Community-Oriented Health Management Information System

Evaluation Report

Prepared by:
Muna Matar

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Introduction

In February 1994 approval was given by the International Development Research Center (IDRC). Canada, to the Planning and Research Center(PRC). Jerusalem, to go ahead with their proposed project which was to design "A Community-based Health Management Information System". HMIS, at the Hebron district. Since then, all efforts have been made by the PRC to come up with a fully integrated HMIS.

The development of this community-based health system is considered an important step towards fulfilling the goals of the National Health Plan that was announced by the PRC. It certainly helped in gathering data on the essential health indicators.

During the preliminary stages of developing the system. serious deficiencies in the information systems used by the different institutions. were discovered. It was also discovered that there are vast differences in the ways and procedures different institutions record and keep their patients' medical information. This, of course. made the exchange or even the sharing of information a very difficult task.
Thus. this HMIS would:
- unify the information systems among different health-providing institutions.
- provide practical and up-to-date record-keeping and follow-up procedures
- monitor the pattern of utilization available services
- develop programs to address the problems facing health sector.

The process for the development of the system went into different phases: the planning phase: the data collection and the data entry phase, the system development phase, and the testing and implementation phase. The process was completed in two years, and the system in its final form is available at the PRC.

Project Phases

The different phase of the project are discussed thoroughly below. The comments and observations discussed are the result of extensive meetings with the different people, who were involved heavily in the different phases of the project. Among those were: PRC Director, the Project Coordinator, the Field Supervisor, and the Programmer. It resulted also from reviewing the "Final Technical Report" prepared by the PRC, and from a comprehensive test of the system itself.

Phase I: Planning Phase

Groups consulted

A wide range of groups were consulted at the early stages of the project as well as later stages. Those groups included:

> *Department of Health (Ministry of Health later in the Palestinian Authority)*
> *Palestinian Council of Health*
> *Palestinian Red Crescent*
> *NGO's in the Field of health services*
> *Health Professionals*

As noted from the list above, it included different institutions and individuals who are either experts in the health field or providers of health services to a wide range of the population.

Due to the absence of any health authority in the West Bank and Gaza at the time this project was carried on, most of the above mentioned groups were the mean source of health services providers, therefore they had an excellent knowledge of the health situation. They also used to reach the widest range of the population. not only in the Hebron area but also in the whole of the West Bank and Gaza.

Committees formed

Two committees were formed during the course of the project. Those committees participated in and monitored the progress of the project though out its different phases. Those committees were the:

Steering Committee: It included seven members who represented:
- *PRC*
- *Department of Health*
- *Palestinian Council of Health*
- *Palestinian Red Crescent*
- *NGO's* in the Field of health services
- *Public Health Professional*

Technical Committee: which included the:
- Project Coordinator
- Field Supervisor / Technical Assistant
- Programmer
- System Analyst

From the two lists above, one can see that the choice of the two committees members was done carefully. The names of the committees' members included some very well known figures in the health sector, those who have been involved very heavily in the different health-providing institutions.

Selection of institution

A representative sample of institutions was selected. Due to the nature of the population distribution in the Hebron district. the choice of the participating institutions in the field survey was a well representative one, whereby: 3 government . 2 NGO, and 2 UNRWA facilities were selected. This selection took into consideration also the location of these facilities whether they existed in a city, village or camp. It is obvious that the selected facilities were a true representative sample of the health provider institution in the district.

The selection of the government facilities was somewhat limited? There only exists one government hospital, and actually it is the biggest hospital, in the Hebron district. They could have selected one government clinic. one that provides primary health care, either a village or a refugee camp location. There is a large percentage of the people go to these kind of clinics, especially because of the health insurance regulations.

Phase II: Data Sheet Development Phase

The development of the data sheets went through several stages.
The "Data Elements Definition" study was produced and reviewed by committee members and health professionals. then the data collection sheets were prepared. Those sheets went through a series of revisions. tests and improvements until the final data collection sheets were produced. The data collection sheets that were used were comprehensive in the sense that they covered health issues as well as scio-economic issues of the interviewees.

Phase III: Field Workers Phase

The process used in selecting the field workers was a professional one. Due to the experience the PRC had in conducting field studies, this process was performed in a practical way which in turn helped in later stages of the project like data collection and data entry.

The training that was given to the field workers included an organized set of activities that introduced the main goal of the project, the questionnaires to be used, ways of filling in these questionnaires and problem handling in terms of different kinds of problems that could come up during data collection. This training process helped also in revising and improving the data sheets . The backgrounds of the field workers helped make this process a smooth one.

The number of the participating field workers could have been increased to cover more working hours. This could have helped in reducing the pressure on the field workers as well as speeding up the whole process.

Phase IV: Data Collection and Data Entry Phase

Talking to the field supervisor, some problems were encountered during the data collection process, Since there exists no unified way for keeping patients' records, each health-providing institution among the ones that were selected, had their own way of record keeping. This introduced some problems that the data collection sheet had to deal with.

