A short note on the Tripura Vision Centre – Tele-ophthalmology Project

Overview

Tripura is one of the north eastern states of India which is characterized by its tough terrain and very moderate infrastructure. With over 75% of its three million populations residing in rural areas, providing quality and timely healthcare has always been a challenge to the state administration. This was even more pronounced in the areas of specialist health care such as Ophthalmology.

The doctor patient ratio for ophthalmologists in this state is also pretty low at just 1 ophthalmologist for every 1.5 lac patients (2011) Also, there is only one major public sector hospital that is located in the state capital and is supported by another three secondary care and three primary care hospitals in the entire state of Tripura.

The state administration faced the major challenge of providing the basic and essential eye screening to prevent needless blindness which was ever increasing in the state.

Challenge

The primary challenge for the administration was the increasing number of needless blindness, especially in women. Experts knew, for a fact, that this was preventable with a proper and timely eye screening.

However with the limited infrastructure and low doctor patient ratio this was proving to be a very difficult task. Adding to the challenge was the fact that the rural populace could not afford the cost of travel and accommodation for visiting even the primary or secondary hospitals in various parts of the state for eye screening. It was neither economically feasible for the state to bring people to the main hospitals due to the large numbers of people who need to be screened.

Solution

The Govt of Tripura very keen to address this challenge by increasing the number of Ophthalmologist and population ratio to 1: 50000; however with the current availability of doctors and their willingness to travel to rural areas in Tripura this was a herculean task. As a pragmatic solution Govt decided to use ICT to extend the benefits of technology to the

remote parts of the states through Tripura Vision Centre program.

Started with one pilot VC (vision Centre) Melaghar today it is spread to 40 villages of the state. Using existing Tripura State Wide Area Network (TSWAN) network each VCs are connected to Indira Gandhi Memorial (IGM) Hospital in the state capital Agartala.


Each VC is equipped with specially made slit lamp camera to capture the eye images, multi media computers with webcam, software to store ophthalmic related data, rooBroo communication platform to enable video conference with doctors in Agartala. A trained Ophthalmic assistants at the VC screens the patient and uploads the required information along with the images to the patient record. Ophthalmic doctor sitting in the Agartala goes through patient history, eye image and connects to VC using rooBroo. This enables doctor to talk to patient directly and understand the condition better to prescribe the required treatment plan. The entire session is saved for audit and statutory purposes as well.

The connectivity between the Vision Centres and the Main hospital has been established using MPLS-VPN and the existing Tripura State Wide Area Network (TSWAN). Wireless network has also been used with Near Line of Sight (LoS) in most areas of the state.
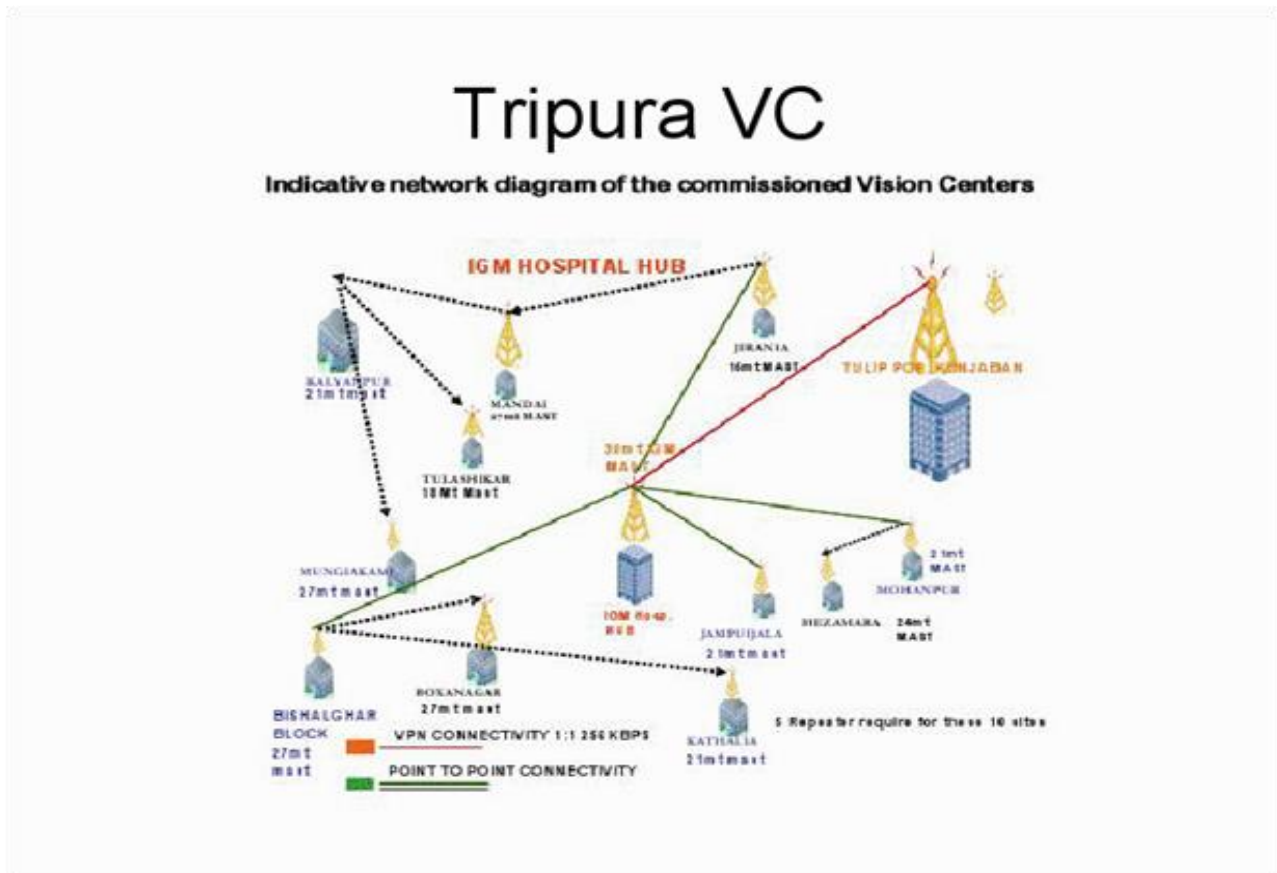
Current Status

