



# Neurosynaptic Communications

[www.neurosynaptic.com](http://www.neurosynaptic.com)



Enabling  
Healthcare.  
ANYTIME. ANYWHERE.

## Mission

Enabling access to quality and affordable healthcare to masses in rural and remote areas through technology

As population in both rural and urban areas, grapples with the challenge of access to quality healthcare, **Neurosynaptic** offers **proven e-health and m-health technology solutions** that bring together products, partners and processes in the healthcare delivery ecosystem.

With the **commitment** to make **quality** healthcare **affordable** to masses, Neurosynaptic has demonstrated the **impact** of technology solutions at a **large scale** in tackling this global problem.

Neurosynaptic's **award-winning** solutions are **easy to use**, even in difficult-to-access and resource-constrained areas. These enable **end-to-end** healthcare delivery.

These **world-class solutions** are developed by a highly capable research & development team and partners, manufactured with globally accepted highest quality processes and validated & accepted by the medical fraternity. Neurosynaptic also offers its wide experience in **capacity building, project execution, support and maintenance**.

Strong **technology collaboration** with top-notch academic & research institutions and **business collaboration** with several international partners enable **best-in-class services** to comprehensively address healthcare delivery needs.



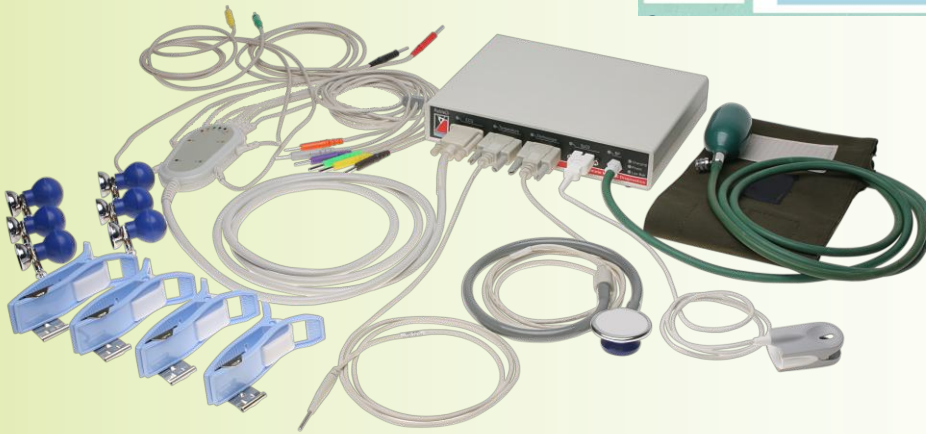
Touching lives around the world

# ReMeDi<sup>®</sup> Solution

Indigenously developed and patented technology solution

Consultation in progress at a ReMeDi<sup>®</sup> outreach centre.





## Features of ReMeDi®

- Multiple Diagnostic Parameters – ECG, BP, Auscultation, Temperature, Oxygen Saturation, Heart Rate, Glucose, Hemoglobin and several others
- Appointment Scheduling, Tele-consultation, Remote and Local Diagnostics, Off-line and On-line operations, Billing, and a whole range of unique workflows
- Full-Screen Videoconferencing; Low bandwidth Videoconferencing also supported
- Storage of Patient Medical Records in a Central Database, MIS Reports
- Access to data only for Authorized Personnel through Login Authentication
- Both real-time and store-and-forward modes of operation supported
- Low power consumption
- Highly Modular for easy customization
- Rugged equipment designed to withstand rough conditions
- Extremely easy to operate; requires minimal training

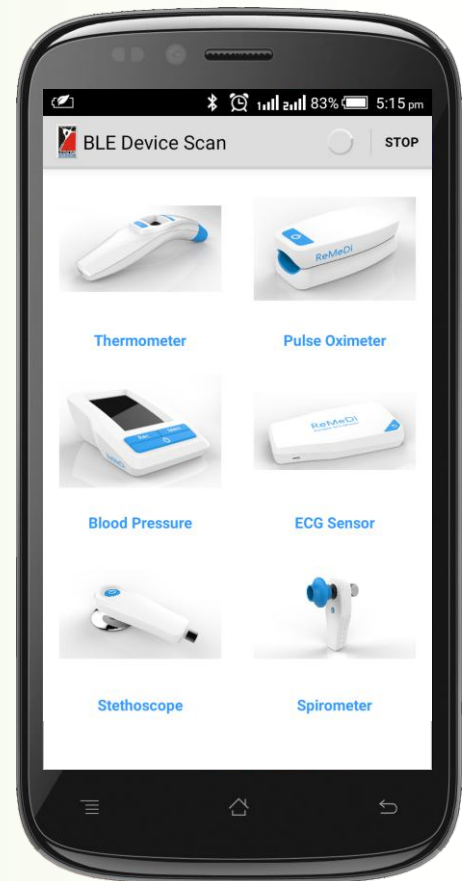


# ReMeDi<sup>®</sup> - NOVA

Fully Wireless and Mobile Based solution that provides healthcare at the doorstep

