

# **Thailand**

## **Health Care Reform: Financial Management**

### **Report 1**

#### **Statistical reporting: Structures, methodologies, data and outputs Initial review**

May 2009

**ILO component:  
Financial Management of the Thai Health Care System (THA/05/01/EEC)  
under:  
EU/Thailand Health Care Reform Project (THA/AIDCO/2002/0411)**

**Social Security Department  
International Labour Office - Geneva**

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## List of abbreviations

AG	Auditor General
CFMU	Central Financial Monitoring Unit (Health)
CG	Comptroller General
COHI	Central Office for Healthcare Information
CPH-CU	College of Public Health - Chulalongkorn University
CSMBS	Civil Servants' Medical Benefit Scheme
DCR	Department of Commercial Registration (MoC)
EU	European Union
FDA	Food and Drug Administration
FPO	Fiscal Policy Office (Ministry of Finance)
GDP	Gross Domestic Product
GFMIS	Government Financial Management Information System
GFSM	Government Finance Statistics Manual
GPP	Gross Provincial Product
HWS	Health and Welfare Survey
HISO	Health Information System Development Office
IHPP	International Health Policy Programme
HSRI	Health Systems Research Institute
ICD	International Classification of Diseases
ICAAT	Institute of Certified Accountants and Auditors of Thailand
ILO	International Labour Organization or International Labour Office
INFIMO	Integrated Financial Monitoring System (Health)
IPS-CU	Institute of Population Study - Chulalongkorn University
ISIC	International Standard Industrial Classification of Economic Activities
MCRD	Medical Coordination and Rehabilitation Division (SSO)
MIS	Management information system
MoC	Ministry of Commerce

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MoD	Ministry of Defence
MoF	Ministry of Finance
MoPH	Ministry of Health / Ministry of Public Health
MoI	Ministry of the Interior
NHA	National Health Accounts
NHSO	National Health Security Office
NPISH	Non-Profit Institutions Serving Households
NSO	National Statistical Office
PI	Private Insurance
PIN	Personal Identification Number
RoW	Rest of the World
SECSOC	Social Security Department (ILO)
SNA	UN System of National Accounts (various revisions; latest: 1993)
SSO	Social Security Office
SSS	Social Security Scheme
SET	Stock Exchange of Thailand
UC	Universal Health Care Scheme
WCS	Workmen's Compensation Scheme
WHO	World Health Organization

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## Reports produced under the Project

- Report 1 Statistical reporting: Structures, methodologies, data and outputs. Initial review.
- Report 2 The calculation of capitation fees and the estimation of provider payments. Initial review
- Report 3 A Financial Coordination Framework. A first general outline
- Report 4 Proposal for a Revised Capitation Calculation and Financial Equalisation System
- Report 5 An International Course in Health Finance for South-East Asia
- Report 6 A Common Health Care Financing Model (I) for CSMBS, IHPP, NHSO and SSO. Terms of Reference, Review and Supervision; and Proposal for the Implementation of a Financial Management Structure
- Report 7a A Common Health Care Financing Model (II) for the main health purchasing agencies
- Universal Coverage Scheme
  - Social Security Scheme
  - Civil Servants' Medical Benefits Scheme, and
- Projection Module for the National Health Accounts  
*User Manual*
- Report 7b A Common Health Care Financing Model (II) for the main health purchasing agencies
- Universal Coverage Scheme
  - Social Security Scheme
  - Civil Servants' Medical Benefits Scheme, and
- Projection Module for the National Health Accounts  
*Documentation of work and progress*
- Report 8 A Common Health Care Financing Model (III) for CSMBS, IHPP, NHSO and SSO, and
- Proposal for the Implementation of a Financial Management Structure.  
*Note on Implementation*
- Report 9 A Data Reporting Framework
- Report 10 Indicators for the Financial Coordination Group for monitoring the UC scheme and national health budget
- Report 11 Contents and Structure for Annual Reporting on the Financial Development of the Public Health System
- Report 12 Proposed structure of an Integrated Financial Monitoring System



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## Foreword

Since May 2003 the European Union (EU) has been committed to supporting health care reform in Thailand through the **Health Care Reform Project** (THA/AIDCO/2002/0411). The support and assistance of EU followed Thailand's bold initiative towards achieving full population coverage in health care when, in 2001, Universal Health Care was written into law with the introduction of what became popularly known as the "30 Baht" scheme. Under the scheme full access to health services became available to all Thai citizens.

A separate component was established within this project to address issues specifically relating to the **Financial Management of the Thai Health Care System**, and was awarded to the International Labour Organization for execution by its Social Security Department at ILO Geneva (THA/05/01/EEC). Technical assistance activities under the project have been on-going since spring 2006 and will continue until mid-2009.

Specific activities were scheduled under the ILO component, each to be documented in a series of technical reports. One of the very first activities scheduled was a review of "present financial procedures". This review was to be delivered as two separate reports on:

- 1) the present state of the statistical reporting system; and
- 2) the calculation of capitation fees and payment systems in Thailand's health system.

(Further specification of tasks can be found under ILO 2005, p. 8.)

*The present Report addresses item (1) above, i.e. the statistical reporting of the Thai health system, its structures, methodologies, data and outputs.*

In March 2006 Mr. Wolfgang Scholz, senior economist at ILO-SECSOC, undertook a three week mission to Bangkok, Thailand. This report is based on the findings of that mission, which was substantially supported by the project implementation team located at the National Health Security Office (NHSO) headquarters, Nonthaburi, headed by their international and national directors, Messrs. Tenambergen and Joungudonsuk. The author is especially grateful to Mr. Samrit Srithamrongsawat who patiently listened and answered questions, and to the tireless Ms. Kanjana Tisayaticom, mission assistant.

This report draws further substance from discussions held with Ms. Taweeri Greetong and Mr. Thaworn Sakunphanit, both NHSO officials who, during 2005-2006 were students on the Social Protection Financing (SPF) Masters course at the Graduate School of Governance in Maastricht, Netherlands. They helped to clarify many open issues during their visit to ILO headquarters, Geneva, from 31 July to 4 August 2006 and kindly gave permission to use, for the purposes of this report, information contained in their recently finalized Master theses (see list of references).

It should be noted that this report is intentionally "draft" in nature given the point at which it was written and the complexity of the tasks to be fulfilled under the ILO component. Many issues addressed here therefore would require further in-depth research and clarification during later stages of the project. Indeed, it was intended in the project outline that this and other initial reports would be reviewed or complemented by further reports during the course of the project, one of the objectives being a fully-fledged design proposal for a financial monitoring system for Thailand's health sector.

The attentive reader will realize therefore that this report contains a number of "unresolved" issues requiring further clarification; clarification which can only be achieved with project progress. The contents of this report have nevertheless been checked and counterchecked several times; we may thus assume that the factual information

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contained herein is correct and serves as a solid platform from which to launch further investigations and recommendations. Any remaining flaws, of course, should be attributed to the author.

*Note:* This report was finalized in late 2006. However, the project design and specific tasks to be carried out under the ILO component had meanwhile, in autumn 2006, been somewhat reshaped and reoriented. The substance of the present report - already drafted - nevertheless remains largely unchanged; we believe that, despite its slight bias towards a more macro-analytical approach, the report is sufficiently technical to serve as a useful reference for later steps in the project.

