

Medical Supply Monitoring System of Rural Areas in Nepal

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ABSTRACT

There are many online databases for medicine management used by health offices, which provide health service to the people in a rural area in Nepal but these developed fragmentally and often can not communicate and share information. In this study open source softwares such as: PHP, MySQL, and Apache were used to build up a web based database for storing disease information of the inhabitants in rural areas in Nepal.

The objective of this study was to develop a web application for collecting information related to disease and ill inhabitants of rural areas at Sub Health Post (SHP) level. The system provides information to decision makers of health service network to supply medicine, equipments, and technical manpower to specific Sub Health Post. The system security features give permission to the users who have authority to access the system with a login feature. The system successfully performs the function of each user, who has authority to access the system.

KEYWORD: Medical Supply in Nepal, Medicine Monitoring System, Database for Medicine Management, Health Services.

1. INTRODUCTION:

The overall purpose of the Department of Health Services (DoHS) is to deliver preventive, promotive and curative health services throughout the Kingdom of Nepal. According to the institutional framework of the DoHS and Ministry of Health (MoH), the sub health post (SHP) (from an institutional perspective) is the first contact point for basic health services [8]. Each level above the SHP is a referral point in a network from SHP to health post (HP) to primary health care centre (PHCC), on to district zonal and regional hospitals, and finally to specialty tertiary care centres in Kathmandu. This referral hierarchy has been designed [3] to ensure that the majority of the population receives public health and minor treatment in places accessible to them and at a price they can afford. Inversely, the system works as a supporting mechanism for lower levels by providing logistical, financial, supervisory, and technical support from the centre to the periphery.

Small health centers and posts in a rural area, most of them staffed by paramedical personnel, health aides, and other minimally trained community health workers and served the needs of the scattered population. Even though these rural facilities were more accessible than urban hospitals, they generally failed to provide necessary services on a regular and consistent basis. The majority of them were barely functional because of

such problems as inadequate funding; lack of trained staff; absenteeism; and chronic shortages of equipment, medicines, and vaccines [8].

In order to solve the problems listed above the Health Department had to keep a large quantity of data and information on the different kind of diseases [6]. The set of data related to the following: diseases and numbers of sick people in a file that is difficult to manage, search and maintain. The consequence of the poor system was a large amount of time wasted on searching and higher costs to operate the system.

The Medical Supply Monitoring System of rural areas in Nepal is a way to solve this problem. This system helps to facilitate the staff members of the Health Department to manage [4] the medicine and sick people information at sub health post (SHP). With a good user interface, a local staff of SHP can manage the information related to medicine and sick people. This system is an effective tool to store and query data from the database [10], and it can reduce time taken in search and the costs in managing the system.

In this paper, a web based database was developed for storing disease information.

2. METHODOLOGY

Tools used to develop the medical supply monitoring system are Apache Web Server version 1.3.34, PHP Scripting Language version 4.4.1, MySQL Database 5.0.16, PHPMyAdmin Database Manager 2.5.7-p11, EditPlus Text Editor v2.10, Browser Internet Explorer version 6.0

The method used by this study was understanding the problem, system analysis, system design, system development (coding), system installation, and system testing, which are described with flowchart in figure.1

One important function of information theory, data store has been focused and communicated over network. As the problem is lack of information related to sick inhabitants in rural areas, this problem is overcome by developing an information system that makes all authorised users of this data easy to use and share these data.

2.1 DATABASE INTERFACE

The database can be accessed using login and password obtained from the system administrator. The interface help users to search the database based on the parameters such as: date, disease name, VDC name provided by the user as in figure.2

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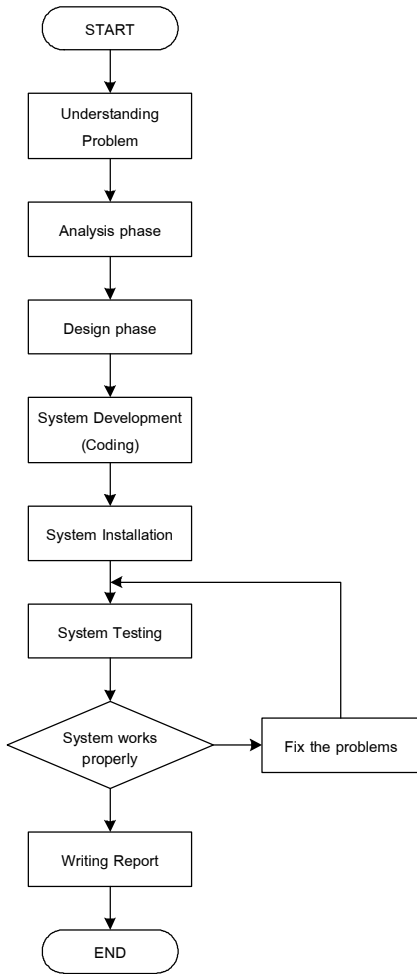


