Tele-health: a unique model of community development initiative in Nepal

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Information and Communication Technology (ICT) is escalating its presence in several areas in Nepal. It has led to the revolution of the healthcare services across the country using innovative technologies for the better services. The swelling growth in coverage of mobile networks, maximum use of computer, gadgets, advance in ICT technologies and applications, increasing life style diseases, and growing awareness among patient population in our country are some of the factors expanding the importance of ICT in health sector in Nepal. As per Nepal Telecommunications Authority's MIS Report 2015, there are 26,803,688 mobile phone and 11,756,552 internet users. This indicates that ICT is the most important part of our daily life during these days. Due to the fast increasing reach of internet, Community Health Services by Tele-health (CHEST) is coming up with innovative model of sustainable community development using ICT, thus giving the concept of healthcare delivery a community-centric turn.

Since 2009, CHEST has launched an initiative utilizing information and communication technology for

Fig.:1 Prof. Gunter Burg and Dr. Doris Burg visiting Gerkhutar Photo: Dr. D. Gurung

health as a platform for providing other services aimed at overall community development. A real-time tele-dermatology 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 need. After signing a formal memorandum of understanding (MOU) 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 Centre (DISHARC) in Kathmandu.

Providing tele-services in Nepal is challenging due to the difficult geographic terrain, limited availability of physical infrastructure and many other factors. Despite this challenge, three rural sites are linked with high speed intranet connection with the partnership of SUBISU, one of the best cable and internet service providers in Nepal, to run the program. With the clear vision and support of Prof. Gunter Burg (Switzerland) and Prof. Anil Kumar Jha (Nepal), we have been able to provide services to those areas without any cost (Fig.2). Community people

Fig.2: Prof. Gunter Burg distributing ICT training certificate Photo: Dr. D. Gurung

can charge very small amount of money from the participants to run their program on their own. We have reached Gerkhutar (Nuwakot), Bavangama (Janakpur) and Mudikuwa (Parbat) so far and providing our services to them.

During the course of time, a team of experts from Kathmandu visiting those program areas frequently to provide technical expertise in various fields as per their need. Many free health check-up camps have also been carried out to support this program. An idea of e-Learning program was also piloted to Gerkhutar and found that it was very much encouraging and many community members are still benefiting from this. Probably first time in Nepal, we have completed online vocational ICT training and offered on-site, in-person hardware training to the participants and distributed certificates. A participant

Fig.3: Community people taking medicine Photo: Dr. D. Gurung

started computer business at the Trishuli bazaar (Market) and working very fine, which can be a very good example of sustainable livelihood in the community. A team of agriculture expert was also visited to the Gerkhutar and offered organic farming training to the community people. They are now producing different kinds of organic products. We have also supported for the establishment of small pharmacy at community level to provide medicines after consultation from specialists of DISHARC. Later on we came to know that people from Trishuli Bazaar(Nearest town) are travelling to Gerkhutar (Village) (Fig.4) for the dermatology consultation as there is no dermatology specialist available in the town. This shows us that our program

is pulling town people to the village instead of pushing village people to town for their treatment, which can be a very interesting approach for community development. We have also conducted Computer class for the School Leaving Certificate (SLC) appearing students to support their studies and found that it was very helpful for them for their future endeavors for further computer education.

In Bavangama (Prof. Jha's birth place), we are continuously providing tele-dermatology consultation as
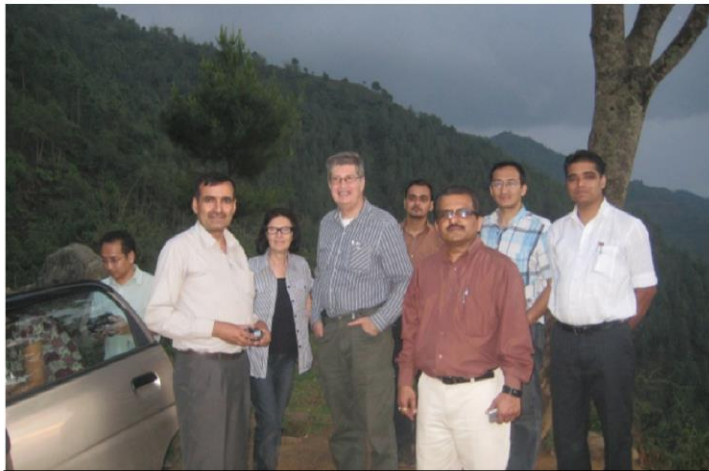

Fig. 4: CHEST team on their way to Gerkhutar Photo: Dr. D. Gurung

well as tele-services to the community people. Hundreds of patients had already been checked and prescribed with medicines. We are providing regular consultation using our tele-conferencing facility on every Saturday. Sometimes we are providing weekdays services to them as per their need. We went there along with our consultant doctor and provided some technical skills to the community youth about the ICT as well as basic health to the focal person who facilitates the online consultation with specialist in Kathmandu. We also donated digital camera and laptop with conference facility for the smooth operation of the program. Digital camera was given them to take a picture and send it to us for the offline consultation "store and forward" if there is problem in online video conference. From the same facility, school teachers are using internet facility through our link to download some teaching materials to support their teaching.