# 1. Introduction

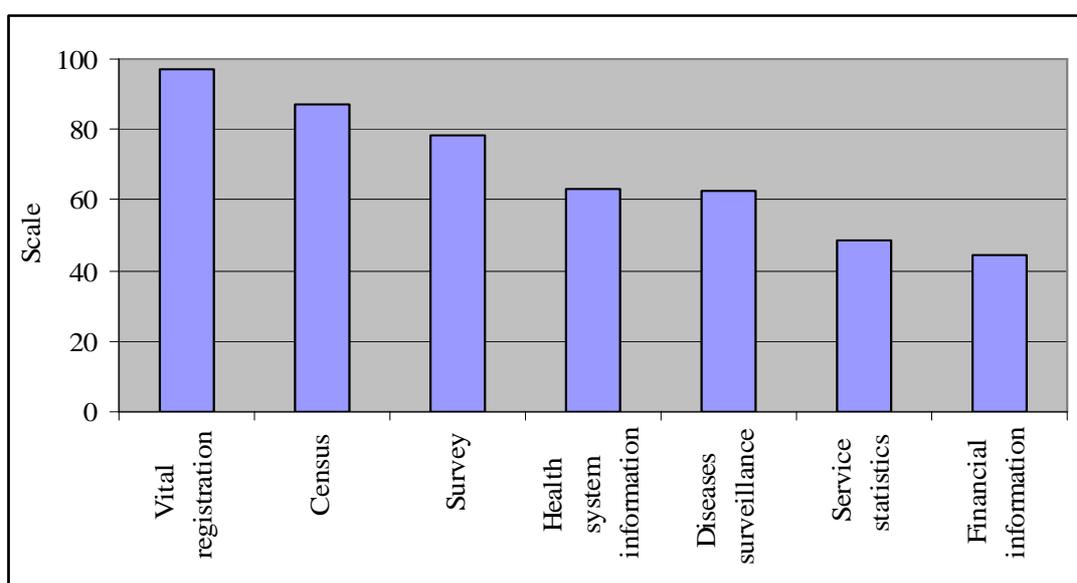
Factual information on Thailand’s health system is scattered. Generally speaking, this assessment is shared by most professional observers; it is equally true with respect to information on the system’s finances.

For reasons of quality assessment the Health Information System Development Office (HISO) recently undertook a Delphi-type study (small groups consensus methodology) among experts and users of available information on the Thai health system. In this survey, interviewees were asked to rank between 0 and 100 different existing data platforms (Thai statistical programmes) according to their:

- 1) information contents;
- 2) capacity of available resources;
- 3) turning theory (methodology) into practice;
- 4) dissemination of information; and
- 5) integration with other statistics/methods.

The above five items were given equal weight, i.e. overall assessment was calculated as their arithmetic average (Chart 1).

**Chart 1. Quality assessment of various health statistics programmes**

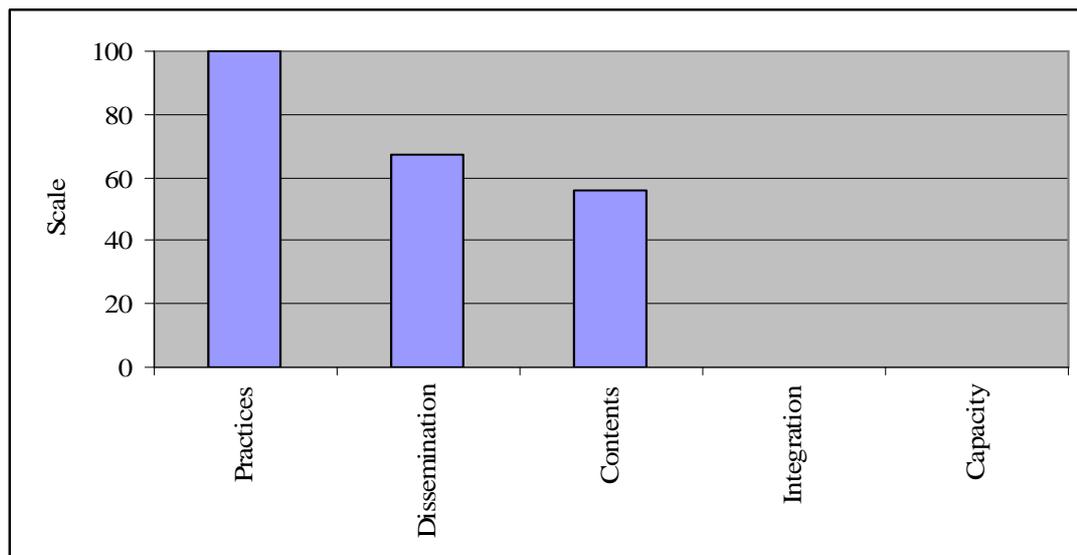


Source: HISO communication, March 2006.

While the information on the health system in general ranks average, it is the programmes related to population statistics that rank higher, with vital statistics (births, deaths by place, cause, etc.) scoring highest.

By contrast, financial information ranks lowest. For a better understanding of this result, it is interesting to look at the above five criteria (Chart 2).

**Chart 2. Quality assessment of health financial information by criterion**



Source: HISO communication, March 2006.

Obviously, turning method into practice, to the extent it happens, is satisfying: the administration knows how to handle its accounts. However, dissemination and contents are being judged, *cum grano salis*, only average. The reason for the overall low(est) ranking of financial information is to be seen, however, in the fact that interviewees ranked integration with other statistical programmes, and available capacities for the compiling of information sufficiently, *zero*.

This result is confirmed and bolstered by other, objective, facts regarding Thailand's overall statistical fabric, and its health statistics especially, which will be addressed in this report.

The existing wide gaps with respect to financial statistics, including information on physical, monetary (cost) and further structural, variables, must be closed and as quickly as possible. After Thailand's stark move towards full health coverage of the population, close and informed financial monitoring is now vital for medium-term adjustments of the established new structure of the health system, as well as for its further improvement according to emerging future needs and circumstances over the medium and long term.

Some consideration should be given as to whether such statistical improvements can be achieved without a substantial amendment of the Statistics Act, B.E. 2508 (1965).

It seems that the "scatteredness" of Thailand's statistical landscape can only be overcome by way of a substantial institutional (administrative) reform. In this respect the report later addresses a number of problems.

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## 2. Financial management versus financial monitoring – management data versus statistical data

Distinction has to be made between financial management and financial monitoring. Financial management is based on management data, financial monitoring on statistical data.

In practice, there are obvious overlaps between the two, but for a profound understanding of the purpose of this report (and the goal of the ILO component under the overall project) it is considered helpful to carve out a clear distinction: the ILO component is about financial monitoring and, thus, statistical data and not about financial management.

*Management* is understood here as the system of operations, *within* the health system, required in order to comply with the law. This comprises daily interaction, as required, with the health system's beneficiaries and providers, including their registration and de-registration, maintenance of medical records, the administering of claims, complaints etc. The efficiency and effectiveness of these activities have implications on the system's finances, thus they are part of financial management in a wider sense. In a more narrow sense, financial management is (only) about the periodic (daily, monthly, occasional) collection of revenue, including its enforcement, the reimbursement (pay-out) of claims, the payment of staff salaries, the purchase of goods and services, of investments and the like – including posting all of those activities in financial accounts. Financial management includes regulated application of standard accounting rules. These are activities to be executed equally (more or less, details depending on legislation) under any health administration system.

In contrast to management, which serves the main purpose of running an institution according to pre-defined rules, monitoring follows significantly different purposes, usually on a higher level of abstractness, often model-based.

*Monitoring* of the health system is about preparing political decisions of a strategic nature, for example, with respect to changing the administrative operations of the system or shaping the future legal design of a system. One can think of many other subject matters that are open to monitoring. Monitoring goes *beyond* the health system: it is being carried out, not only within the health system (like management), but also by actors outside who have an interest (political, financial, scientific, etc.) in the overall operation of the system.

Health system decisions can be prepared through informed public debate (based on monitoring results), through informing decision makers in governments and in other societal institutions, and/or otherwise. Implicitly or explicitly, all such information, including the debate surrounding it, is based on models; these may be sophisticated complex and interdependent models, of a pure mathematical or a pure heuristic nature (to mention two extremes), developed by experts with substantial expertise; or discussants/decision makers using information according to only small linear mental models ("back-of-the-envelope" models). It is the complexity of the subject matter, questions of practicability and many other reasons that determine the complexity of models used in a concrete case.

