

## Development of mHealth Information in Community Based on Geographical Information: A Case Study from Saraphi District, Chiang Mai, Thailand

**Authors :** Waraporn Boonchieng, Ekkarat Boonchieng, Wilawan Senaratana, Jaras Singkaew

**Abstract :** Geographical information system (GIS) is a designated system widely used for collecting and analyzing geographical data. Since the introduction of ultra-mobile, 'smart' devices, investigators, clinicians, and even the general public have had powerful new tools for collecting, uploading and accessing information in the field. Epidemiology paired with GIS will increase the efficacy of preventive health care services. The objective of this study is to apply GPS location services that are available on the common mobile device with district health systems, storing data on our private cloud system. The mobile application has been developed for use on iOS, Android, and web-based platforms. The system consists of two parts of district health information, including recorded resident data forms and individual health recorded data forms, which were developed and approved by opinion sharing and public hearing. The application's graphical user interface was developed using HTML5 and PHP with MySQL as a database management system (DBMS). The reporting module of the developed software displays data in a variety of views, from traditional tables to various types of high-resolution, layered graphics, incorporating map location information with street views from Google Maps. Multi-extension exporting is also supported, utilizing standard platforms such as PDF, PNG, JPG, and XLS. The data were collected in the database beginning in March 2013, by district health volunteers and district youth volunteers who had completed the application training program. District health information consisted of patients' household coordinates, individual health data, social and economic information. This was combined with Google Street View data, collected in March 2014. Studied groups consisted of 16,085 (67.87%) and 47,811 (59.87%) of the total 23,701 households and 79,855 people were collected by the system respectively, in Saraphi district, Chiang Mai Province. The report generated from the system has had a major benefit directly to the Saraphi District Hospital. Healthcare providers are able to use the basic health data to provide a specific home health care service and also to create health promotion activities according to medical needs of the people in the community.

**Keywords :** health, public health, GIS, geographic information system

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