Fig. 1. Flowchart of the Medical Supply Monitoring System

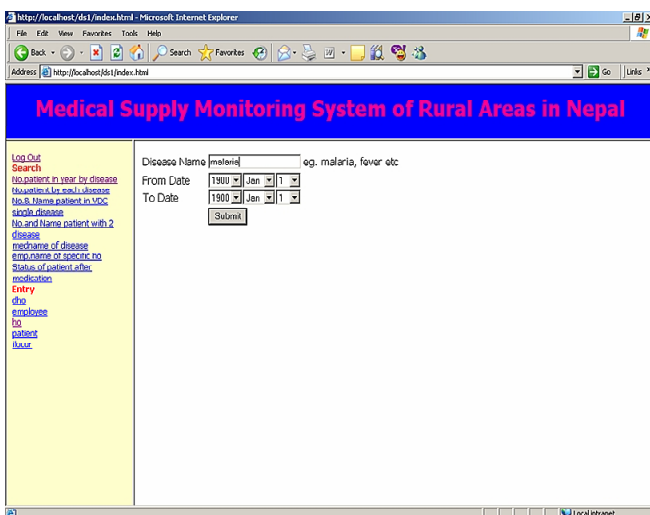


Fig. 2. Screen layout to make analysis

2.2 DATABASE DESIGN

The database design consists of two suites namely data entry and search. The data entry suite contains ADD, EDIT and DELETE options for effective and easy update.

Data entry: Data entry is feasible for data such as health

assistant identity, patient identity, name, age, sex, date of birth, health office name, district name, village development committee name, ward no., medicine name, disease name, suffer date, recover date, medicine start date, medicine end date, and so on.

Search: The database facilitates the querying of information such as number and name of sick inhabitants in a specific area in specific period of time, name of medicine for particular disease, name of the health assistant for specific health post, and number of sick inhabitants with more than one disease in the database according to the input parameters selected by the user.

2.3 CONTEXT DIAGRAM

The context diagram of the system shows the data flow diagram of 0 levels as in figure.3

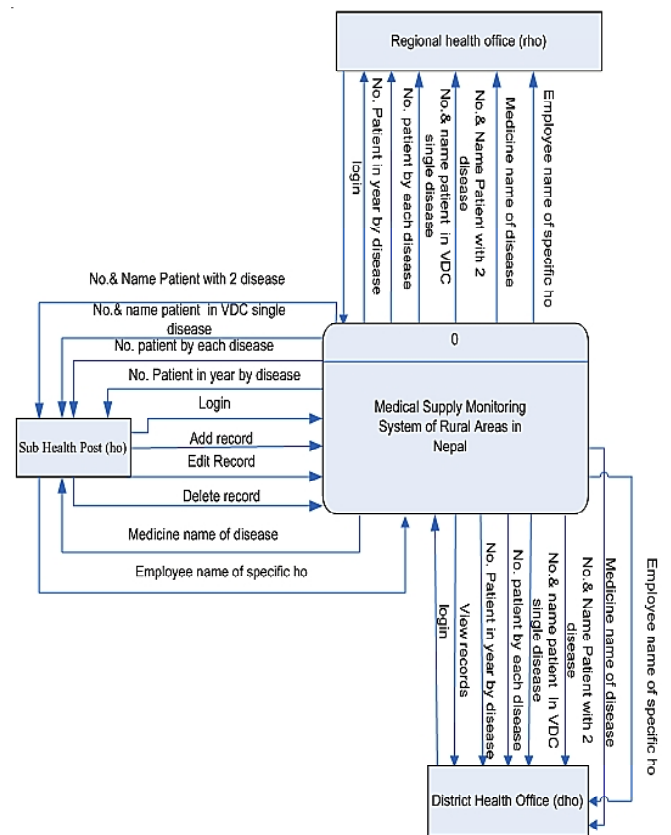


Fig. 3. Data Flow Diagram Level 0

3. RESULT

A web application was developed for collecting information related to disease and sick inhabitant of rural areas at SHP level in Nepal.

A database was also developed for storing disease information of the people in order to support a medical supply system of rural areas in Nepal at SHP level.

4. CONCLUSION AND FUTURE WORK

The current study is prototype version of the Medical Supply Monitoring System. It is able to implement some of the basic functions related to ill inhabitants in rural areas for medicine

and technical manpower management such as on-line information about health offices, ill inhabitants, and employee working in health post. The system is also allowed the users to do some basic analysis such as: the number of ill inhabitants by different disease, their status after medication, and name of medicine for specific disease on these data. It is assumed that, using this system, the Department of health will get following advantages:

- Supplying of drugs, equipment, instruments and other material at SHP level more efficiently by properly managing these resources.

- Prohibiting the misuse or abuse of drugs and allied pharmaceutical materials as well as detecting false or misleading information relating to efficacy and use of drugs.

- Supporting decision making, health care delivery and management of health services, at the national, sub-national, and SHP level

The database packages used in the current project is MySQL, web server Apache, and application software PHP. MySQL, Apache and PHP are open source softwares; Health Department can use it without cost, which helps them to reduce their operational cost MySQL is a relational database system and is powerful enough to satisfy the needs of the small and medium sized industry like the Health Department.

The developed system is prototype of the Medical Supply Monitoring System of Rural Areas in Nepal and it is not tested by real users, so it is suggested to test the system with real users and improve it. Therefore there is an opportunity to expand the system as requirement.

5. ACKNOWLEDGEMENT

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