CHINA

2013 Statistics

- **Life expectancy: 74.9 years**
- **Population: 1.35 billion**
- **GDP per capita: US$9,300 (2012 est.)**
- **Mobile penetration: 91.2% (est.)**

Sources: CIA World Factbook (https://www.cia.gov/library/publications/the-world-factbook/index.html); mobile penetration data provided by Paul Budde Communication Pty Ltd.

After encountering a child with amblyopia, we will immediately enter the data via our mobile phones and we can reference the record at any time during follow up treatments. It's very convenient, the project improves our diagnosis and treatment techniques.

— Qingye Shu, Clinician Damasen Public Health Center, Hengshui, Hebei Province

Mobile Vision Project: Preventing Lifelong Vision Disability for Children

The Mobile Vision Project utilizes a 3G-enabled mobile application to assist doctors in the screening and treatment of children with amblyopia in underserved communities in China. Amblyopia, sometimes called "lazy eye," is the most common cause of vision impairment in childhood.[1] Despite a high number of children with amblyopia in China, clinicians in rural areas often lack knowledge about how to properly diagnose and treat this disease. Additionally, financial hardship prevents many children in remote areas from receiving treatment for amblyopia, increasing their risk of lifelong disability. The Mobile Vision Project seeks to address these challenges by providing clinicians in rural areas access to digital patient records, training, treatment and screening information.

Challenge

- Amblyopia, if detected early, is treatable.[2] If not, it can cause lifelong disability.
- In China, the lack of access to proper screening and care in rural communities persists into adulthood. In fact, amblyopia affects approximately three percent of adults living in these areas.[3]
- The project was implemented in Hengshui City, Hebei Province, which is located in Northern China. Hengshui City is in need of technological upgrades that can better collect, report and analyze data. These upgrades can help provide more accurate statistics and therefore better patient care.[4]

Solution

- A custom mobile application, that enables data collection and analysis and helps with patient screening and diagnosis, was designed for implementation at Hengshui City Maternal and Child Care Service Center (MCCSC) and other public health centers. The organizations serve approximately 400,000 children and teenagers up to the age of 14.
- Eye care professionals received 3G-enabled smartphones, laptop computers, PCs and 3G connectivity, allowing them to access the system anytime, anywhere.
- The system creates an electronic medical record that enables designated health care workers to locate and record a patient's medical chart via computer or mobile device and ensures continuity of care even if patients visit different clinics.
- A searchable, online ophthalmology databank contains a comprehensive collection of the latest eye care information. Clinicians access information and materials in the databank to improve their knowledge of amblyopia and other common eye diseases, enabling them to provide better and timely care to children with amblyopia.
- Doctors in towns and villages access the system via web portal or mobile application to record basic data and submit reports to county-level MCCSCs. County health workers can electronically review patients' health records for screening and then refer children needing further treatment to city-level public health centers. City-level health workers can also access the system to obtain clear directions on how to treat and cure patients.
- Eye specialists provide in-person training, which allows local doctors the chance to communicate with and learn from experts. This helps raise the overall level of health care for patients.

CHINA

» The Mobile Vision Project builds on the knowledge gained in deploying the 3G Mobile Medicine application, which Wireless Reach, Xi'an Kingtone Information Technology and the China Children and Teenagers' Fund developed in 2009 to enable improved patient care in resource-scarce, rural communities.

Impact

Since the rollout of the system in October 2011, the following results have been collected:[5]

» 101 township-level clinics regularly use the system in their daily medical practice.
» 23,286 eye exams have been collected, with 3,073 of the exams resulting in a diagnosis of suspected amblyopia.
» 6,626 system logins through mobile devices, PCs and laptops have been recorded.
» The system allows better collection and analysis of patient health information, improves efficiency and timeliness in data exchange between health workers at local, city and county levels, and improves screening and treatment.
» Anytime, anywhere access to the ophthalmology databank assists in the rapid spread of knowledge about amblyopia and other common eye diseases among local eye doctors.
» With the assistance of information technology, scientific data can be collected, archived and used as a reference for developing national policies.
» In 2014, project stakeholders will be completing a tool, which will enable other public health entities to replicate aspects of the Mobile Vision Program by sharing best practices from implementation.

Project Stakeholders

» China Children and Teenagers' Fund through its specialized institution focusing on children with amblyopia, supported site selection, coordination with the Hengshui Women's Federation and local health bureaus as well as with ophthalmology experts to provide doctor trainings.
» China Telecom provides 3G connectivity services at a subsidized rate.
» Hengshui Women's Federation coordinates among Hengshui City MCCSC and local public health centers to provide research support, training and input into local project operation and management.
» Qualcomm Wireless Reach is the main project funder and provides project management support.
» Xi'an Kingtone Information Technology Co., Ltd. developed the mobile application used in the project and oversees project implementation, including the software upgrades and system maintenance.

China Children and Teenagers' Fund

联合信息 KINGTONE INFORMATION

[1] "Facts About Amblyopia" National Eye Institute. United States National Institutes of Health. http://www.nei.nih.gov/health/amblyopia/amblyopia _ guide.asp#2
[2] "Optometric Clinical Practice Guideline : Care of the Patient with Amblyopia." American Optometric Association. http://www.aoa.org/documents/CPG -4.pdf
[3] Wang Y, et al. "Prevalence and causes of Amblyopia in a rural adult population of Chinese the Handan Eye Study." Ophthalmology. 2011 Feb. 18. http://www.ncbi.nlm.nih.gov/pubmed/20869774
[4] Reported by Hengshui City Maternal & Child Care Service Center in Hebei Province.
[5] As of October, 2013.