

TELEMEDICINE: CONCEPT AND OPPORTUNITY FOR BETTER HEALTH CARE IN RURAL INDIA

Prof. Mohasin Abbas Tamboli*

Institute: PIRENS Technical Campus, Loni,

Department: MBA

State: Maharashtra

Prof. Nilesh Uttamrao Bankar**

Institute: PIRENS Technical Campus, Loni,

Department: MBA

State: Maharashtra

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Abstract

To provide good quality health care to all act as a great challenge in Indian health care. Telemedicine is not a new terminology. The concept of telemedicine was evolving much before 30 years. Telemedicine is the transfer of medical data (photographs, x-ray images, audio, patient records, videoconferences, etc.) through electronic signals from one place to another via Internet, Intranets, satellites, or videoconferencing telephone equipment in order to improve access to health care. As the growth in Information and Communication Technology, gains the importance of telemedicine in health care. In short telemedicine refers to use of ICT for medical diagnosis, treatment and patient care. This paper discusses the implication, advantages and some implementation methodologies. Surely Telemedicine is going to add more advantage in the fields of health care.

Keywords: telemedicine, medical information, health information.

A. Introduction:

The health of citizen of a country depends upon many factors like economic growth, literacy,

marriage age, per capita income, education, birth rate, access of pure drinking water, access of preventive health care, information about nutrition, public health care etc.

Growth in Information and Communication Technology (ICT) and advancement in medical science offer huge opportunities for good health care. With an area of about 3.2 million square kilometers, India is the seventh largest country in the world. To provide the basic minimum healthcare for India's population which is distributed across distant geographical locations has been one of the Challenges in front of Health Administration. It is known that 75% of the qualified doctors practice in urban centers, whereas the vast majority of India's population lives in the rural areas. *This is happened due to following reasons:*

- Low level of income of rural people hence less paying capacity.
- Lack of medical facilities in rural area.
- Lack of basic facilities due to that problem of retaining doctors in rural area.
- Specialist doctors wish to gain monetary benefits.

To overcome above problems faced by geographically inaccessible area telemedicine has a great scope for delivering and revolutionizing the health care in India.

B. What is Telemedicine?

Telemedicine is the use of telecommunication and information technologies in order to provide clinical health care at a distance. It helps to eliminate distance barriers and can improve access to medical services that would often not be consistently available in distant rural communities. It is also used to save lives in critical care and emergency situations.

Telemedicine is an application of clinical medicine where medical information is transferred through the Internet and other networks for the purpose of consulting, and remote medical procedures or examinations. Telemedicine may be as simple as two health professionals discussing a case over the telephone, or as complex as using satellite technology and video-conferencing equipment to conduct a real-time consultation between medical specialists in two different countries.

Now a day's telemedicine is an integral part of health care services in UK, Canada, Japan, USA, Germany, and Italy and in India. In this scenario e-Medicine and e-Health are commonly used words with reference to health care.

C. Objectives of Telemedicine

By considering the statement “Health for All” following should be the objectives of telemedicine.

- 1. Make available quality medical care:** In India where population spread across distant geographical locations need to access regular quality medical care. Telemedicine helps to establish equilibrium for citizen in various medical services despite these economic and geographic barriers.
- 2. Save the time to avail service:** Think about emergency where patient need specialist opinion, and if specialist is not available there then utilization of telemedicine will be the best option to survive patient. Telemedicine saves the time in travelling from one geographical location to another to avail service in time.
- 3. Reduce cost of medical treatment:** Cost of healthcare increasing day by day. Also cost related to patient care other than medical expenses like travel, food, accommodation for relatives contribute substantially to the overall cost of patient's health care. These all expenses are borne by the patient by selling property in absence of health insurance. Telemedicine helps in reduction of cost other than medical expense.
- 4. Make available more expertise opinions:** Telemedicine has increased the opportunity to avail the more expertise opinions in the critical cases. As the experts are practicing in urban areas telemedicine will open doors for their expertise in rural and unreachable areas.

D. Use of Telemedicine

Specialist doctors are not available in many areas of the world like Africa, UAE, and Pakistan etc. So many patients are sent elsewhere. There is a tendency for expert to concentrate in big

cities. In number of cases the treatment could have been carried out by local doctor with advice from experts. With the help of computer system, digital camera, networking, scanner it is possible to transfer medical data from one part to any part of the world for obtaining expert opinion.