In health systems, an obvious model against which systems could be monitored would be, for example, a target ("model") health status of the population (of the system's addressees/beneficiaries). Monitoring would mean comparing the actual health status with the target. Only theoretically could one rely on judgement by appearances in order to find out whether a health system complies with, or deviates from, the set targets. In practice, health systems are too complex to allow such an approach to be satisfying. Thus, in practice, measurement is needed, which is when statistics come in. It is immediately

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obvious that statistics/measurement is theory based. For example, answering the question which statistic is needed in order to measure the health status of a population requires highly complex considerations: how does one design such a statistic in detail? Which activities have to be carried out in order to actually, and objectively, receive the required information? How does one make sure that one measures the right variable (providing the intended answer), and not a variable which only seemingly provides an answer?

With respect to financial statistics, i.e. statistics measuring financial flows and stocks, sufficient theory is available from which statistical practice can be organized. For example, the UN System of National Accounts (SNA) provides consistent and practical rules for the set-up of accounts of institutional revenue and expenditure, including public health institutions, for example, the NHSO. The International Monetary Fund (IMF) has published methodology broadly consistent with the SNA, stipulating in great detail the structure and contents of public accounts. Most governments around the world follow these rules, with variations usually only in detail.

With respect to health, it is the OECD that provides detailed methodological guidance with respect to the set-up of National Health Accounts (NHA), aiming at comprehensive mapping of all, i.e. not only public, health expenditure and its financing.

There are accounting rules and methods developed by international associations of accountants and other "certified" professional groups. These, also, are widely accepted by private business.

There are only limited possibilities (although some seem to exist) of imposing such accounting rules on countries. The fact that they, nevertheless, are widely accepted and applied is mainly due to their "making sense": when it comes to accounting not many theoretical possibilities do exist that can be reasonably turned into practice. The reason is that questions one wants answered by financial accounting show, in practice, considerable convergence: is there a deficit; what are the reserves; what is the dynamics and structure of expenditure; of revenue; and the like?

In practice, most statistical programmes around the world, published or not, publicly accessible or not, including the maintaining of financial information, have evolved to varying degrees according to the "knowledge needs" of enterprises, governments, central banks, households, science and possibly other entities.<sup>1</sup> Subject matters that are not wanted to be known about will not be statistically measured and registered. This situation also complies with the statistical situation in Thailand, including with respect to its health system.

As in many other countries, the historical development of Thailand's health system, its stakeholders' knowledge needs, its financial problems, its performance, *ad-hoc* type reasons and many others, have shaped the reality of its health statistics. This includes the state of financial information about the system's finances.

The main purpose of this report is to describe and assess the information, and information sources, at present available for financial monitoring, including obvious deficiencies.

In a later report, to be written during the course of the project, the findings of the present report will be "confronted" with an operational (applicable) *ideal* reporting structure

<sup>1</sup> See Wolfgang Bonss: Die Einübung des Tatsachenblicks. Zur Struktur und Veränderung empirischer Sozialforschung, Suhrkamp, Frankfurt/M. Germany, 1982. [In German only; non-authorized translation of title: Exercising the view on reality. Structure and changes in empirical social research.]

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deemed necessary for sound financial monitoring of the system. In that report, ways and means will be sounded out that might allow for a possibly year-long transformation, in practice, of the present sub-optimal state into an ideal structure.

In other words, we start by "accepting" the present state of financial reporting in Thailand's health sector; we then investigate to what extent, based on the existing situation, reporting can be improved in the direction of an ideal system within a reasonable period of time. Finally, later in the overall project, we will stipulate in detail those statistical measures deemed necessary to fill any remaining gaps. In other words, we will then, finally, design a statistical programme, which Thailand's health system stakeholders "must" adopt.

It should already be noted here that for the purpose of financially monitoring Thailand's health system, it is not sufficient to be knowledgeable only about pure financial statistics. Correct interpretation of financial statistics is usually only possible if additional information is available about the driving forces behind the financial developments, i.e. financial monitoring implicitly means equally detailed and intense monitoring of physical variables (numbers of hospitals, cases, beneficiaries, etc.), of cost variables (health price index, diagnosis related groups (DRGs), etc.), of macro-economic variables and others. One might summarize the totality of statistics necessary for proper monitoring of health finances under the concept "health satellite system" – details of a possible health satellite system for Thailand will be described in a later report (see Report 9).



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### 3. Sources of health statistics<sup>2</sup>

#### 3.1. Demography

The primary sources of demographic information/statistics are the NSO and the Ministry of the Interior (MoI). The NSO is responsible for the population and housing census, which is being carried out along UN recommendations, every 10 years (see also chapter 3.2). Another important source is the administrative statistics on registered Universal Health Care Scheme (UC) members and on Social Security Office (SSO) members.

#### 3.2. Surveys

The Ministry of Public Health (MoPH) carries out, on a regular basis, the Health Resources Survey, which inquires into:

- human resources;
- buildings;
- medical equipment; and
- covers public health care facilities and private hospitals. Its major deficiency is that it excludes information on ambulatory clinics.

The NSO regularly carries out the following censuses and surveys, with periodicity varying by programme, some of them only *ad-hoc*:

<sup>2</sup> This chapter draws substantial information from Report 9.

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<b>Number</b>	<b>Title / Programme 2004 to 2010</b>
	<b>Censi</b>
1	Population census
2	Agricultural census
3	Trade and services census
4	Industrial census
	<b>Surveys</b>
5	Survey of population change
6	Intercensal agricultural survey
7	Household survey on basic information
8	Household survey on socio-economic characteristics
9	Household survey on energy consumption
10	Labour force survey
11	Migration survey
12	Home work survey
13	Survey on informal labour
14	Survey on seeking work and requirements for the development of competency skills
15	Household survey on information and communication technology
16	Survey on social security needs
17	Survey on time usage
18	Children and youth survey
19	Sports and sports watching behaviour survey
20	Health and welfare survey
21	Survey on smoking cigarettes and dinking alcohol
22	Survey on reading behaviour
23	Survey on the congested areas in the vicinity of BKK
24	Fertility survey
25	Disability survey
26	Elderly survey
27	Mass media survey: newspapers
28	Mass media survey: radio
29	Mass media survey: television
30	Civil servants' living conditions survey
31	Small manufacturing survey
32	Survey on private non-profit organizations
33	Trade and services survey
34	Private hospitals survey
35	Hotels and guest houses survey
36	Fixed-route bus operations survey
37	Construction industry survey
38	Quarterly retail survey
39	Establishment survey on information and communication technology
40	Basic bus transport information survey
41	Pay survey
42	Community level statistics survey
43	Public opinion poll

Source: NSO.

Once the structure and procedures of a Financial Coordination Framework/Group are clarified later in the project, censi and surveys will be checked with respect to the data

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support they might be able to provide within an Integrated Financial Monitoring System (see Report 12).

At first glance the following censuses/surveys seem to be promising candidates for further investigations in these respects:

- population census;
- industrial census (ISIC Rev. 3, especially D33);
- survey of population change;
- household survey on socio-economic characteristics;
- labour force survey;
- health and welfare survey;
- survey on smoking cigarettes and drinking alcohol;
- civil servants' living conditions survey;
- quarterly retail survey.

The type and structure of information assembled in these programmes is summarized in table 1, below.

At the present stage of the project, information on the following surveys is not yet available; they will be checked with respect to their relevance for a Financial Coordination Group in due course (see Report 9):

- fertility survey;
- disability survey;
- elderly survey;
- survey on private non-profit organizations
- private hospitals survey.

