

CHAPTER I
INTRODUCTION



1. STATEMENT OF THE PROBLEMS

The introduction of information technology in the hospital environment has paralleled an increased need for timely and accurate data from various sources, technological innovation, and a growing awareness of the need to integrate all information systems under a uniform umbrella of an integrated hospital information system (HIS) (Bakker et al. 1988). The sheer amount of data in hospital operations represents an opportunity to implement an information system that can gather, organize, and process administrative and patient-related data; retain data for retrieval and analysis; summarize data into reports; and assist in administrative and medical audits and utilization reviews. The ability to store and retrieve accurate, timely and consistent data, effectively report those data, and allow transferability of data to other applications within a hospital environment is valuable for effective management of hospitals and treatment patients. Moreover, getting timely information out of a system assists physician and other hospital personnel to do their jobs and improves work gratification and patient satisfaction (Vahl 1978; Bartone 1983; Covvey, Craven, and McAlister 1985).

New opportunities in information technology - availability of mini and micro computers, decreasing hardware costs, increased availability of software packages, and improved ability to integrate information systems within and among organizations - are shifting the way information systems are used to support organization activities. These developments may enhance the utility of distributed information systems in hospitals and improve the effectiveness and efficiency of their functioning. Yet, while enhanced information systems have much to offer hospitals, organizational risk-such as loss control, creations of islands of information, and redundancy and inconsistency of data among applications-may increase unless attention is given to system design and environment analysis.

The information system in many hospitals in Vietnam has been so far is not so qualified. There are always problems about inadequate, delay and conflict information. Managers often can not control very efficiently resources such as personnel, equipment or drug. They also have many problems in searching medical records and in producing a regular or fast report.

It is very crucial to improve the information system in hospitals, especially in central hospitals because they have much modern equipment, leading experts

and doctors and play a key role in the national health system. These institutions also have the potential to apply latest informatics achievements in data collection and processing, thanks to the great investment and direct management from the Ministry of Health. A successful study and establishment of a HIS will be a practical and theoretical basis to computerize the information processing for other hospitals in the whole country.

2. BACKGROUND TO HEALTH SERVICES IN VIETNAM

The Health Services in Vietnam were all government operated until after the 6th National Congress of the Communist Party, held in November 1986, when the government introduced a mixed economy with a market-oriented system under readjustment by the state. Since then there has been a progressive development of private medical practice and private enterprises in health, more rapidly in the South than in the North, running in parallel with the government system of curative services. A further significant shift in government policy was the introduction of part charges for some health services and payment for a number of public health services those previously available free of charge.

The Government health services are provided through a state network comprising four levels of facilities, being subject at each level to the political system. Health

Steering Committees always form part of the People's Committee structures at each level. The four levels are :

- The central level
- The provincial level
- The district level
- The communal level.

The functions of each level are described in this section.

In all of the first three levels in the state health system are found to be hospitals with beds. Furthermore, there are health institutes with beds and a set of health establishments operated by other ministries outside the state health service and which include some 27,680 hospital beds, distributed among 1,513 establishments.

2.1 Central Level

At the central level is the Ministry of Health (MOH) whose main role is to define policy and provide technical advice to the political bodies. The MOH has the direct authority and responsibility for the operation of all central level hospitals (including polyclinics and specialized clinics), facilities (including the university medical schools and several specialized institutes) and a



number of state enterprises for drug manufacture, equipment manufacture and repair etc.

At this level, there are 33 hospitals and institutes with beds with the total of 11,141 beds, distributed in Table 1.1 (MOH, 1992):

Table 1.1 Hospital and Health Institutions with Beds at Central Level

	Establishment	Hospital beds
- Institute with beds	8	1,750
- Specialized hospital	7	3,110
- General hospital	12	5,791
- Sanatorium	2	280
- Leprosarium	2	200
- Polyclinic	2	10
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Total	33	11,141

The central hospitals have 5 missions as given below:

1. to be the highest level of the health system in charge of curative care
2. to study and apply curative and preventive methods
3. to train and retrain health cadres
4. to propagate technical and scientific achievements of the field in which they are

specialized

5. to direct and monitor and stately manage the specialty that they are specialized in.

2.2 Provincial Level

The Ministry of Health in Hanoi is not represented by a provincial ministry health service. The Provincial Health Service Office is under the authority and direction of the Provincial Government Administration and the Provincial People's Committee who appoint the Director of the Provincial Health Service and fund the provincial level of services. The Provincial Health Service manages all the health programs at the provincial (or city) level. These consist of provincial hospital, specialized hospitals, secondary medical schools and the vertical health programs (eg. Expanded Program for Immunization, Organized Family Planning Services).

