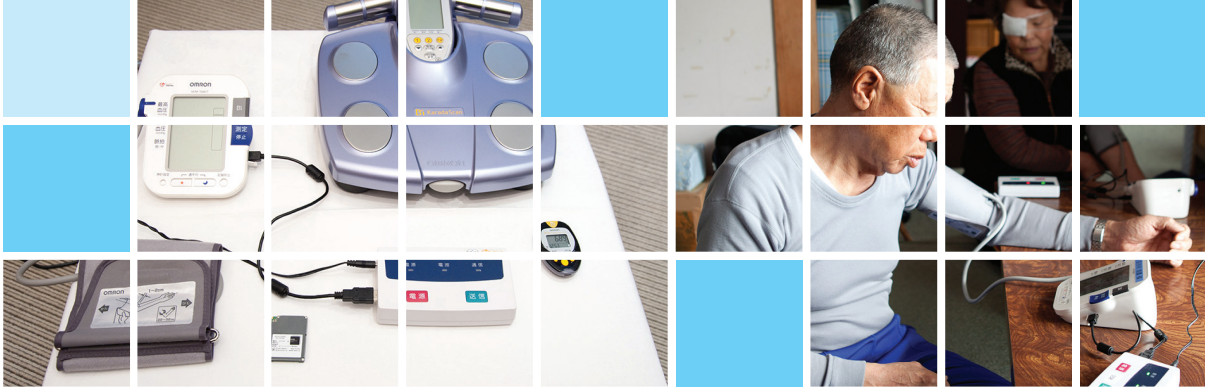
Wireless Reach™
from Qualcomm



Health Care | Education | Entrepreneurship | Public Safety | Environment

Partners

- Chealcomm
- Medical Platform Asia
- Sapporo Medical University

2011 Statistics

- Life expectancy: 83.9 years
- Population: 127,368,088 (2012 est.)
- GDP per capita: US$34,300 (est.)
- Internet penetration: 80%
- Mobile penetration: 99.15%

Sources: CIA World Factbook (https://www.cia.gov/library/publications/the-world-factbook); Mobile penetration data provided by Informa UK Limited and based on market intelligence. Internet penetration data provided by www.internetworldstats.com and based on data published by Nielsen Online, the International Telecommunication Union, GfK, and local regulators.

We are fortunate to have these companies involved to aid in the adoption and advancement of wireless medical and wellness services in the Japanese home market. This project will provide close monitoring of a patient's condition and, by utilizing 3G wireless technology, a doctor can remotely provide diagnosis and treatment recommendations on a regular basis.

– Masanori Nishiyama, M.D.,
Chairman of the Board of Directors,
Medical Platform Asia

Case Study

Japan: Wireless_Health_Care@Home, Enabling 3G Health Care Access for Rural and Disaster Affected Communities

In remote and disaster affected regions of Japan, such as snowy areas like Hokkaido, or Iwate Prefecture, emergency and advanced health care resources are lacking and gaining access to facilities can prove difficult. In this context, the ability for people to manage their own health enables them to receive timely treatment and prevent illnesses from becoming serious. The Wireless_Health_Care@Home project is working with residents either living in remote areas or in areas affected by the 2011 Great East Japan Earthquake. Participants send critical health information, such as blood pressure, weight and distance walked, to doctors through a 3G wireless network.

Challenge

- Despite being equipped with the world's best broadband system, Japan continues to fall behind other countries in leveraging ICT for the medical sector.[1]
- Access to emergency and advanced health care is difficult because of weather-related transportation issues and the extreme remoteness of some rural areas of Japan.
- In areas affected by the 2011 Great East Japan Earthquake, 260,000 displaced victims remain; of those, 110,000 live in temporary housing units.[2] Some patients have been newly diagnosed with high blood pressure as a result of their living environments and stress from the disaster, while others face a worsening of their existing illness.
- Many of these patients experience challenges when it comes to seeing specialists – even a home visit by a doctor or nurse often requires considerable time and effort. As a result, quite a few receive inadequate medical services.
- Delays in receiving treatment can cause many illnesses to become quite serious, even life-threatening.