**Table 1. Structure and contents of censuses and surveys**

Descriptor	Census		Survey				
	Population	Industry (ISIC Rev. 3)	Population change	Household socio-economic characteristics	Labour force	Health and welfare (H W S)	Smoking and alcohol
First reference year	1909	1964	1964	1957	1963	1974	1976
Periodicity	Decennial		Continuous	Biennial	Monthly	Biennial	Triennial
Reference time	01 April	Previous year	Revolving	Previous 12 months	Survey week	Previous 12 months	
Enumeration period	01 to 30 April	June to July					
Coverage	All persons & housing units	All establishments ISIC Rev.3	All households				
Sample size			82,000 households	70,000 households		26,500 households	
Method	Interview						
Items covered	Age		Age				
	Sex		Sex				
	Relationship to household head		Relationship to household head		Relationship to household head		
	Marital status	Type of industry		Marital status			
		Type of product	Occupation				
	Education level	Economic activities	Education level				
		Legal form	Residency status	Income			Income
	Number of children born	Number of employed	Work status	Expenditure	Fringe benefits	Diseases	Age when began smoking
	Number of children living	Income	Number of children born	Type of dwelling	Search for job	Source of diagnose	Type of cigarettes
	Number of children died	Hours worked	<i>Event of birth:</i>		Unemployed	Type of initial treatment	Number of cigarettes
	Work status	Production cost	Date of birth		Work status	Choice of initial treatment	Expenses on tobacco products
		Expenses	Place of birth		Last occupation	Type of last treatment	Knowledge on dangers of smoking
	Type of dwelling	Revenue	Birth registration		Desired occupationob	Drugs or medicines	Married women smoking
	Occupancy and tenure of dwelling		Baby identification			Choice of medicine	Abstinence from smoking
	Ownership of land	Depreciations	Number of children living	Ownership of land	Industry	Injury / accident	Number of unsuccessful attempts to quit smoking
		Output	Number of children died		Hours worked	Cause of injury / accident	Cause for quitting
		Inventory	Contraceptive method			Hospital admission	
	Durable goods	Fixed assets	Duration of pregnancy	Durable goods		Health expenditure	
	Source of drinking water		<i>Event of death:</i>	Fixed assets		Health insurance	
	Water supply system		Date of death				
Religion		Place of death					
		Cause of death					
Migration		Death registration					
Literacy		Migration		Migration			
Literacy		Literacy					
Data presentation	Province, Region, Kingdom						

Source: Own compilation based on information received by the NSO.

The frequency of the Health and Welfare Survey (HWS), i.e. the survey with most immediate relevance for the envisaged purpose, was recently increased in order to satisfy “increased demand for quality information on the actual number of people with the right to obtain ... health insurance – identified by possession of a ‘golden card’” (Opanapunt and Porapakham, 2005).

Most of the addressed additional demand came from the MoPH (and NHSO) and wished to solve a number of uncertainties that had emerged since the onset of the UC scheme. In particular, higher accuracy and actuality of the number of persons eligible under the UC scheme was crucial as it influenced the calculations with respect to the correct amount of capitation of competing institutions (NHSO, Bureau of Budget (BoB), others). Also,

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aiming at correct numbers was necessary in order to get a better base to start from for budget projections.

Initially, it was planned to execute the HWS on an annual basis (Opanapunt and Porapakkham, 2005). This would have enabled analysts to create time series of consistently structured data, which is necessary as an information base in case of time series based application of budget projections. Meanwhile, however, the HWS is being executed (only) on a biannual basis, leading to, and leaving unresolved, some of the problems as discussed earlier in this report.

Another problem of using the HWS for budgeting purposes lies within the intrinsic statistical problems of samples, i.e. their design, in general. It is not the purpose of this report to review the survey practice of the NSO. It is assumed that the NSO carries out its surveys according to best statistical practice. However, the problems of sample design comprise questions of coverage, sample size, sampling (probability sampling, quota sampling), stratification, response rates, substitution of non-respondents, the questionnaires, checking and weighing of data, treatment of missing data and the like (Eurostat, 2003) – all pose specific problems to be solved in order to guarantee representativeness and accuracy with respect to the whole population.<sup>3</sup>

Nevertheless, despite these problems, the HWS, and possibly others of the surveys mentioned, will be an element of a Financial Coordination Framework, a blueprint of which will be developed later in the course of this project (see Report 12).

### **3.3. Fiscal statistics - the Government Financial Management Information System (GFMS)**

Thailand's GFMS,<sup>4</sup> sometimes called *treasury system*, is a networked payment, accounting and financial management information system to which the MoF, the BoB, the line ministries and spending agencies have access.

The rules of access to, and the content of, GFMS are defined and supervised by the Comptroller General (CG), which implemented the real-time, centralized, integrated on-line computer system, and has run it since 1 October 2004. The system is an application of the SAP commercial package "Enterprise Resource Planning (ERP)". It covers core functions of the government's fiscal process, including budget planning and monitoring, procurement and payment, financial accounting on accrual basis, cost accounting, human resource management and management reporting.

Every public agency has to use the same chart of accounts, accounting principles and procedures, i.e. all agencies have to record financial activities of identical type under identical codes (accounts). Each account is identified by a unique code. The CG is responsible for the design and maintenance of the accounting framework.

In practice, the CG only controls the "primary account code", which has 10 digits; an example is shown in table 2 (below).

<sup>3</sup> See ILO/Thailand Report 2: *The calculation of capitation fees and the estimation of provider payments. Initial review*; under ILO/EU Financial Management of the Thai Health Care System (THA/05/01/EEC).

<sup>4</sup> On the following, see: Potter, Barry H. and Jack Diamond: *Building Treasury Systems*. In: Finance and Development, A quarterly magazine of the IMF. Volume 37, Number 3, 2000. For a fuller treatment see: Potter, Barry H. and Jack Diamond: *Guidelines for Public Expenditure Management*. Washington: International Monetary Fund, 1999.

**Table 2. Account coding system (Chart of Accounts; example)**

Account code						Account name
5	0	00	00	00	00	<b>Expense</b>
5	1	00	00	00	00	<b>Operational expense</b>
5	1	01	00	00	00	<b>Personal expenditure</b>
5	1	01	01	00	00	<b>Wages and salaries</b>
5	1	01	02	00	00	<b>Other expenditure</b>
5	1	01	02	01	06	Social security contributions
5	1	01	02	01	09	Health insurance premia
5	1	01	03	00	00	<b>Compensation for education and health</b>
5	1	01	03	02	05	Outpatient services for beneficiaries except pensioners - public health care facilities
5	1	01	03	02	06	Inpatient services for beneficiaries except pensioners - public health care facilities
5	1	01	03	02	07	Outpatient services for beneficiaries except pensioners - private health care facilities
5	1	01	03	02	08	Inpatient services for beneficiaries except pensioners - private health care facilities
5	1	04	01	00	00	<b>Supplies</b>
5	1	04	01	01	02	Supplies from the private sector
5	1	04	01	01	03	Supplies from the government sector

Source: CG (2005).

The CG has authorized public agencies to create independently ("freely") "secondary account codes", reflecting those agencies' specific activities in detail.

In the course of the project, Thailand's GFMIS will be checked in detail for its relevance to a Financial Coordination Framework (see Report 9).

### 3.4. Price statistics

Table 3 contains the structure of the medical CPI, the base data for which is being collected by the MoC. The medical CPI, item number 98 of the CPI, is broken down into the two items no. 99 and no. 111. No. 99 consists of the components 100, 104 and 109. No. 100 is broken down into 101 to 103; no. 104 into 105 to 108; and no. 109 is equivalent to 110. No. 111 is broken down into the two components 112 and 113.