The Tripura Vision centre has been in operation April 2007. It started off as a pilot and was quickly ramped up in three phases. As on date, all the 40 administrative blocks in the state have been covered and is in operation since September 2009.

With the decentralization of access to eye care through 40 VCs has been a massive increase in the number of patients screened as shown in the diagram.
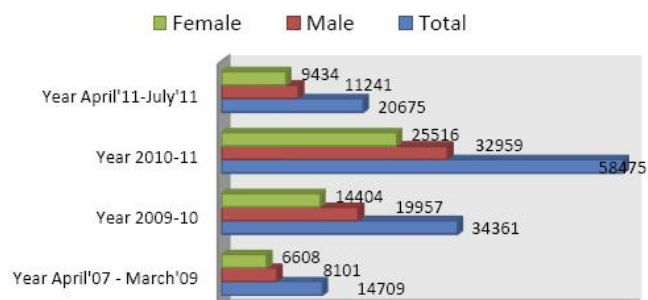

A total of over 1,28,200 people have been screened at various Vision Centres in the state during this period of operation. Of these only 3480 actually needed a hospital visit for corrective procedures. Video conferencing with the doctor helps the ophthalmic assistant to refer only those patients who

require surgical intervention to secondary eye care service for further treatment plan. Corrective glasses were prescribed to over 43,433 patients at the vision centre itself after screening. Thus project helps in reducing the unnecessary patient visit to secondary care facilities and enhances the capacity of existing infrastructures at secondary care centres.

The project also has shown a considerable increase in women's participation for eye screening. With VC, eye care has been taken to doorstep of rural people leading to increase in number of women being screened in the centre. Now the current statics shows women participation for eye screening has increased by 10%.

Percentage of Men & Women Screened in Govt. Hospitals & Screening Camps b/w 2005 and 2009
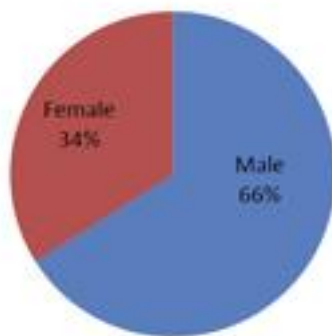
Female 34%
Male 66%

Total Patientss Screened w.e.f April'07 to July'11

Total - 128220,
Male Patients Screened - 72258,
Female Patients Screened - 55962

Female 44%
Male 56%
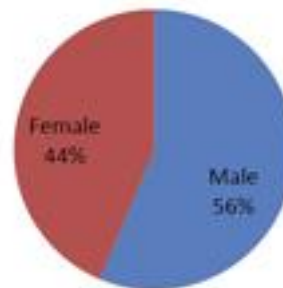
The government provides this service to the people without any charges and the cost per screening for the government is under $5 per patient. This is one of the most cost effective models for providing preventive and primary eye care globally.

IL & FS Education and Technology Services Ltd and Arvind Eye eCare System designed the project for the government of Tripura. Argusoft's Communication and Collaboration OEM platform IP is being used in the project for Doctor-Patient audio & video interaction.
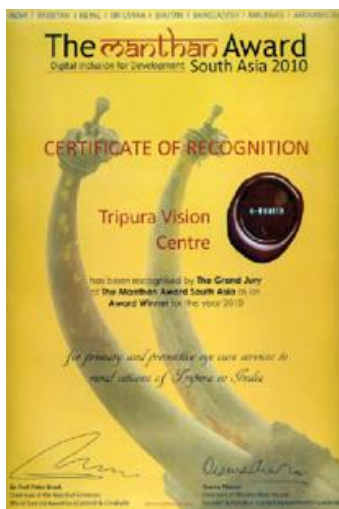
Awards & Recognitions

The Tripura Vision Centre Project won the Best Govt. Policy Initiative of the year under e-health category at the 7th eINDIA Award on 15th December in Ahmedabad, Gujarat.

The Tripura Vision Centre Project won e-North East Award 2011- Best Usage of ICT in the Health Services Delivery on Nov 25th, 2011 in Nagaland.

The Tripura Vision Centre project, conceived by the Department of Health and Family Welfare, Government of Tripura is a breakthrough in delivering eye-care services to the previously un-reached rural citizens of the state.