Solution

- In the first phase of the project, 300 residents in remote areas of Japan were trained to use 3G wireless devices in order to manage their health information and share it with their doctors. The data collected as part of this project is used by Sapporo Medical University for large-scale epidemiological cohort studies.
- Expanding on this success, the project then scaled to an additional 50 patients in Shizuoka Prefecture.
- The third and final phase of Wireless_Health_Care@Home is part of a research study being undertaken by Iwate Medical University as a part of its larger effort to provide medical care to Japan's earthquake and tsunami victims. An additional 200 systems will be deployed in Iwate Prefecture recognizing the benefit of remote monitoring for patients in areas where wire line telecommunications infrastructure has been destroyed and there is a shortage of clinicians.
- Medical Platform Asia (MedPA) provides Chealcomm's 3G communication equipment for vital data management to its affiliated medical facilities.

MedPA

北海道公立大学法人
札幌医科大学
Sapporo Medical University

Iwate Medical University

EBM RCE

ケルコム
CHEALCOMM

The map shows all implementation sites for the Wireless_Health_Care @_Home project.

- Data such as a participant's blood pressure, weight and distance walked can be easily and immediately shared with physicians using 3G connectivity. Once received, data is reviewed and participants are advised in order to improve their physical condition.
- Unlike the average telemedicine system requiring complex equipment, this system functions on a common household remote control with two simple buttons (power and send). It is an efficient telemedicine approach for seniors and other patients who often don't have experience using computers or Wi-Fi networks.
- The ability to receive timely care outside of a hospital promotes home-based nursing and shorter hospital stays; in turn, this reduces health care costs and overcrowding of health care facilities.

The Technology

- 3G wireless modules integrated with Qualcomm CDMA2000 1x technology
- Wireless connectivity over KDDI's CDMA 1x network
- A web-based application for analysis of health information developed by Chealcomm

Results – Phase I

- Experts, physicians, nurses, hygienists and physical therapists in MedPA's affiliated medical facilities have effectively created reports for each project participant based on his/her health information. These reports have been used to communicate with the participant and provide health care guidance and feedback. Many medical staff observed that the project facilitated communication with participants and provided them with a sense of security.
- 100 percent of the participants exhibited an increasing awareness of the importance of blood pressure management. Prior to implementation, only 50 percent were aware of the importance of managing blood pressure.
- 100 percent of the participants responded to proactive engagement in treatment. Prior to implementation, only 70 percent were proactive in their treatment.
- In some cases, doctors changed prescriptions after examining blood pressure data that was measured at home. And in other cases, participants were diagnosed with hyperten- sion for the first time after measuring blood pressure at home.
- Phase II and Phase III results will be available in spring 2013.

Project Partners

- **Chealcomm** collaborates with **MedPA** in distribution of 3G communication equipment to MedPA's affiliated medical facilities.
- Medical Platform Asia facilitates project implementation and management.
- **Sapporo Medical University, Iwate Medical University** & **EBMRCE (Evidence Based Medical Research Center from Osaka University)** provide medical expertise and give project participants health care advice based on their collected health information.
- **Qualcomm's Wireless Reach™ initiative** is a project funder providing project manage- ment support since 2010.

[1] http://www.soumu.go.jp/johotsusintokei/whitepaper/ja/h21/html/l2222000.html. This link shows that Japan lags behind US, South Korea, Singapore, Denmark and Sweden in ICT utilization, not limited to wireless technology, in medical care (in Japanese only).
[2] Asia and Japan Watch: "Remembering 3/11: 260,000 Survivors Remain in Temporary Housing."

Wireless Reach™ Intiative from Qualcomm
Qualcomm believes access to 3G and next-generation mobile technologies can improve people's lives. Qualcomm's Wireless Reach initiative is a strategic program that brings wireless technology to underserved communities globally. By working with partners, Wireless Reach invests in projects that foster entrepreneurship, aid in public safety, enhance the delivery of health care, enrich teaching and learning and improve environmental sustainability. For more information, please visit www.qualcomm.com/wirelessreach.