

# HEALTH INFORMATION SYSTEM IN CAMBODIA

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## Introduction

The redefinition of a national health information system (HIS) in Cambodia was a critical task of the Ministry of Health. The Ministry started reviewing the system in 1992, and it took about two years to design a new health information system. The HIS was officially approved in December 1993, and implementation began in March 1994.

## Objectives and Principles

Originally, the HIS was a service-based reporting system that encompassed the routine service reporting system and a disease surveillance subsystem (the alert system). In Cambodia, HIS does not include logistics or administrative information specific program information, or vital registration systems. The responsibility for different aspects of health information management in Cambodia is presented in the table below.

**Table 1 National Health Information Systems**

	<b>Logistics/ Administration Information System</b>	<b>Health Information System</b>	<b>Disease Surveillance System</b>	<b>Specific Program</b>	<b>Vital Registration System</b>
<b>Areas</b>	Finance Drugs Personnel Training General Administration				
<b>Responsibility</b>	Line Department-- e.g., Finance is under the Department of Finance	Department of Planning and Health Information	Department of Communicable Disease Control	Line program	Not under the Ministry of Health
<b>Frequency of reporting</b>	Monthly, Quarterly, and Annually	Monthly, Annually	Weekly, Monthly, Quarterly, and Annually	Monthly, Quarterly, and Annually	

The general objective of the HIS is to provide the Ministry of Health and different levels of the health system with reliable information on health problems and health service activities for planning and management of health services.

Principles for the development of HIS include:

- Reflecting the reality of Cambodia's health system and existing policies;
- Using existing technical and material resources at each level of the health care system;

- Use models developed by national programs and nongovernmental organizations (NGOs) working in Cambodia;
- Achieve consensus with the central Ministry of Health managers and national programs managers;
- Select indicators that are useful for practical decisions in the Cambodian context, focusing on a minimum data set; and
- Gradually introducing the system to provinces with training on recording, and the utility of health information.

### **Design steps**

The following steps were taken in designing the HIS:

1. Formed a unit to take charge of the HIS and a Subcommittee for the Health Information System;
2. Evaluated existing information systems, including systems created by national programs;
3. Identified needs with main stakeholders;
4. Defined an indicator list;
5. Select information to be included in the reports, and developed supporting tools for information collection and transmission;
6. Develop instructions for filling out forms, and defined terms/cases in the reports;
7. Developed forms for field testing in three provinces and nine districts;
8. Before introducing the new HIS, designed workshops for national, provincial, and district levels;
9. Developed software that includes systems for entry and retrieval of data;
10. Install a computerized system.

### **Main Characteristics of New HIS**

- Integration
- Standardization
- Simplicity
- Reliability
- Computerization

### **Components of HIS**

The new HIS consists of five main components:

- *Monthly routine reports*: forms for first-line health facility, hospitals, district health office, and for provincial health department;
- *Alert system (zero reporting)* is a weekly surveillance system to report on four main health problems: cholera, dengue haemorrhagic fever, measles, and acute flaccid paralysis;
- *Annual inventory reports* for facilities at all levels: forms for first-line health facility, hospitals, district health office, and provincial health directorate;
- *Quarterly reports* for two national programs: tuberculosis and leprosy;
- *Register forms* to support data collection containing all daily registers for all areas, such as general consultation, hospitalization, birth delivery, and immunization.

### **Implementation, Monitoring, and Evaluation**

The new HIS was implemented in March 1994. The computerized system was also set up with HIS software using an application called Episurv. Supervision has been carefully planned and conducted. The first HIS evaluation conducted in 1995 reported positive results. However it also noted some constraints:

- software problems;
- slow process of capacity building;
- irregularity of funding support; and
- limited use of information, especially at peripheral levels.

The HIS was revised and was expected to be in place by 1996. This was not achieved for several reasons, two of which are irregularity of financial support from donors and partial implementation of the national health system reform. In late 1996, the HIS was revised again to reflect the new health system and reached nationwide coverage in January 1997.

To adapt to the new structure and service packages of the health system reform, reporting formats and their contents were changed. A computerized system was also developed using MS Access software. In late 1999, the HIS was revised again, and the revised system has been in use since 2000. There has been a delay in developing the new software due to technical and financial constraints. Development of new software is underway, and completion is planned for the second quarter of 2001.

### **Flow of information**

- Data are collected through daily registers.
- Monthly report from health centers (HC) and hospitals (RH) are sent to operational district health offices (OD) between the 1<sup>st</sup> and the 5<sup>th</sup> of the following month.
- The OD prepares OD report by consolidating data, then sends it to the provincial health directorate (PHD) between the 5<sup>th</sup> and the 10<sup>th</sup> of the following month.
- The PHD prepares its report and sends it to the Ministry of Health, Department Planning and Health Information by 20th of following month.
- At the central level, the data have been computerized and analyzed. After that, the central level provides feedback to national programs, other MOH departments, and the provincial level.

### **Use of Health Information**

Health information is used in the following ways:

- to control epidemics;
- to plan and manage the health care system at all levels, including allocating the budget, allocating drugs, and consumables;
- to formulate the workplan, and monitor and evaluate health facilities performance; and
- to monitor and evaluate health system performance.

Tools for the information use include:

- *Tableau de Bord*
- National-Level Indicators for Monitoring and Evaluating Health Sector Performance.

### **Health Information from Private Sector and NGOs**

There is no effective mechanism to gather health information from the private sector and NGOs. Plans were made, however, to introduce the revised reporting forms to these organizations in 2001.

### **Constraints**

Overall, the health information system has been functioning well. However, there have been a number of problems that have slowed down the development of the system. Constraints include:

- lack of a data culture;
- limited use of information, especially at provincial and district levels;
- lack of timeliness, especially of the alert system;
- limited staff capacity to analyze and interpret information;
- slow process of capacity building (formal training in HIS);
- irregularity of funding and technical supports from donors;
- lack of a long-term commitment from donors;
- unreliability of data;
- irregularity of and insufficient feedback; and

- lack of information from the private sectors and NGOs.

### **Future challenges and recommendations**

- Three or five-year comprehensive strategic and budget plans should be developed.
- The uncertainty of future funding and technical assistance from donor agencies. The major funding is not required, one of the main obstacles to development of the system since 1997 has been insufficient financial support.
- Communication problems, especially for the alert system.
- Inadequate supervision at all levels.
- Training staff at all levels with skills related to information analysis, interpretation, and use.
- Staff motivation related to working conditions and professional development.
- Lack of material support to central, provincial, and district levels, such as computers and office supplies.
- Orientation toward information technology.
- Hospital information systems.
- Adequate information from the private sector and NGOs.

### **Conclusions**

In conclusion, although the system is functioning, and capacity has been built at central level, the HIS staff at both the central and provincial levels do not have the full capacity to manage the system, particularly with respect to data analysis, interpretation, and use of information. Therefore, additional assistance is needed for addressing capacity building, capital costs, and running costs of the project, including training and supervision. This assistance will contribute to the sustainability of the HIS and its ability to support the development of the national health care system.