As a matter of fact, some teachers have automatically learned to handle the computer and to browse in
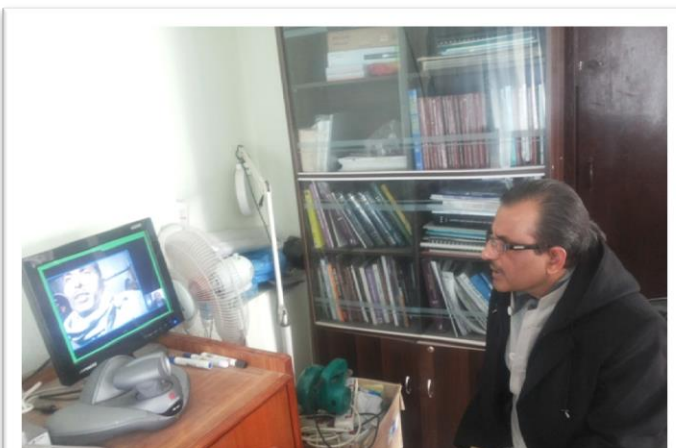

Fig.5: Prof. Dr. A. K. Jha attending patient online, Photo: the author

the internet in order to improve the quality of their lessons. This school is the one which trained Prof. Jha (Fig.5), as a renowned dermatologist, and which definitely aims to train more personalities in the future. Another interesting fact is that many hospitals and other areas are being affected by several times due to blockades but there were no disturbances in our program as it was operated mainly by technology linking with Kathmandu. We are ready to provide other services through our facility as per the requirement of community. It is clear that

our initiative in Bavangama has already got some tangible benefits at the moment whereas lots of intangible benefits will be receiving continuously in the days to come.

We have decided to reach one of the remote communities in western part of Nepal and chosen for Parbat district about 60 Kilometer far from Pokhara city. We conducted feasibility study both in terms of population in the area and technological availability. We knew that despite being very close to the district headquarters called Kushma, it was separated by Kaligandaki and Modi river causing obstacles in the development and other facilities. There are three suspension bridges, among which one is the tallest suspension bridge in Nepal , to connect Mudikuwa village with Kushma. Out of 157,826 population of Parbat, majority population are staying in this area. Many youths in this area were in foreign countries for their employment and many of them were migrated to city leaving their childrens and elderly guardians in village. Therefore, we found that focusing with this community we can make lots of changes in this community as well as in Kushma city because many people belong to both locations.

A team comprising of ICT and social development expert visited Mudikuwa and discussed with

Fig.6: Online consultation at Bavangama Photo: the author

community people about our philosophy and community development modality. They fully welcomed our program and formed a committee for the smooth operation. With the technical help of SUBISU Kathmandu, we were able to establish direct VPN connection to Mudikuwa. An equal line of sight (LOS) tower was established in the local school and solar panel was installed into the school for the electricity. Mr. Yadab Pokharel, a well-known computer entrepreneur donated two computers and we have started our program.

A team including renowned international personality Prof. Burg visited last year to this site and discussed with the community and results were very positive. In December 2015, CHEST team of experts visited Mudikuwa and conducted on-site, in-person "ICT Awareness", community development and program impact assessment and found very interesting facts to drive our program further towards knowledge based society.

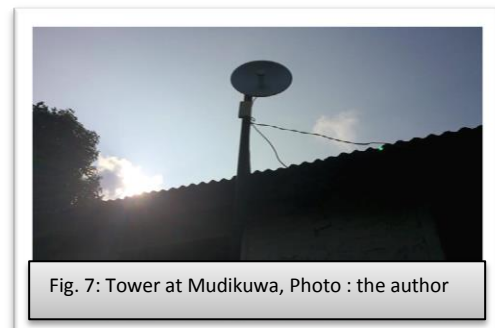We have realized that community people have learnt many things during this period. It is notable that

Fig. 7: Tower at Mudikuwa, Photo : the author

during devastating earthquake last year, the only operational thing was our solar power station from which all villagers came to our center and charged their phones and communicated with their loved ones. Community school started computer education using our computers and teachers are using these infrastructures for the administrative as well as teaching works. Country is facing more than 10 hours of load shedding but they have no problem with that. They took very active participation to

our workshop and asked very interesting questions regarding the recent information technology terms and situation in Nepal. We were surprised about the questions and were very happy to support them with our expertise as much as possible. They were keen interested to ask until we were planning to return and Him Bdr Paudel requested another visit by March this year as he will organize one whole day session exclusively to the students and teachers for the ICT awareness and training program.

We were trying to find the cause why they were so interested to such programs and found that the

Fig.8: Bhagirath Tiwari & Rishee Pd Sapkota in Mudikuwa Photo: the author

Government of Nepal has just announced some technological issues like digital signature, digital certificates, and right to information, electronic payments and compulsory eBidding process for the government contracts. Also government is trying to provide several public services through internet. They are now forced to know all this things for their daily life, however, it is very difficult for them to find such facilities in the local market. Furthermore, increased use of mobile networks, social media sites and gadgets were creating very serious issues among the new generations and came to know that some of them were caught by police for unknowingly using them.

Teen aged children as well as community people themselves are lacking about the do's and don'ts and proper use of internet related resources. Many people are losing their jobs because of the new tender process and ICT related requirements. And many families bringing mobile, gadgets and laptops from the foreign employment and they are lacking necessary knowledge of its proper use. We came to know that they are using these things to watch movie and play games and of course for the social media sites like facebook.

Therefore, we are thinking about conducting this type of workshops in several remote area of Nepal under the philosophy of CHEST to aware community people, in return they will be driving their community for change (Fig.8). We hope that our initiative will definitely make some change to happen in our country and hope to receive support from all concerned including government in our future endeavors; therefore, we will always welcome them to our program. Let's work together to develop an innovative approach towards community development using information technology in Nepal.

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