The different stages the designing of the data sheet went through, as well as the proper training of the field workers had, helped in reducing the size of those problems.

During the data collection stage, the data entry program was being developed and tested. Some of the collected data sheets were used in the testing phase which helped debug the data entry program and make it ready for the actual data entry.

The data collection was completed in five month while the data entry took tow months.

Phase V: MIS Development Phase

Nothing special was done in the actual design of the system . More attention should have been given to the end product rather than the way the actual data is going to be stored in. The actual needs of the users and various uses of the system should have been studied carefully, and the design of the system itself should have depended heavily on those needs and uses.

Almost all of the time and effort in the preparation phase was spent on the design of the data collection sheets, data collection, and later on the way this data was going to be entered into an electronic form. More attention should have been given to the idea that this electronic information should be presented in a way that would help a wide range of users use it for different intentions and purposes like assessment, future planning. record keeping, etc.

Phase VI: Testing and Implementation Phase

Nothing much has been done regarding this very important phase of the project. The system has been tested by PRC staff and others who were involved in the development process. It has not been installed at any of the institutions that participated in the survey. So in reality those institutions did not get the chance to test it and get an idea of the benefits they have been promised when they accepted to participate.

Conclusion

The end product is a very rich data base of health information. It contains very detailed information which could be useful for a wide range of people: health professionals, administrators, decision makers, and researchers.

The socio-economic aspect of the survey is very well prepared. It contains data that would be very useful for future planning. It could give very good indicators about some very important medical findings especially those related to the environment and to the living conditions.

The effectiveness and the true value of this system cannot be proved unless it is implemented and tested by professionals. This involves installing the system in clinics, hospitals, and other health-providing institutions and putting it into action.

A wide range of people should be involved in the process of testing and evaluating this system. Each would look at the system form a different perspective and hence, require different types of information. The system should not only make this type of data available, but, it should make it easily accessible.

This HMIS is considered a good start for a pilot system and is a bases for starting a wider survey on the national scale. A thorough study of the various uses must be accomplished before being developed into a complete integrated system that could be adopted by health institutions and then replicated in other geographical areas.

This system, if developed into a fully automated HMIS, will contribute significantly to the critical needs of the Palestinian people, especially at this very important period of time in the life of the Palestinian were they are fighting to build up and strengthen their infra-structure that was destroyed by the very long years of occupation.

Recommendations

The system in its present condition could be described as a well organized data base of information. It has not yet been fully developed to be a true integrated MIS. Some modification needs to be done on it to be a true HMIS.

Listed below are some of the main points and improvements, if adopted would help make the present system a much better one and would help improve the chances this system has in being adopted and replicated in other areas:

1. *User interface*: A very basic characteristics of an MIS is to be user friendly. This means that people do not have to be computer professionals to operate the system. The regular user do not have to worry about the structure of the data base. He/she does not need to see the whole data base as soon as he/she loads the system.
   It should be easy accessible by people with different backgrounds and different positions in the health providing institution like administrators, doctors, lab technicians, etc.

2. *Validity of the data*: Looking into the data from different perspectives and levels, one could conclude that in some cases there is inconsistency in the way the data has been interred and kept. For example dates. In different locations, dates have been entered in different formats.
   There should be a systematic procedure in checking and maintaining the data entered. In some cases, very essential data have either not been entered or entered incorrectly. These kind of mistakes could have been caught if there has been a regular way of checking the data after it had been entered.

3. *Updating Data*: The nature of the data this system deals with is not fixed and rigid, which means it could be changing regularly. As a necessary step towards making the system reliable and up-to-date, a procedure of updating the data should be followed. This procedure should be studied and designed carefully. It is not clear from what the system offers in its present form, if it is capable of accumulating data in the sense that one could review the medical history of a patient, for example, or if it only keeps the last update.

4. *Report Generation*: In most cases the main interest of an administrator in a health institution is to get reports about the daily activities in a certain clinic or department in the institution. As is stands in its present condition, a computer professional has to operate the system in order to get such a reports. A very well organized and comprehensive report generating screen should be prepared to make it easy for such administrators to get the needed information.

5. *User Committee*: As mentioned in the original proposal. a User Committee must be formed to examine the system itself and suggest any improvements or modification on it before it could be adopted and replicated in other areas. This will help produce a fully integrated MIS that is essential for an efficient health care system and which will be an asset to decision makers.

6. *Promotion Workshops*: According to plan the PRC is planning to hold a series of workshop to promote the system. As it stands right now, the system could, in some ways, leave a negative impact on people, especially if they were not able to operate the system themselves and extract needed information in an easy manner.

The above listed recommendations are not difficult to accomplish. With the amount of effort. time and money spent in this project. these recommendation become a modest set of improvements to make the present system a practical and fruitful one.

Finally. a word of thanks to IDRC Canada. especially Dr. Aware Islam. for giving me this opportunity to be part of this evaluation for such an important project, one that could contribute significantly to the standardization of the information flow for health facilities.

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