**Table 3. Composition of the medical CPI**

No.	Description
<b>98</b>	<b>Medical and personal care</b>
<b>99</b>	<b>Medical care</b>
100	Drugs and medical care commodities
101	Drugs
102	Medical care commodities
103	Medical care services
104	Outpatient expenditure
105	Examination fees
106	Dental fees
107	Eye checkup fees
108	Others
109	Inpatient expenditure
110	Expenditure on hospital services
<b>111</b>	<b>Personal care</b>
112	Personal care items
113	Personal care services

Item no. 98 has a weighting within the overall CPI of around six per cent over the last three “baskets” (2537/1994, 2541/1998, 2545/2002).

Item no. 100 is consistent to a large extent with group 06.1 *Medical Products, Appliances and Equipment* of the COICOP (UN 2004).

Group 06.1 covers medicaments and equipment and other health related products “purchased by individuals or households, either with or without a prescription, usually from dispensing chemists, pharmacists or medical equipment suppliers. They are intended for consumption or use outside a health facility or institution”.<sup>5</sup> (UN 2004, p. 473.)

Item No. 101 is presumably consistent with group 06.1.1 *Non-durable pharmaceutical products and group 06.1.2 Non-durable other medical products*;

Item No. 102 should be consistent with group 06.1.3 *Durable therapeutic appliances and equipment*; and

Item No. 103 relates to group 06.2.1 *Medical services*, which include services of orthodontic specialists.

Item No. 104 (containing items no. 105 to 108) should be consistent with *Group 06.2 Outpatient services* which “covers medical, dental and paramedical services delivered to outpatients by medical, dental and paramedical practitioners and auxiliaries. The services may be delivered at home, in individual or group consulting facilities, dispensaries or the outpatient clinics of hospitals and the like. Outpatient services include the medicaments, prostheses, medical appliances and equipment and other health-related products supplied directly to outpatients by medical, dental and paramedical practitioners and auxiliaries”. To the extent consistency exists, has still to be clarified.

<sup>5</sup> Products directly supplied to outpatients by practitioners or to Inpatients by hospitals and the like are included in outpatient services or hospital services (UN, 2004, p. 473).

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Item No. 109, which is identical to item no. 110, is the equivalent to group *06.3 Hospital services*. They include:

- Basic services: administration; accommodation; food and drink; ambulance transport; provision of medicines and other pharmaceutical products, etc.; and
- Medical services: services of physicians, surgeons, dentists; medical analyses; physiotherapists, speech therapists, etc

For further details on products included in all groups mentioned, see: UN, 2004, p. 473.

A complete breakdown of the medical CPI is provided in the following table 4.

**Table 4. Consumer price index (2002=100) - Medical goods and services ("Medical CPI")**

Region	Goods/ service	2002	2003	2004	2005	2006 (Jan to Sep)
<b>Thailand</b>	Doctor fee	100.0	102.7	106.0	107.8	111.3
	Examination fee (gov.)	100.0	101.2	102.8	103.1	103.8
	Examination fee (priv.)	100.0	101.6	106.0	110.6	110.7
	Dentist fee	100.0	104.1	107.0	109.1	110.5
	Feet massage	100.0	102.4	105.0	106.2	104.3
	Hospital clinic	100.0	100.3	100.6	101.0	102.0
	Hospital clinic (priv.)	100.0	100.0	100.3	101.7	102.0
	Plaster	100.0	100.8	102.1	103.1	103.1
	Carminative	100.0	100.0	102.3	105.0	109.8
	Contraceptives	100.0	100.1	100.3	102.7	104.2
	Antifungals	100.0	100.5	101.1	102.0	102.9
	Anti inflammatories	100.0	101.5	103.2	106.1	106.9
	Antibiotics	100.0	99.8	100.3	101.0	103.2
	Antacids	100.0	101.4	102.1	103.2	105.1
	Vitamin b-complex	100.0	100.4	101.0	101.2	101.9
	Balm	100.0	100.1	99.5	99.9	100.2
	Bitter pill	100.0	100.3	100.0	100.1	100.3
	Pain relief	100.0	100.6	101.0	101.6	102.5
	Analgesic	100.0	100.8	100.6	101.5	104.1
Cough medicine	100.0	100.1	99.8	100.0	101.1	
<b>Bangkok metropolis</b>	Doctor fee	100.0	101.8	107.0	107.0	109.5
	Examination fee (gov.)	100.0	101.8	104.1	104.1	105.0
	Examination fee (priv.)	100.0	101.1	106.0	111.2	111.2
	Dentist fee	100.0	103.8	107.0	107.0	107.0
	Feet massage	100.0	101.6	105.6	107.5	103.0
	Hospital clinic	100.0	100.0	100.0	100.0	100.0
	Hospital clinic (priv.)	100.0	100.0	100.4	102.1	102.5
	Contraceptives	100.0	99.7	100.1	103.6	105.3
	Antifungals	100.0	100.5	101.9	102.7	104.4
	Anti inflammatories	100.0	101.6	103.0	107.3	108.1
	Antibiotics	100.0	100.2	101.4	101.9	105.7
	Antacids	100.0	101.4	102.5	103.5	106.0
	Vitamin b-complex	100.0	100.3	100.2	100.2	102.0
	Bitter pill	100.0	100.1	100.2	100.1	100.1
	Pain relief	100.0	101.0	101.4	102.4	103.6
	Analgesic	100.0	101.4	101.2	102.6	106.4
Cough medicine	100.0	100.2	99.9	99.7	101.1	
<b>Central</b>	Doctor fee	100.0	104.8	105.7	107.6	108.8
	Examination fee (gov.)	100.0	101.8	103.1	103.1	103.1
	Examination fee (priv.)	100.0	105.9	107.8	109.3	109.3
	Dentist fee	100.0	102.4	104.1	106.5	106.5
	Feet massage	100.0	104.0	105.4	106.6	106.6
	Hospital clinic	100.0	101.8	103.3	103.3	105.2
	Hospital clinic (priv.)	100.0	100.0	100.0	100.0	100.0
	Plaster	100.0	100.0	100.0	100.0	100.0
	Contraceptives	100.0	102.4	101.5	102.0	103.5
	Antifungals	100.0	100.2	100.1	100.8	100.8
	Anti inflammatories	100.0	101.6	104.0	106.0	106.8