ReMeDi<sup>®</sup>-NOVA consultation in progress





## Features of ReMeDi® - NOVA

- State of the art Android based portable solution
- Multiple diagnostic parameters like ECG, BP, Heart Rate, Auscultation, Oxygen Saturation & Temperature
- Low Energy bluetooth connectivity to the Tablet / Mobile Phone
- Connects over simple GPRS, 3G or Wi-Fi for data transmission
- Both online and offline access
- Works on Lithium Polymer rechargeable battery – extremely Power Efficient
- Wide range of point of care (PoC) diagnostic tests like Fetal Doppler, Blood and Urine tests



## ReMeDi<sup>®</sup> Platform

A comprehensive e-health solution for screening, primary diagnosis & triaging that connects the entire healthcare ecosystem



ReMeDi<sup>®</sup> Healthcare Ecosystem

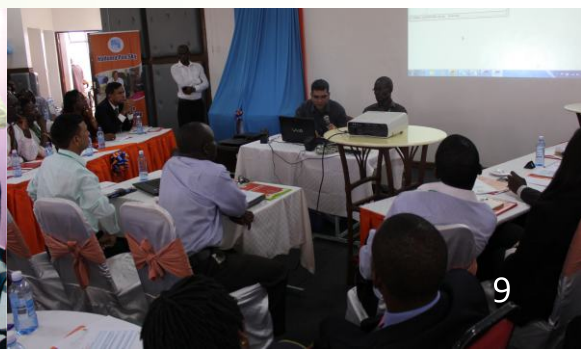






# Capacity Building

Training of human resources is an ongoing endeavour of Neurosynaptic for an optimal utilization of it's products and services. This is besides online & onsite support which is provided 24x7x365



In the last six years, ReMeDi® has already served rural Indians in **35 districts** in **10 states** of India. In the last two years alone, there were more than **200,000 paid consultations**. 75% of these patients did not have to travel beyond their village for healthcare access. On any day, 40% of the patients visiting the centers are repeat visitors for different ailments, reflecting confidence in the system. For each illness episode, **patients saved approximately 6-7 USD**, which would otherwise have been spent on travel.

Data from various projects shows that over 80% of the telemedicine clients are from the poor economic quintiles, with more than 50% representing the poorest quintile, despite a fee for service model in all cases.

Villagers who previously had to travel long distances to get care from qualified doctors can now consult with high quality city doctors and specialists right in their own villages, or



Center for  
**Health Market  
Innovations**

Centre for Health Market Innovations (CHMI) has highlighted ReMeDi® as one of the top five market-based health models to watch, in the coming years to solve the global healthcare challenge.

*"Devices like the Neurosynaptic's ReMeDi® box allow doctors to monitor a patient's vital signs, diagnose illnesses, and recommend treatment via videoconference."*

within 5km of their villages. This not only decreased out of pocket healthcare costs, but also saved time and money. Across various projects in India, the average distance to a telemedicine center is 4.2 km, compared with 5.4 km to a government primary health clinic, 9.9 km to a large town, and 27.9 km to a district health center.

**Significant scaling** is expected with partners in India and in other developing countries in SE Asia as well as many parts of Africa. Also, statewide telemedicine networks are envisaged in the next few years. ReMeDi® is envisioned to be an access point for 25% of the Indian population.

Introduction of technology in rural areas has its own challenges, and Neurosynaptic has taken a **responsible approach** towards this. The **Safe Devices** patent ensures appropriate use of technology. Further, there is a periodic review with implementation partner organizations regarding the interfaces between the technology and processes.



# Neurosynaptic's pioneering work has been recognised globally



WORLD ECONOMIC FORUM



Technology  
Pioneer  
2008

For its Innovative & Path Breaking Work in  
Rural Healthcare Technology



As Fastest Growing Social  
Enterprise in Health Category

Former President of India Dr. APJ Abdul Kalam dedicating ReMeDi® to the Nation.



## NASSCOM®

### Social Innovation Honors 2014 –Jury’s Choice Award

Neurosynaptic conditioned telemedicine technology to work even in extremely poor settings and indigenously developed ReMeDi® - Remote Medical Diagnostics solution. ReMeDi® has emerged as a vital channel of health care delivery in poor, rural pockets of developing countries delivering care close to clients and saving precious lives.



“While other players in the healthcare field in India have been focused on developing telemedicine for tertiary and secondary care, Neurosynaptic has been focused on making telemedicine accessible where it is needed the most—primary care for rural citizens & providing the possibility of universal access to primary healthcare in rural India”

- Inclusive Innovation Award 2013 by Indian Merchants Chamber & Rakesh Jhunjunwala Foundation
- Sankalp 2009 Award in healthcare category
- Winner of Yourstory.in 2010 Award for Social Enterprise



NASSCOM Social Innovation Honors 2014 award accepted by Mr. Sameer Sawarkar, Founder, Neurosynaptic, at the hands of Mr. Raghuram Rajan, Governor, Reserve Bank of India



## Grand Challenges Canada Grands Défis Canada

**BOLD IDEAS WITH BIG IMPACT**

Neurosynaptic is the recipient of the prestigious award by Grand Challenges Canada, Stars in Global Health for developing a cost-effective remote diagnostic device to make diagnostics affordable & accessible to 90% of rural patients within 3-5km.

