

Integration of Decentralized Data of Community Health Activities in Thailand by Using Tablet Data Entry System

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<Introduction>

After the reform of health care system in Thailand from 2005, importance of activities by the community health nurses (CHNs) gradually increased. We associated with a project of the community health promotion in Thailand for many years. From these experiences, many strength and weakness were found. One of them is the contribution of health volunteers (HVs) who support CHNs' activities, on the contrary, it shows a problem that it might cause loss and the dispersion of data related to their home visits to inhabitants at the same time. To save the data which are apt to disappear, it goes without saying that the database which can input data on the site must be effective. However, the computer literacy of HVs is limited. Therefore, we carefully selected items of data that were collected through their home visits, and then developed data entry system using the tablet PC (iPad) that was constructed by minimized numbers of entry sheets and simplified items of data. This presentation shows the process of data item selection and the acceptability of the data entry system that we offered.

<Research Process and Methods>

Using preceded investigation about the role of CHNs in March 2012; we investigated items of necessary data of inhabitants in community health activities, and then obtained necessary 54 items for their activities. Based on these 54 items which consisted of 8 categories regarding personal and health related information, we conducted 5 focus-group interviews with 8 CHNs and 27 HVs in 5 primary care units (PCU) to examine the actual situation of their data collection and use in August 2012. We found that most of the items were actually collected by HVs, while actively shared information with CHNs was limited. From these results, we refined items, and categorized them into demographics, health status and disease, medical treatment, family structure, economic condition, housing condition, hygiene condition. Furthermore, to improve data usability we added longitudinal and latitudinal data that is easily acquired if using the tablet PC such as iPad. In March 2013, we made a prototype data entry system using an iPad, and conducted non-participatory observation study with preceded 60 to 90 minutes instruction how to enter the data to

22 HVs and 9 CHNs in the Northern East part of Thailand, along with inquiring about the usability and availability of the system and the necessity of each item. Approval for a series of these researches was granted by the institutional review board.

<Results>

HVs and CHNs showed very high user friendliness with 94.3% and 88.3% of the maximum score respectively as well as high satisfaction with this prototype system, especially regarding a display of the maps which showed the location of houses of residents who had problems corresponding to concerns of HVs and CHNs (e.g., certain diseases or next visiting schedule). However, we found that HVs could not understand enough about the utilization of these data, while they answered that they wanted to collect data as much as possible by this system.

<Discussion>

This study showed that a simple data entry system with spatio-temporal data could improve data collection and their utilization for health care activities despite of limited computer literacy of HVs. However, it is clear that more simple data entry system should be pursued in a country where a social resource is limited to. We are grappling with development of a revised system using a smartphone now.

2. Family

2.3 Name: sample1

2.4 Address: shibuya

2.5 Position: 2.6 Lat. 35.6612015 2.7 Lng. 139.698029 2.8 GPS

2.9 Member: 2.10 M 2 2.11 F 2

2.12 Memo

2.13 Persons

2.16 Name	2.17 Last Visit	2.18 Next
test1	2013/02/25	2013/03/04
test2	2013/02/25	2013/03/27

Fig.1 A sheet for family information

3. Person

3.4 Name: test16 3.6 Sex: 3.6.1 M 3.6.2 F

3.5 Birthday: 2012/11/12

3.7 Visit Record 3.8 Health Data 3.9 Health Status 3.10 Profile

3.26 Social ID

3.27 Nationality

3.28 Relationship with Head

3.29 Religion

3.30 Marital Status: yes no

3.31 Education Level

3.32 Main Care Giver

3.33 Occupation

3.34 Work Place

3.35 Work Risk

3.35.1 no risk 3.35.8 hot areas

3.35.2 chemicals 3.35.9 High areas

3.35.3 noise 3.35.10 others

3.35.4 dust and smoke

3.35.5 machinery

3.35.6 harmful to eyes

3.35.7 some posture for a long time

3.36 Lifestyle Risk

3.36.1 noise 3.36.6 stress and insomnia 3.36.11 drug

3.36.2 drink alcohol 3.36.7 eat plenty of food 3.36.12 other

3.36.3 smoke 3.36.8 eat raw foods

3.36.4 rarely have movement 3.36.9 drink energy / drink

3.36.5 rarely do exercise 3.36.10 unsafe sex

urgencymax 3

Fig.2 a sheet for personal information