Region	Goods/ service	2002	2003	2004	2005	2006 (Jan to Sep)
<b>Central (cont.)</b>	Antibiotics	100.0	100.0	100.2	101.3	101.3
	Antacids	100.0	101.6	101.1	102.2	102.9
	Vitamin b-complex	100.0	100.0	100.0	100.0	100.0
	Balm	100.0	100.3	99.1	99.3	100.1
	Bitter pill	100.0	100.2	99.8	100.4	101.2
	Pain relief	100.0	100.1	100.1	100.1	99.9
	Analgesic	100.0	99.8	97.8	98.7	100.2
	Cough medicine	100.0	101.1	101.0	101.6	102.4
<b>North East</b>	Doctor fee	100.0	100.0	100.0	101.1	105.1
	Examination fee (gov.)	100.0	100.0	100.0	100.0	100.0
	Examination fee (priv.)	100.0	100.0	100.0	100.0	100.0
	Dentist fee	100.0	104.8	106.8	125.2	135.3
	Feet massage	100.0	100.2	100.3	100.5	100.5
	Hospital clinic	100.0	100.0	100.0	100.0	104.9
	Hospital clinic (priv.)	100.0	100.0	100.0	100.0	101.7
	Contraceptives	100.0	100.6	99.7	99.9	100.2
	Antifungals	100.0	100.4	100.6	101.0	101.8
	Anti inflammatories	100.0	100.6	103.5	105.0	105.3
	Antibiotics	100.0	100.0	98.9	98.9	98.9
	Antacids	100.0	101.1	101.1	102.4	103.5
	Vitamin b-complex	100.0	100.6	102.3	102.3	102.3
	Balm	100.0	100.0	100.2	101.1	100.6
	Bitter pill	100.0	100.0	100.0	100.0	100.0
	Pain relief	100.0	99.8	99.0	99.2	100.2
	Analgesic	100.0	101.5	106.0	105.9	104.9
	Cough medicine	100.0	99.3	98.1	98.2	98.6
<b>North</b>	Doctor fee	100.0	109.3	113.9	118.0	120.1
	Examination fee (gov.)	100.0	100.0	100.0	100.0	100.0
	Examination fee (priv.)	100.0	100.7	100.8	100.8	101.1
	Dentist fee	100.0	108.4	112.0	112.0	112.0
	Feet massage	100.0	104.6	106.9	107.8	107.8
	Hospital clinic	100.0	100.0	100.4	104.2	104.2
	Hospital clinic (priv.)	100.0	100.0	100.2	101.9	101.9
	Plaster	100.0	103.7	103.7	103.7	103.7
	Contraceptives	100.0	99.9	99.9	100.4	101.1
	Anti inflammatories	100.0	101.4	102.4	103.1	103.6
	Antibiotics	100.0	99.0	98.7	97.7	98.7
	Antacids	100.0	101.1	101.3	102.8	103.0
	Vitamin b-complex	100.0	101.3	102.1	102.7	103.2
	Balm	100.0	99.6	99.6	99.6	99.8
	Bitter pill	100.0	101.9	101.4	101.4	101.4
	Pain relief	100.0	100.4	102.2	102.7	103.0
	Analgesic	100.0	100.4	99.6	98.4	100.7
	Cough medicine	100.0	100.0	100.0	101.3	102.9
<b>South (cont.)</b>	Doctor fee	100.0	100.7	104.2	112.8	123.7
	Examination fee (gov.)	100.0	100.0	101.1	105.0	106.6
	Examination fee (priv.)	100.0	108.0	115.3	118.8	122.1
	Dentist fee	100.0	100.0	100.5	107.7	117.2
	Feet massage	100.0	101.2	103.8	105.1	105.1
	Hospital clinic	100.0	100.0	100.0	100.0	100.0

Region	Goods/ service	2002	2003	2004	2005	2006 (Jan to Sep)
South	Hospital clinic (priv.)	100.0	100.2	100.2	100.2	100.2
	Plaster	100.0	100.0	106.1	110.5	110.5
	Carminative	100.0	100.0	102.3	105.0	109.8
	Contraceptives	100.0	99.3	100.6	103.0	104.2
	Antifungals	100.0	101.9	103.1	105.2	105.9
	Anti inflammatories	100.0	102.3	103.6	104.3	105.9
	Antibiotics	100.0	97.6	96.3	99.1	99.4
	Vitamin b-complex	100.0	100.0	104.0	104.4	104.7
	Bitter pill	100.0	100.0	98.8	99.2	99.2
	Pain relief	100.0	100.0	100.1	99.9	100.6
	Analgesic	100.0	98.6	98.5	100.6	102.5
	Cough medicine	100.0	99.8	100.4	100.4	100.1

Source: MoC.

In summarizing, the above medical CPI can be characterized as follows:

It mainly measures a limited, relatively small set of daily drugs and services that can be bought / are being bought over the counter by the private households, as represented in the household survey(s). Although the basket also contains drugs that are accessible to households most probably only together with a doctoral prescription it does not, by nature of its construction, contain high powered (possibly poisonous, fatal, etc) drugs, which are only being accessible within the hospital system.

By construction, the index measures market prices – be they subsidized or not. It does not measure the development of costs of goods and services within the health provider system (hospitals). It, thus, is not adequate for use as a cost driver of non-labour costs of hospitals (under the annual budget / capitation estimation process).

For the purpose of annual budgeting / capitation, further investigation is necessary with respect to an adequate cost driver for the non-labour cost elements of hospital expenses.

Independent of the adequacy of the construction of a medical price index the problem arises as to whether an INFIMO, in order to become a satisfyingly working health policy instrument, must include a substantial observatory of prices of medical products, including implicit cost structures, in a more general way, i.e. going well beyond the list of products included in the medical CPI.

### 3.5. Public and private system administrations

The MoPH oversees Thailand's health care activities. It is responsible to implement and execute many health laws, e.g. the laws on

- food and drugs,
- medical equipment,
- health care providers, and
- medical professional registration.

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Much of the execution of these laws is related to registration and licensing activities, which (meanwhile) are being recorded in electronic format and can, thus, be compiled in the form of health, or health related, statistics.

Most of the data bases maintained in public institutions are, however, not directly compatible with each other. Data base incompatibilities exist to some extent within the administration-based data systems but also, and especially, between administrative data, on the one hand, and surveys, on the other.

For example,

- the MoPH's regular *Health Resources Survey* only covers public health care facilities and private hospitals: it excludes ambulatory clinics;
- the MoPH's regular *Mortality and Morbidity Report*, input to Thailand's annual health statistics (also used for international comparison), uses summary information from the health care providers and combines it with information based on the death certificates compiled by the MoI;
- private health care facilities, before starting their activities, have to register with and be licensed by the MoPH - licenses to be annually renewed. Under current practice, the licensing procedure, however, only demands information (data) with respect to the facilities' standards of medical practice and infrastructure; from the MoPH's point of interest those facilities' financial status is irrelevant for their being licensed.

Private health care institutions follow the policies and guidelines as specified by the ICAAT and must get approval from the DCR. Private hospitals are supervised by the Bureau of Business Supervision (under the DCR), and have to prepare and submit annual financial reports. Small clinics are exempted from these obligations.

Stock-listed private hospitals have to submit financial reports to the SET.

Private insurance firms are supervised by the Department of Insurance of the MoC; they submit annual financial reports and undertake actuarial reviews on a regular basis.

For purposes of fixing the annual income tax all private health care institutions regularly send documents to the Revenue Department of the MoF. Income statements require only limited information in the cases of independent health care professionals and small clinics.

The SSO holds individual records of health service utilization of in- and outpatients, including clinical and financial data.

The Workmen's Compensation scheme maintains documentation only in manual format.

CSMBS and UC dispose of computerized inpatient utilization data but only of incomplete outpatient data.

Private health insurance and the Traffic Accident Insurance scheme have detailed clients' data, to which access is restricted.

### **3.6. Data from other sources**

Data documenting health spending (and financing) of private households, private employers, NPISHs, and the RoW can only be generated by way of surveys (chapter 3.2).

## 4. The System of National Accounts

The NESDB is responsible for preparation of macroeconomic information. It collects financial and physical data from all economic sectors, including information on operations with the rest of the world, to compile the SNA.

The following table provides an overview of the standard tables regularly published:

**Table 5. NESDB - program of regularly published tables**

<b>Main Accounts</b>		<b>A</b>	<b>Q</b>
1	Domestic product	X	
2	National income	X	
3	Domestic capital formation	X	
4	Household and private non-profit institutions	X	
5	General government	X	
6	External transactions	X	
<b>Summary tables</b>			
1 / 2	GDP at current market / 1988 prices	X	X
3 / 4	GNP at current market / 1988 prices by activity	X	X
5	GDP at current factor costs	X	
6 / 7	Consumption at current market / 1988 prices	X	X
8 / 9	Gross fixed capital formation at current market / 1988 prices	X	X
10	Distribution of national income at current market prices	X	
11	Savings and gross capital formation	X	
<b>Supporting tables</b>			
12 - 37	GDP by sectors at current market / 1988 prices	X	
38 - 41	Private consumption by type / durability at current market / 1988 prices	X	X
42 / 43	Government consumption at current market / 1988 prices	X	X
44 / 45	Gross fixed capital formation at current market / 1988 prices	X	
46 / 47	Imported gross fixed capital formation at current market / 1988 prices	X	
51	Compensation of employees	X	
52	Household income received from unincorporated enterprises	X	
53	Household property income	X	
54	Savings of corporations	X	
55	Household income received from corporations	X	
56	General government current revenue	X	
57	Interest on consumer debt	X	
58	Disposable income of private households	X	

A: Annual; Q: quarterly, the quarterly publications include seasonally adjusted data.