### IMC Inclusive Innovation Award 2013



## Process Certifications:

Neurosynaptic maintains highest levels of quality for the products and technologies that it develops and offers, and is certified to have established a quality management system for medical devices as per EN ISO 13485:2012+AC:2012 and ISO 9001:2008 standards.

## Product Certifications:

Neurosynaptic offers products tested to comply with the IEC60601 medical devices specifications, meeting the safety as well as performance requirements.

## Clinical Validations:

Each of the Neurosynaptic products undergoes extensive clinical validations before introduction to the markets. These clinical validations are carried out with several institutes of repute with rigorous protocols, who have found our products comparable to the present standard equipment used.



## Certificate

The Certification Body of  
**TÜV Rheinland InterCert Kft.**

hereby certifies that the company

**Neurosynaptic Communications Private Limited**

**No. 10, Khata no 19, 2nd Floor, 29th Main BTM Layout, II Stage,  
Bangalore 560076  
India**

has established and maintains a quality management system  
for medical devices for the following scope:

**Development, Manufacturing and Distribution of  
Neurosynaptic Medical Devices**

## **Abstract from a paper published in the Journal of Association of Physicians of India by All India Institute of Medical Sciences, New Delhi, India**

Background: The Remote Medical Diagnostics kit is an indigenous and low-cost technology that can measure and transmit via the internet 6 clinical parameters viz. Blood pressure (BP), pulse, temperature, oxygen saturation, 12-lead Electrocardiogram (ECG) and heart/breath sounds. Prior to commercial use, it needs clinical validation

Methods : Fifty three patients (including 1 acute myocardial infarction) were evaluated for the above parameters using accepted standard methods and the Remote Medical Diagnostics kit.

Results : The intraclass correlation coefficient (ICC) for systolic BP (SBP), diastolic BP (DBP), saturation pulse, manual pulse and temperature was 0.927, 0.904, 0.989, 0.99 and 0.912 indicating a high degree of agreement between the two methods. For oxygen saturation, the ICC was 0.763 indicating a moderately high agreement. For heart sounds, the kappa coefficient ( $\kappa$ ) for inter-rater reliability was 0.48 (observed agreement of 96.1%). For breath sounds, the ' $\kappa$ ' value was 0.48 indicating moderate agreement. For the breath sounds, the ' $\kappa$ ' value was 0.38, indicating fair agreement (the observed agreement of 94.2%). For the ECG, the observed agreement was 94.4% by visual assessment.

Conclusion: At the bedside, the Remote Medical Diagnostics kit was clinically validated for the above 6 parameters.

## **Abstract of the validation report from Narayana Hrudayalaya, Bangalore, India**

"There is a high degree of agreement between the parameters elicited remotely by the ReMeDi® device and the parameters transmitted through the ReMeDi® software for the measurement of non-invasive systolic and diastolic BP, pulse rate and temperature. An excellent correlation was seen between standard and ReMeDi® ECG. The first and second heart sounds, breath sounds and heart murmurs were found to be equally good. The validation was done using a sustained bandwidth of 64 kbps on a VSAT connection provided by ISRO..."

**Neurosynaptic is a DSIR (Department of Scientific and Industrial Research, Government of India) recognised Research & Development Facility.**

**Neurosynaptic is also supported by the Technology Development Board and Department of Biotechnology, Department of Science & Technology, Government of India.**

*ReMeDi® has played an important role in enabling our organization deliver care in thousands of interior villages of Uttar Pradesh and Bihar. Neurosynaptic has been successful in adapting ReMeDi® to fit our larger service delivery structure so we could respond to our program needs effectively and efficiently.*

**Gopi Gopalakrishnan**

President, World Health Partners

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*ReMeDi® is getting better and better. We are happy to have been associated in the initial clinical validation of the first prototype.*

**Prof. K. Ganapathy**

President, Apollo Telemedicine Networking Foundation  
Former President, Telemedicine Society of India

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*Best Product for developing countries where Primary Healthcare is an issue. ReMeDi® can be used to make primary healthcare accessible and available in remote locations at very low bandwidth and affordable costs. Through this product we have been able to provide immediate healthcare to thousands of people in Southern Tamil Nadu.*

**Dr. Umashankar**

Director, International Programs & Public Health, Meenakshi Mission Hospital

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*Neurosynaptic technology works extremely well in tough rural settings and their methods are always respectful. It is my great honor to be their partner since 2007.*

**Lee Thorn**

Chairman, Jhai Foundation, San Francisco, USA

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**Neurosynaptic Communications Pvt Ltd**

#10, 29th Main, B.T.M. Layout 2nd Stage  
Bangalore 560 076  
Karnataka, India

**Website:** [www.neurosynaptic.com](http://www.neurosynaptic.com)

**Email:** [sales@neurosynaptic.com](mailto:sales@neurosynaptic.com)

**Phone:** +91-80-4111-0520



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