Mobile Competence Network for Community Health Workers in Rural Myanmar

A supportive information system that facilitates the improvement of health services

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Why a rural health in Myanmar?

70% of the total population of Myanmar resides in rural areas. The main challenges regarding health care are the access, equity and coverage of health services due to the lack of infrastructure and the shortage of health staff. This results in the unavailability of proper care for a big portion of the population, which is reflected in the high indexes of mortality and morbidity. The Health Plan laid out by the Ministry of Health in Myanmar identified the problems relating to health services that need to be addressed:

- Need to improve rural health-care coverage.
- Persistence of maternal, infant and child mortality levels that need further reduction.
- Excessive workload of basic health staff.
- Need of quality data for National Health Information Systems.

A solution to address the shortage of medical professionals who can't meet the demands of the rural population is the creation of support systems for Community Health Workers (CHW). It is proven that their activities render most effective when supervised by a clinically skilled health workforce within the context of an appropriately financed primary health care system. In other countries, CHW's have been recognized for their success in reducing morbidity and averting mortality in mothers, newborns and children. The strategies for establishing a coordinated process by the communities and the national government can increase equity in access to health care and accelerate the progress towards the health objectives proposed by the Myanmar Ministry of Health.

What needs to be done

Technology can provide the right platform for improving these coordinated processes between communities and the government. The evidence suggests that the use of technology in community-based interventions, as a way of extending health care delivery, can improve health outcomes. In this way, the goal of electronic health (e-Health) is to optimize digital processes in patient care, increase the quality and security of medical information and render medical information more accessible. Even low-tech technologies (i.e. mobile phones) can facilitate the promotion of primary health education and the delivery of basic health care services to previously underserved areas, while maintaining economic feasibility.

The goal of this project is the development of international cooperation for fostering solutions to provide better access to basic healthcare services.

General Considerations

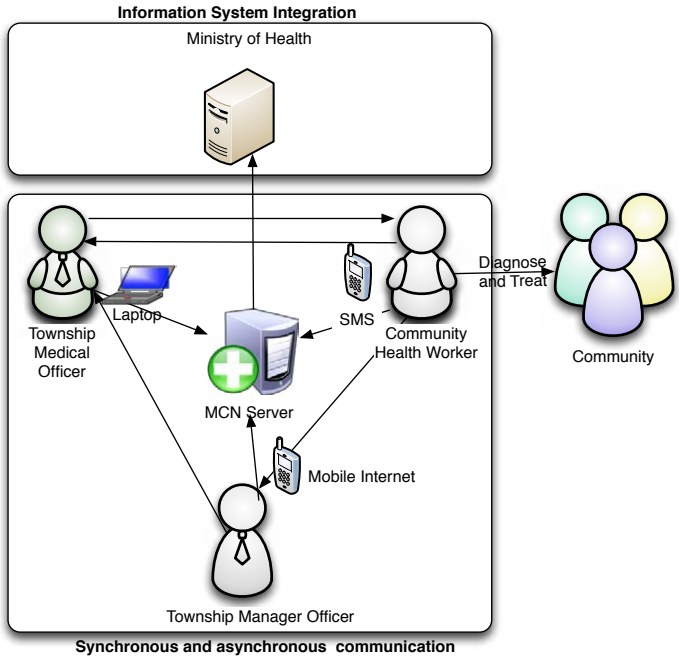
The Mobile Competence Network (MCN), is a system designed for supporting health staff in rural areas. Through different devices (from text-based mobile phones to computers with internet) the users connect to a main server which offers the following services:

- Easier access to learning materials, which will facilitate the improvement of training for CHW's.
- A platform for health staff to meet and discuss about relevant topics
- An accessible databse of patients health records
- Automatic notifications to health workers through predefined trigger conditions (i.e. medication time/ day reminders)
- Support for diagnose and treatment of patients through faster access to medical professionals, improving the quality of service offered by basic health staff.
- Provides the National Health Service with statistical data of the health situation in rural communities.

Technical considerations: Conceptual Architecture

The MCN follows a modular design to allow the extension of functionary, adaption of new technology and scalability. It adheres to internationally accepted standards to facilitate the integration of CHW's into the National Health Information System of Myanmar through low-cost, low-energy and low-tech mobile devices. This framework provides the following core services:

- User profile management
- Direct asynchronous and synchronous communication
- Intelligent topic-based one to many messaging
- Multi-device and multi-lingual user interface design
- Based on internationally accepted standards such as ICD-10 for semantic interoperability and HL7 for ontological interoperability
- Accountability by providing an interface add triggers for indicators



The MCN's framework comprises a client-side component and a server-side component. The connection between client and server is either Internet-based protocols or via specially developed SMS-based protocol.

Who we are

Eugenia Martin is a MA in International Business student at the University of Fribourg, in Switzerland. She received her lic. in Media and Communication from FASTA University (2004), in Argentina, where she was born and grew up. In 2008 she moved to Switzerland. After 10 years of working in institutional communication in the private education sector and the publishing industry, she decided to start a career in business management. Since 2010, she has directed several successful medium scale IT projects while coordinating teams from different countries and backgrounds. She is interested in cultural anthropology as well as photography.

Edy Portmann is a researcher, specialist and consultant for exploratory search, mediamatics (i.e., media and informatics), and soft computing. He is also an assistant professor of Information Science at the University of Bern in Switzerland. He is a nominee for Marquis Who's Who 2013, co-founder of Mediamatics, and co-editor of 'Fuzzy Management Methods,' as well as author of 'Informationsextraktion aus Weblogs' and 'The FORA Framework.'. In the past, Edy studied economics, business, information systems, and computer sciences at various Swiss universities. During his studies, Edy worked in several organizations in study-related disciplines.

Joël Vogt is a researcher at the Informatics Department of the University of Fribourg, in Switzerland. After completing a Master in Information Management (2008) he achieved a dual doctorate in Economy and Social Sciences (University of Fribourg) and Information Technology (Hasselt University, Belgium). He has published several scientific articles and his research areas include topics such as user-centered design, eHealth and mobile eHealth and Assistive applications. In addition, he has over 5 years experience as an assistant professor at bachelor and master level. He worked several years as a system administrator at Cablecom. Joël has a keen interest in photography and enjoys hiking.

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