Also, the NESDB calculates and publishes estimates of Thailand's national capital stock at replacement cost and at 1988 prices.

Conceptually, national accounting in Thailand is still based on the 1953 SNA, which is outdated since the 1968 revision. In order to compensate to some extent for this deficiency, the NESDB have adapted and added elements such as an input-output-table according to the SNA 1968.

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Thus, current state of national accounting can in practice be regarded a mixture of 1953 and 1968 SNA-elements. There are six standard accounts, eleven summary tables and forty-seven supplementary tables, some few of them being of an analytical nature (percentages; ratios).

GDP is presented in the SNA 1953 format. On the expenditure side, a number of items have been adapted to conform better to the 1968 version, e.g. with respect to military hospitals, residential buildings for military personnel and military airports. Also, some of the economic transactions have been included in the national income accounts according to the recommendations of the SNA 1968.

In its calculations of national income according to the 1953 SNA the NESDB uses three approaches, i.e. production, income and expenditure side approaches, in order to be able to mutually cross-check results.

Since 1997 the NESDB has been planning the implementation of the 1993 SNA. Progress was quickly made with respect to government accounts and financial sector accounts:

The government sector account was the first readily developed in 1999. Conditions for data compilation have meanwhile significantly improved after the implementation of the GFMIS (see above, chapter 3.3). In addition, finalization and distribution of the GFSM, version 2001, by the FPO (MoF) has had synergistic effects on the realization of the 1993 SNA.

The financial sector account was compiled in 2000. In this sector, commercial banks forming the dominant part while accounting for more than 80 per cent of the total, the full sequence of accounts was constructed first (except balance sheet). Simultaneously, indirect output of the financial intermediators was developed.<sup>6</sup> Advantage was taken from the construction of supply-and-use-tables, which allow investigation of the causes of differences of estimates between total demand, total supply and their respective components.

With respect to the other SNA-1993 tables a number of obstacles remain (see also below):

Household accounts and accounts for non-profit institutions serving households are being planned, and will be gradually developed. One main problem preventing easy compilation is the fact that directly applicable household data are missing and, thus, the NESDB has to perform transformations of the information contained in NSO surveys in order to make it compatible with the 1993 SNA.

A problem of similar nature is the lack of companies' adequately categorized profit and loss statements and balance sheets: the MoC, which indeed compiles this information, uses a classification system that does not comply with ISIC, which is one core basis of the 1993 SNA. Again, the NESDB needs to transform data.

<sup>6</sup> Output of financial intermediaries in banking, insurance services and pension fund services cannot be directly measured, since these institutions do not normally charge their customers for their services except for some services. Their output has to be measured indirectly. The 1993 SNA recommends using an indirect measure of the value of the services for which the intermediaries do not charge explicitly. This imputation is called "financial intermediation services indirectly measured (FISIM)". The total value of FISIM is measured as the total property income receivable by financial intermediaries minus their total interest payable, excluding the value of any property income receivable from the investment of their own funds (SNA para 6.125). This total implicit output of financial intermediaries has to be allocated among users in other economic sectors.

## 5. The National Health Accounts

The first attempt to compile NHAs was made in 1997 by a joint effort of HSRI, CPH-CU, NESDB, MoPH, NSO and IPS-CU. The research objectives were: the NHA methodology, a manual, comparison of the results with those of the NESDB (under the Thai SNA) and with those of other countries.

The task to be carried out included identification of the health financing sources and institutions, of the flows of funds, of data collection techniques, adequate breakdown of health expenditure data and others. A detailed description of methods used to overcome encountered problems, including a discussion of existing problems, can be found in Sakunphanit 2006.

At the beginning of the works on Thai NHAs the following two generic table structures were developed:

**Table 6. Allocation of resources to financing agencies**

Financing agencies	Ultimate source of financing					Total
	MoF	State enterprises	Employers	Households	Donors	
1	MoH					
2	Other ministries					
3	CSMBS					
4	Municipalities					
5	State enterprises					
6	SSO					
7	WCS					
8	Private insurance					
9	Employer benefits					
10	Traffic accidents insurance					
11	Private households					
12	Non-profit organizations					
TOTAL						

Source: Viroj 1999.

This table had a strong institutional bias: the ultimate sources of financing were defined along the lines of, but not identical with, SNA sectoral classification of economies, which comprises government sector, enterprises, private households and the rest of the world. This table answers the question: Which are the ultimate sources (head line of table) that provide the financial resources to the existing financing agencies (front column)?

The second generic table, at the time of development of Thailand's NHAs, was a logical consequence of the first:

**Table 7. Spending of allocated resources**

Type of expenditure	Administration	Public institution	Private institutions	Public health programmes	Capital formation	Total available resources	Balance
Financing agencies	Public sources	MoH					
		Other ministries					
		CSMBS					
		Municipalities					
		State enterpr.					
		SSO					
		WCS					
	Private sources	Private insurance					
		Employer benefits					
		Traffic insurance					
		Private households					
		Non-profit org					
		Total					

Source: Thangcharoensatien, Viroj (1999).

This table contains information on the amount of allocated resources actually spent by the different financing agencies. In other words, this table allows for a comparison between resources available and resources spent, i.e. the calculation of a financial balance.

Meanwhile, the classification of the expenditure side has been significantly improved as follows (excludes capital formation):

**Table 8. Current health expenditure by function, provider and source of funding**

Expenditure category	ICHA-HC (health care function)	ICHA-HP (provider industry)
Inpatient care		
Curative and rehabilitative care		
General hospitals		
Public		
Private		
Specialty hospitals (public)		
Nursing and residential care facilities (private)		
All other providers		
Long-term nursing care		
General hospitals		
Specialty hospitals		
Nursing and residential care facilities (private)		
All other providers		
Outpatient curative and rehabilitative care		
Hospitals		
Public		
Private		
Specialty hospitals (public)		
Offices of physicians		
Offices of dentists		
Offices of other practitioners		
Outpatient care centres		
All other providers		
Home health care		
Services ancillary to health care		
Medical goods dispensed to outpatients		
Pharmaceuticals, etc.		
Prescribed medicine		
Over-the-counter medicines		
Other medical non-durables		
Therapeutical applications, etc		
Glasses and other vision products		
Orthopedic appliances; other prosthetics		
All other misc. durable medical goods		
Prevention and public health services		
Health administration and insurance		
TOTAL		
Source: IHPP (communication 2006).		

At various levels of accuracy and detail, the above expenditure categories can be shown for all institutions (financing agencies). The group of agencies will have to be expanded by the UC, which has not yet been included in the published Thai NHAs.

Main problems that remain to be solved are as follows:

The methodological and statistical basis for information on the private household sector's health consumption has to be improved. Such improvements must address issues like:

- 
- The sampling errors in the household surveys (see above);
  - the technical accuracy of the accounts;
  - like GDP (with NESDB) the NHAs have to be institutionalized (at this time they are still a research project), this includes improving and standardizing the exchange of information between the institution (to be defined) and the financing agencies;
  - regular, comprehensive and timely publication of NHAs has to be implemented, publication has to be synchronized with annual GDP, this includes NHAs' regular publication in the form of time series by financing agencies;
  - expenditure should be further disaggregated, e.g. by groups of beneficiaries, including by age-groups;
  - contents of the revenue (financing) side of the NHAs has to be improved, e.g. with respect to legal types of revenue (taxation, contributions, subsidies, capital income, etc).

## 6. Differences between the SNA (health) and the NHAs

The following table provides a rough overview of the differences between Thailand's SNA application and the NHAs.