E. Advantages of Telemedicine

There is difficulty for retaining expert medical practitioner in rural or semi urban areas. There are more cardiologist in Mumbai where neurologist in Chennai. Telemedicine overcome such situation by using infrastructure, telecommunication and video conferencing equipment for diagnosis and treatment purpose.

Also telemedicine offers various benefits as an alternative to traditional health care which are as follows:

- Citizens of unreached area can get top class medical care from reputed doctors and hospitals.
- Reduce travel time and save cost for patient.
- By using telemedicine technology, it reduces the cost associated with regular visit. There is no need to come hospitals for minor consultation.
- Telemedicine is the way to manage chronic situation.
- Hospitals and doctors can reach in remote areas without much investment.
- Primary diagnosis can be done with telemedicine.
- Local doctors can be trained with the help of telemedicine.
- Rear medical situation can be communicated to other doctors and hospitals.
- Overseas consultation can be done.
- Exposure of rural doctors with critical situational diagnosis and critical care.

F. Requirements for Telemedicine Facility:

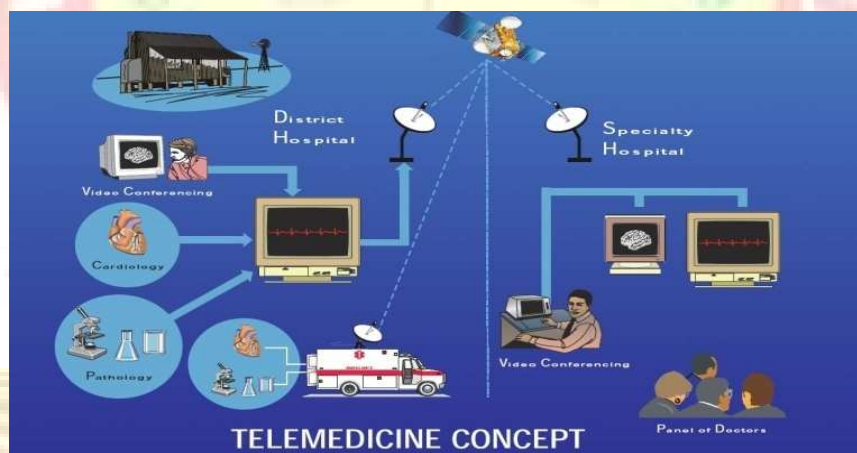
- Broadband line

- Router for broadband line
- PC with Monitor
- UPS for power backup
- Video conferencing kit
- High resolution digital camera
- Nowadays wireless network

With above equipments made available to doctors telemedicine facility can be available in a hospitals.

G. Types of Telemedicine

Telemedicine can be practiced on two concepts that are real time (synchronous) and store and-forward and Home Health (asynchronous).



1. Real Time :

Real time telemedicine is very simple like telephone calls. It requires the presence of patient and doctor from both ends. Also require communication link which allow on the spot interaction. Video conferencing is the common form of real time telemedicine.



2. Store and forward :

This method involves the transmission of medical data like medical images to the doctor or expert at a convenient time for assessment. In this method patient can upload his medical data at any time and doctor can assess it offline. There is no need of presence at a time from both sides.



H. Telemedicine in India :

Though telemedicine is older concept in western countries, it is new to India. Telemedicine concept was firstly use by Apollo hospital in 2001 in India. Now a day's many hospitals wish to

provide this service to the remote area of the country. Today the Indian Space Research Organization (ISRO) has successfully launched telemedicine project at various parts of country through satellite network. With these projects, ISRO has successfully linked hospitals and healthcare centers in remote rural areas with specialty hospitals through satellites like Narayana Hrudayalaya at Bangalore, the Vivekananda Memorial Trust Hospital at Saragur.

I. Conclusion:

With the help of telemedicine gap between life and death can be increase. Every Indian will receive the specialist consultation wherever required in nearest future. Telemedicine ensure family support to stay at home during medical treatment. It will make critical care affordable in each corner of nation. Also there are likely more chances that specialist doctors will tend to work in rural areas. Therefore we can say that the future of medical care is telemedicine. And as a developing nation India as far better chances for growth of telemedicine in Asia but globally.

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