, CHANDIGARH
- APOLLO GROUP OF HOSPITALS
- FORTIS ESCORTS HEART INSTITUTE, DELHI
- ASIAN HEART FOUNDATION
- IGMC ROHTAK
- SCBMC, CUTTACK

OBJECTIVES

Following are the objectives of this research study:-

- Telemedicine: A new healthcare delivery tool.
- To observe the need and importance of Telemedicine.
- Telemedicine: Development in India.
- Challenges associated with Telemedicine.

METHODOLOGY

This research paper is based on secondary data and the study is refer by Journals, books and news paper .Some websites and YouTube videos have also been observed to comprehend the theme.

RESULT

The result presented in this paper suggests that optimum utilization of technology in health care delivery system requires overcoming barriers at multiple levels including policy, resources and socio-cultural level. Successful implementation of telemedicine entails involvement of all the stakeholders, namely the specialists, paramedical personnel, doctors, technical staff, coordination staff, policymakers and, most importantly the target community, from the design stage itself.

DISCUSSION

Telemedicine, providing health care at a distance, has emerged as an important means of important areas where the full range of clinician services are unavailable. There is worldwide need to improve delivery of health care in both qualitative and quantitative terms, particularly

respecting its cost-effectiveness. This is especially true for health care delivery in remote areas, introduction between health care professionals at differing sites, and interaction between health professionals who remain at their work site while interacting with patients at their home.

There are three core types of telemedicine -

- 1. Store-and –forward**
- 2. Remote monitoring**
- 3. Real-time interactive services**

1. **Store- and –forward** – store-and-forward telemedicine exceed the need for the medical practitioner to meet in person with a patient. Instead, data such as medical image or biosignals can be sent to specialist as needed when it has been obtained from the patient. This practice is common in medical fields of dermatology, pathology and radiology.
2. **Remote monitoring** - Remote monitoring is also called self-monitoring or self-testing , remote monitoring uses a range of technological devices to monitor health and clinical signs of a patient remotely. This is extensively used in the management of chronic disease, diabetes mellitus and asthma. Benefits of remote monitoring include frequent monitoring, cost effectiveness and greater patient satisfaction.
3. **Real-time interactive services** - Interactive services can provide immediate advice to patients who require medical attention. There are various different mediums used for this purpose, including phone, online and home visits. A medical history and consultation about showing symptoms can be undertaken, followed by assessment similar to those usually conducted in face-to-face appointments.

Telemedicine is distinct specialty and with its application in various fields of medicine, it is inevitable to develop different sub specialty in this branch -

- a. Tele-radiology
- b. Tele-pathology
- c. Tele-cardiology
- d. Tele-surgery
- e. Trans-telephonic Electro cardio graphic monitoring

The telemedicine has got various numbers of challenges to overcome before it can be integrated with national health care delivery system. Infrastructure, financial unavailability, quality of transmission, technical constraints, dispersion of liability, government support, patients fear and unfamiliarity, acceptability to providers and benefits , literacy rate and diversity in languages etc. Healthcare has become one of India's largest sectors – both in terms of revenue and employment. Healthcare comprises of hospitals, medical devices, clinical trials, outsourcing, tele-medicine, medical tourism, health insurance and medical equipment. Telemedicine in India has outgrown every other sector in the healthcare sector by registering an annual growth trend of nearly 40%.

Telemedicine market is an emerging sector in India. Theoretically it is far easier to set up an excellent telecommunication infrastructure in suburban and rural India than to place hundreds of medical specialists in these places. It has been realized that the future of telecommunications lies in satellite-based technology and fiber optic cables. A report by Government of India, showcases that telemedicine is a fast emerging sector in India. In 2012, the telemedicine market in India was valued at US\$ 7.5 million, and it is expected to grow at a CAGR of 20 per cent to US\$ 18.7 million by 2017. In India, 70% of population are poor and often live in difficult to reach. With telemedicine, more than 300,000 people have already been benefited. Telemedicine in India has a market of more than \$500mn. The future of telemedicine at the moment looks promising with governmental backing and private initiative. An early move by private enterprise is highly recommended in the sector.

Access to broadband internet connectivity in rural areas is steadily increasing and the adoption and penetration of internet has shown tremendous growth. Considering that the rural healthcare spending as a percentage of GDP is rising, rural India, which accounts for 70% of the population, is set to emerge a major demand source for Telemedicine. As the percentage of working population is increasing with 36 per cent of this is expected to be in the age group of 30 to 60 years by 2017. GDP per capita was expected to increase from \$1389 in 2011 to \$1875 in 2016. Thus representing increase in disposable income and hence representing higher healthcare expenditure. Their demands in near future can only be filled by innovative and effective telemedicine solutions, as there are only 80 odd world class hospitals in India and with a doctor to patient ratio of 1: 17000 with 90% of the doctors based out Metros. With the advancements in

telecommunications, the ICTs costs are also reducing which means telemedicine has even greater chance of expansion in developing countries.

The telemedicine scenario in India is seeing momentous developments, challenges still remain. “The greatest challenge is getting enough medical specialists to see patients in remote locations and also to get the patients to trust the opinion by the doctors. the potential of telemedicine in India is still under-realized because of lack of awareness among the masses and lack of a business model that provisions to all the stakeholders. “Telemedicine will never reach the critical mass for take-off until doctors are excited about it and unless people clamor for it as a cost-effective method. We need public-private-partnerships to drive telemedicine. In the surrounding in terms of incentives for the hospitals, the broadband service providers and the patients, needs to be defined. That is the tipping point of the telemedicine market in India.”

RECOMMENDATION

Institutions should be frequently trained and provided with infrastructure at subsidized rates in order to expand the reach of telemedicine. Some awareness programmers about telemedicine can be very much useful to ensure awareness in people.

CONCLUSION

In future, it is obvious that telemedicine will play a important role in compactly revolutionizing the entire health care industry. With the elevation in cutting edge technology it will be lot easier to extend affordable health care in distant location and to reached out to such remote communities. However they are some basic questions that comes to the minds of health care

professionals that whether we really required telemedicine and if it is cost effective since the initial setup costs are quite significant and there are certain limitations.

Telemedicine seems to be the cheapest way to bridge the rural-urban divide in access to health care in India. Currently in India we unable to provide total primary medical care in the rural areas. Telemedicine does not require too much of stretch of imagination to realize that telemedicine will soon be just another way to see a health professional. Telemedicine has been implemented successfully in many villages in India, but it is only the tip of the ice berg. India being a hub of IT and there is a very good scope for further growth of telemedicine, with support the greater technology, regulations and standardization.

Telemedicine is justifying to be saving lives , offsetting shortage of general practitioners and medical specialists ,providing medical consultation to the health care professionals providing : Telepsychiatry consultations for rural nursing home residents, Pediatric critical care tele-consultations to emergency departments of distant community hospitals, Tele-palliative care consultations for critically or terminally ill patients who want to receive terminal care in their own community, Tele-dialysis oversight for patients receiving dialysis at remote dialysis centers.

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