

Multi-parameter remote diagnostic kit

Country of origin | India

Health problem addressed

70% of the rural population in India has very poor access to health care. 76% of the medical facilities are concentrated in the urban areas, and there is an overall shortage of medical personnel.

Product description

The technology comprises of a USB powered multiparameter diagnostic device which captures ECG, temperature, heart & lung sounds, SPO2 and BP, and communicates with the remote doctor through a low bandwidth audio/video/data conferencing.

Product functionality

The technology enables rural patients to reach urban doctors through a telemedicine solution that integrates the whole healthcare delivery ecosystem to provide meaningful services. The solution also captures the workflow of delivery processes, and enables resource optimization by capturing and analysing operational data in service delivery.



Developer's claims of product benefits

Infrastructure (bandwidth) and skillset limits the reach of technological solutions. This solution works at extremely low bandwidths (32 kilobits/s onwards) for real-time audio/video/data tele-consultation, thereby reaching places where other existing solutions can't reach. It is very easy to use by a village operator and is extremely power efficient (works on USB power). Further, it is a comprehensive solution linking multiple providers (doctors/pharmacies/labs/hospitals), and addresses 75% of healthcare needs at the point-of-care at sub USD 1.0 fees.

Operating steps

A rural operator carries out remote consultation for the patient at the village with a doctor sitting anywhere with an internet connection. The doctor remotely controls the device to obtain medical parameters, and to provide prescription to the patient, while medical records are stored. The solution also supports supply-chain, lab reports, and referrals.

Development stage

More than 850 devices have been operational in the rural areas of India with low bandwidths (mostly over 64 kilobits/s bandwidth) and semi-skilled village operators, and more than 100,000 tele-consultations have been carried out successfully. IEC60601-1 compliance and ISO13485 manufacturing process compliance have been completed. CE marking process is underway.

Future work and challenges

Implement large scale projects with healthcare service delivery partners and e-governance players. Enhance technology with further diagnostics and better ground level delivery processes. Develop mobile Bluetooth based solution for places lacking 32 kilobits/s bandwidth. Build relations with partners having complementary solutions. Modify business model to include software-as-a-service.

User and environment

User: Self-use/patient, physician, technician, nurse, midwife, family

Training: On-site individual/group training, videoconferencing/teamviewer based e-training, 2-4 hrs

Maintenance: Annual, Preventive. To be conducted by Manufacturer.

Environment of use

Settings: Rural settings, urban settings, at home, primary (health post, health center), secondary (general hospital)

Requirements: USB 1.0 connection to a desktop or laptop computer. Windows XP/Vista operating system on the desktop or laptop. Minimum 32 kilobits/s internet speed for real-time audio / video / data tele-consultation. Fixed static IPs at both ends for professional edition, and at server for enterprise edition.

Product specifications

Dimensions (mm): 225 x 165 x 40

Weight (kg): 0.61

Consumables: ECG Gel

Life time: 5 years

Shelf life: 2 years

Retail Price (USD): 1800

List price (USD): 1800

Other features: Software use, installed stationary, reusable

Year of commercialization: 2008

Currently sold in: Primarily in India, some countries in Africa and South East Asia

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http://www.who.int/medical_devices