

TELEMEDICINE AND TECHNOLOGY USAGE IN RURAL HEALTH.

Submitted by: L.Deepthi, M. Kinnera, 4th Pharm.D,
Aditya institute of pharmaceutical sciences and research, Kakinada, East
godavari

ABSTRACT:

There are several definitions for telemedicine. According to WHO; defined as , "the delivery of healthcare services, where distance is a critical factor by all healthcare professionals using information and communication technologies for the exchange of valid information for diagnosis, treatment & prevention of disease & injuries, research & evaluation & for continuing education of healthcare providers all in the interest of advancing the health of individuals & their communities".

Telemedicine has great potential to increase assessed to and quality of health care in rural communities which includes timeliness of care of rural patients.

TELEMEDICINE SYSTEM:

It consists of an interface between hardware, software and a communication channel to eventually bridge two geographical locations to exchange information and enable teleconsultancy between two locations.

TELEMEDICINE IN INDIA:

1. APPOLO Group of hospitals.
2. R.N. Tagore cardiac hospital, Calcutta(Asian heart foundation)

The World Health Organization (WHO) defines Telemedicine as, "The delivery of healthcare services, where distance is a critical factor, by all healthcare professionals using information and communication technologies for the exchange of valid information for diagnosis, treatment and prevention of disease and injuries, research and evaluation and for the continuing education of healthcare providers, all in the interests of advancing the health of individuals and their communities."

Telemedicine System

The Telemedicine system consists of an interface between hardware, software and a

communication channel to eventually bridge two geographical locations to exchange information and enable teleconsultancy between two locations.

The hardware consists of a computer, printer, scanner, videoconferencing equipment etc. The software enables the acquisition of patient information (images, reports, films etc.). The communication channel enables the connectivity whereby two locations can connect to each other.(1)

Application of Telemedicine in Public Health:

Telemedicine applications for epidemiological surveillance are gradually reaching new heights with the development of technology such as geographic information systems (GISs). (2)

- It can give new insight into geographical distribution and gradients in disease prevalence and incidence and valuable insight into population health assessment.
- It also helps in interventional planning, assessment of various interventional strategies and their effectiveness.
- It can play a pivotal role in anticipating epidemics.
- It is an essential tool in real-time monitoring of diseases, locally and globally.
- GIS provides the basic architecture and analytical tools to perform spatial-temporal modeling of climate, environment and disease transmission helpful in understanding the spread of vector-borne diseases. Remote sensing techniques have been recently used in this regard. (2)

Interactive health communication and disease prevention :

Information technology and telemedicine can be used to inform, influence and motivate individuals and population organizations on health, health-related issues and adoption of healthy lifestyles. The various approaches and applications can advance and support primary, secondary and tertiary health promotion and disease prevention agendas.(2)

- It can relay information to individuals as well as to the population as a whole. It can provide an easy access to those living in remote areas.
- It can go a long way to promote and maintain healthy behaviors in the communication.
- It promotes self-care and domiciliary care practices. Many living in the remote areas can be benefited by self-management of health problems which will supplement existing health care services.
- It can be a very important tool for the evaluation and monitoring of healthcare services.

Telemedicine in India:

The Apollo group of hospitals was a pioneer in starting a pilot project at a secondary level hospital in a village called Aragonda 16 km from Chittoor (population 5000, Aragonda project) in Andhra Pradesh. Starting from simple web cameras and ISDN telephone lines today, the village hospital has a state-of-the-art videoconferencing system and a VSAT (Very Small Aperture Terminal) satellite installed by ISRO (Indian Space Research Organisation). Coupled with this

was the Sriharikota Space Center project (130 km from Chennai) which formed an important launch pad of the Indian Space Research Organisation in this field.(3)

Current Efforts

In India, telemedicine programs are actively supported by:

- Department of Information Technology (DIT)
- Indian Space Research Organization
- NEC Telemedicine program for North-Eastern states
- Apollo Hospitals
- Asia Heart Foundation
- State governments
- Telemedicine technology also supported by some other private organizations

DIT as a facilitator with the long-term objective of effective utilization / incorporation of Information Technology (IT) in all major sectors, has taken the following leads in Telemedicine:

- Development of Technology
- Initiation of pilot schemes-Selected Specialty, e.g., Oncology, Tropical Diseases and General telemedicine system covering all specialties
- Standardization
- Framework for building IT Infrastructure in health

Conclusion

It does not require too much of a stretch of imagination to realize that telemedicine will soon be just another way to see a health professional. Remote monitoring has the potential to make every minute count by gathering clinical data from many patients simultaneously. However, information may be lost due to a software glitch or hardware meltdown. Therefore, relying too heavily on a computer system to prevent errors in healthcare data may be problematic. There has to be a smart balance between total dependence on computer solutions and the use of human intelligence. Striking that balance may make all the difference in saving someone's life.

Reference:

- 1.Houtchens BA, Allen A, Clemmer TP, Lindberg DA, Pedersen S. Telemedicine protocols and standards: Development and implementation. J Med Sys. 1995;9(2):93–119. [[PubMed](#)]
2. Epidemiological survey.
3. Ganapathy K. Neurosurgeon, Apollo Hospitals, Chennai, Telemedicine in India-the Apollo experience, Neurosurgery on the Web. 2001.