Reaching the Unreached: A Model for Sustainable Community Development Through Information and Communication Technology

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ABSTRACT

Telemedicine, which is defined as 'the practice of healthcare using interactive audio, visual and data communications and includes healthcare delivery, diagnosis, consultation and treatment as well as education and transfer of medical data', has been gaining popularity in the health services sector. Dermatology as a specialty is particularly suitable for telemedicine and more so in geographic regions with scarcity of qualified manpower, where it has greatly facilitated the outreach of specialist care delivery. However, the cost of telemedicine technology is a significant hurdle which makes the sustainability of such services challenging. Maximum utilization of such technology by active participation of well motivated beneficiary communities and bringing innovative strategies for its use will be crucial in sustaining such services in rural communities.

INTRODUCTION

The first steps in modern telemedicine can be traced back to July 1962, when the telecommunications satellite 'Telstar' began transmitting phone calls, radio signals and television programs internationally. Around the same period Michael E. De Bakey was also transmitting open-heart surgeries live by television relayed through 'Telstar'.[1]

The World Health Organization (WHO) defines telemedicine as the practice of healthcare using interactive audio, visual and data communications. This includes healthcare delivery, diagnosis, consultation and treatment as well as education and transfer of medical data. Any discipline that requires transfer of medical data at a distance can benefit from this technology. However, disciplines that rely heavily on imaging systems, such as radiology, pathology and dermatology are specially suited for this technology.[1] The term telehealth is generally being used when applying telemedicine technology to rural communities. Reid defined telehealth as 'the use of advanced telecommunications technologies to exchange health information and provide health care services across

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geographic, time, social, and cultural barriers.'[2,3] A task force for community dermatology launched by the International Society of Dermatology advocates the development of 'community dermatology' with the vision to provide skin care for all.[4] Various programs have been devised to improve the level of skin care services in resource-poor regions, with emphasis on education, training and community-oriented control measures. Telehealth is being used to bridge the gap created by geographically distant rural communities and scarcity of skilled manpower. However, the sustainability of such projects and the achievement of defined objectives remains a challenge.[5]

The Community Health Education and Services by Telehealth (CHEST) Nepal, a non-profit organization, since 2009, has launched an initiative utilizing information and communication technology for health as a platform for providing other services aimed at overall community development. A real-time telemedicine setup is used to provide consultation services for patients with skin diseases, and the same infrastructure is also used to provide education and other vocational training services to rural communities, as per their needs. After signing a formal memorandum of understanding between CHEST Nepal and the community, implementation of the project is planned. Several coordinators, who assess the needs and co-ordinate the implementation of the program at the community level, are selected among the village members for various aspects of the program; health, education, agriculture and other trainings. CHEST Nepal provides the technical expertise such as dermatological consultation, lectures and interaction with related experts through real-time teleconferencing from the DI Skin Hospital and Research Center in Kathmandu (DISHARC). CHEST Nepal and DISHARC are sister organizations with their offices located in Kathmandu. Both these organizations have been established on the initiation of some of the country's leading dermatologists, hospital management experts, information technology professionals, social workers, lawyers and businessmen. A unique feature of this project is that the program is owned and run by the community. It is a hospital to community network in contrast to several other telemedicine projects which network between a city hospital and other peripheral rural hospitals. In order to ensure sustainability of the project, partial funding is provided at the beginning and the remaining revenue is generated through minimal charges for the services provided, the amounts of which is decided by the community members. This project has already been successfully implemented in Gerkhutar Village of Nuwakot District in Nepal with a potential beneficiary population of around 50,000 including several surrounding villages. The population of these villages had no nearby access to healthcare facilities and essential medicines. Here, the people now receive regular dermatological consultation and treatment. Supply of drugs for skin diseases and other essential drugs is made by CHEST Nepal to the community directly through local distributors. This enables the villagers to purchase these medicines at a lower price than at other retail outlets. In addition, more than 20 members have also received basic training in computers so that their may be useful to those seeking jobs or going for higher studies. It is noteworthy that the community members have comfortably received services in their community environment for which they otherwise would have had to spend significant time and money traveling to Kathmandu or other cities. The next phase of this model will be implemented in a terai village community in Dhanusha District in the southern plains of Nepal and another one in the mountains. In order to successfully run this project in the long-run, it is essential to identify the hurdles and objectively assess the outcome. Persistent motivation of community members and innovative revenue generating methods will be crucial for sustainability of the project.

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