There are 53 provinces in Vietnam with a total of 87 general hospitals and 90 specialized hospitals with 53,522 hospital beds which are at the provincial level. The specialized hospitals, existing only in some big cities, consist of a tuberculosis hospital, a mental home, a traditional medicine hospital and in some place, a pediatrics hospital. These could cater for an average of

350,000 inhabitants each, but they are not located or established to achieve this distribution.

The provincial hospitals are the highest health center in the province (or city) and have the similar missions to the central hospital but at the provincial level.

It is from the Provincial Administration and the People's Committee that the funding of the provincial health services comes. The funding is allocated from taxes collected at this level from provincial enterprises, levies on communes and more recently from taxes on household incomes. Funds do not come from centrally collected tax and therefore the provincial hospital are not under the direct control and direction of the Ministry of Health in Hanoi.

2.3 District level

The health services to the rural population, which comprise 80% of Vietnam's population, are delivery under the overall responsibility of the remaining two levels of the health system. These two levels are under the administration of the District Peoples Committee and under the responsibility of the Commune Peoples Committee respectively. The 53 provinces in Vietnam are divided into 467 administrative districts and 9,730 communes.

The District Health Services are operated under the umbrella of the District Peoples Committee and district administration. There is a Health Steering Committee for each district. It is the District Peoples Committee which appoints the Director of the District Health Service and is responsible for the funding of both the staff and operating costs of the district health service, including the staff of the inter-communal polyclinics, but not at the commune level.

The role of the District Hospital in Vietnam is the first line hospital referral center for emergencies, abnormal deliveries and diagnostic procedures. Each district hospital serves each respective district and supported by three or four inter-communal polyclinics. The distribution of the 516 district hospitals, within the health service throughout the country is fairly uniform with at least one for each of the 467 districts serving population catchments of between 100,000 to 250,000 on average. The usual size of a district hospital is 150 beds.

2.4 Communal level

90% of 9,730 communes in Vietnam has a communal health center whose mission is to be the first-line for primary health care. There are about 9,000 communal health centers distributed fairly equally in the whole country (NHSIC, 1991).

3. HIS MODEL

A hospital information system (HIS) generally consists of four functional groups as follows (Zviran, 1990):

1. Administrative systems, a partial list of which includes accounting, financial, human resource management and general management systems.

2. Patient management systems contain patient registration, medical record, clinical systems and monitoring systems.

3. Facility information system includes data from hospital's laboratory, radiology, operating room, blood bank, and pharmacy.

4. Medical information, such as diagnosis, medical research, medical reference and bibliography.

4. THEORY OF CHANGE AND RESEARCH RATIONALE

In many countries, the computer has been applied to manage information very effectively.

Before this technology can be acquired, the user must know what is their information need, the volume and current method to process this source, especially when the budget is limited, so that the user can invest effectively and efficiently in this area.

I would like to have study every sections above, however because of a limited study budget and time, I have chosen what appears most important to achieve the mission of hospital and easiest to achieve. According to the theory of change, we must have the following inequation to have a successful change :

$$C = (abd) > R$$

where : C - Probability of changing

a - level of dissatisfaction with the status quo

b - clear or understood desired state

d - practice first steps toward a desired state

R - cost of changing

After taking consideration with the counsel from my advisors, I chose the three divisions below as subject for my research :

- The pharmacy can be considered as the blood supply in hospital. If we manage the pharmacy effectively and efficiently we can improve both the quality of service and find out the common essential drug list : we can revise it and adjust the drug inventory.

- The OPD is the biggest and first place to deal with hospital users, it serves a majority of patient and

sets the image of the hospital. If we improve the information there we can upgrade the quality of service such as reducing the waiting time etc.

- Medical records can help the physician save the time in searching, sorting and updating data, they can also help to provide the statistical data and find out, for instance, the most common diseases in the hospital.

5. PURPOSES OF THE STUDY


The general purpose of this study is to investigate the model of existing management information system in central hospitals of Vietnam at three modules : medical record, pharmacy and outpatient departments in order to find out the information for developing an appropriate MIS for those hospitals.

The specific purposes are :

1. To define what is the most crucial information that managers often need in central hospitals located in Hanoi.
2. To determine the volume and the frequency of information and data processed periodically at the central hospitals (e.g patient admission, drug control, staff management, etc.)

3. To determine the method by which the information is currently collected.

4. To provide to managers and informaticians a theoretical and practical basis for determination of a proper model of management information system in terms of both hardware and software in central hospitals with the expectation that the management in hospitals of Vietnam will be upgraded and modernized and catch up the level of the one in the South East Asian region.



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