**Table 9. SNA and NHA in comparison**

Criteria	SNA	NHAs
Comprehensive	Yes, covers full economy	Yes, covers all health
Time consistent	Yes, calendar year, accrual basis	No
Timely	Regular publication on routine basis	Irregular publications
Synchronized	No synchronization of work routines, publication, etc	
Compatible	Yes, however outdated SNA version; move to SNA 1993 pending	Yes, however, heavy reliance on allocation techniques
Precise	Yes, established routines	No, no established routines
Internationally comparable	Yes, however only at level of aggregates; health system information is limited	Yes
Policy sensitive	Yes, adequate indicator for growth policy formulation; inadequate with respect to income and wealth distribution	Yes, when improved adequate for strong decisions in health policy
Institutionalized	Yes, executing agency: NESDB	No, executing agency not yet decided
Sufficient data	No	

Source: Sakunphanit 2006.

It should be noted that apart from the above formal differences health care expenditure as incorporated in the SNA and in the NHAs is different for a deeper reason: The “satellite account style” of the NHA uses conceptually a boundary for functional health care that is systemically different from the “ISIC oriented style” of the central SNA framework. Further, the issue attracts complications by way of the different compilation methods used. The current SNA uses the commodity flow approach whereas the NHAs approach may be better characterized as an integrated account approach. It should, finally, be mentioned that the quality and accuracy of both systems suffers from the notorious lack of data.

It is important to note that in the SNA is still missing a comprehensive sequence of complete government accounts by government (public) institutions, i.e. by general government, federal government, provinces, municipalities, and social security – comprising SSO, NHSO, WCF and others, each of these accounts comprising total revenue and total expenditure by types and / or functions.

With respect to the envisaged Financial Coordination Framework, the establishment of such a table sequence is of high importance as it, despite of its obvious limitations, provides thorough institutional information on the financing of health within the overall governments institutional set-up. In the concrete of Thailand the generic set of tables could take shape as shown below (table 10). The idea would be to set up this new table structure identically for the following institutions, from “bottom to top”, of Thailand's public sector:

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## Unemployment fund

- + Welfare fund for teachers
- + Workmen compensation fund
- + Social security fund (SSO)
- + Health card revolving funds
- + UC funds (NHSO)
- = Social Security (consolidated for transfers between institutions)

## Municipalities

- + Central government
- = State (consolidated for transfers between state levels)

## Social Security (consolidated for transfers between institutions)

- + State (consolidated for transfers between state levels)
- = General government (consolidated for transfers between state and social security)

**Table 10. Government accounts - blueprint**

<b>General government</b>	<b>T</b>	<b>T+1</b>	<b>T+2</b>	<b>T+...</b>
<b>Revenue</b>				
Entrepreneurial and property income				
Indirect taxes				
Direct taxes				
From corporations				
From private households				
Social security contributions				
Employer contributions				
Actual contributions				
Imputed contributions				
Employee contributions				
Other contributions				
Current received transfers				
From corporations				
From households				
From the rest of the world				
Received subsidies				
Depreciations on public capital stock				
<b>Expenditure</b>				
Government consumption				
Health				
Other consumptive expenses				
Wages and salaries of employees				
Employer social security contrib.				
Actual contributions				
Imputed contributions				
Other labour costs				
Further consumptive expenses				
Social benefits				
Social security benefits				
Health				
Pensions				
Other social security benefits				
Other benefits				
Health				
Pensions				
Other social benefits				
Paid subsidies				
Current paid transfers				
To corporations				
To households				
To the rest of the world				
Public fixed capital formation (gross)				
Balance (Revenue minus Expenditure)				

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According to the background information provided, it seems that the NSO should be able to provide something quite close to the above table structure, possibly after some modification.

This issue will be addressed in more detail in a separate report (see Reports 3, 9 and 12), in a discussion of the structure of an Integrated Financial Management System

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## 7. Selected problems of Thai health statistics

### 7.1. Treatment of the health sector in the SNA

While dividing health goods and services into (only) two groups, drugs and non-drugs (other medical services), the NESDB uses the commodity flow technique to calculate private consumption of health services as follows:

- (1) The estimate of consumption of domestically produced drugs is based on total domestic production less exports. The FDA is responsible for data compilation on the value of imported and domestic production at wholesale prices. Drug consumption by end users at retail prices is computed by assuming mark-ups of the wholesale price at private pharmacies (between plus 184% and plus 320%). On the basis of the findings of a small-scale survey, indicating that 5.5% of drugs are being damaged during transportation, this amount is being subtracted from the above in order to make the final estimate of the consumption of domestic drugs.
- (2) The estimate of consumption of imported drugs is based on data from the Customs Department as follows. Total costs of imported drugs, including freight and import duties, are marked-up according to the standard profit margins set by the MoC.
- (3) In order to calculate private households' total effective expenditure on drug consumption, an estimate of the consumption of drugs that are available free of charge to low-income households (subsidized by the government) is being deducted.
- (4) Thus: estimate of private households drug consumption = (1)+(2)-(3)
- (5) Estimate of private households consumption of goods and services provided by private pharmacies and private clinics and hospitals = [(1) + (2)] \* 0.21;<sup>7</sup>
- (6) Estimate of government's drug consumption = (1) + (2) - (5);
- (7) Estimate of government's non-drug consumption = (6) \* 3/7;<sup>8</sup>
- (8) Estimate of private households non-drug health (services) consumption;
- (9) Government consumption expenditure other than drug and medical services (e.g. public health programs) was estimated on the basis of MoF budgetary reports
- (10) Total expenditure in health goods and service = (4) + (6) + (7) + (8) + (9)

The estimate of households' expenditure on non-drug medical services in the private sector (item (8)) is based on a small sample of private hospitals and clinics concerning revenue generated from non-drug services, dating back to 1979/1980. The 1980 basis has since been adjusted by the medical care consumer price index (CPI).

<sup>7</sup> This 21 per cent comes from an estimation of WHO statistics.

<sup>8</sup> "3/7" = parameter based on exogenous information.

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## 7.2. Demography

The MoI maintains Thailand's population registration system. The system is centralized and entries are made online. Every newborn child is registered by way of a PIN which, technically, is generated with the issuance of the birth certificate. An analogous method is used in case of death (death certificates).

The registration data base, together with the results of the continuously revolving survey on population change (see above), is being used for interim updates (estimates) of the population, i.e. for those years where census data, collected on decennial basis, are not available. The basic mechanism for the updates between two censuses is described by the fundamental population equation:

$$P_t = P_{t-1} + N_t - D_t + Im_t - Em_t$$

where

$P_t$  := Population at the end of year t

$N_t$  := Newborn children in year t

$D_t$  := Deaths in year t

$Im_t$  := Immigrants in year t

$Em_t$  := Emigrants in year t

The information (estimates) on the total population and its changes (i.e. births / deaths) is being transferred to the MoPH for the preparation of its vital statistics.

The NESDB, together with academic institutes, uses the information from those sources for population projections.

## 7.3. Institutional problems

### 7.3.1. NESDB

The NESDB lacks personnel in comparison to the scope of its tasks. Complications were recently added when the government prioritized the compilation of quarterly GDP results and the estimation of GPPs. As the National Accounts Division had to allocate priorities to these tasks the SNA revision became secondary priority.

The NESDB is challenged by the statistical methods and the related statistical practice required for the adequate application of the SNA 1993. Methods and practice substantially differ from those connected to the 1953 version as the 1993 version is a *comprehensive* and consistent accounting framework dwarfing the 1953 version. Establishing it and making it work continuously, the 1993 SNA needs administrative adjustment, including the time and resources for theoretical and practical training – to varying degrees – of staff and those institutions/sources reporting the basic raw data. Budgetary resources required to implement such an adequate infrastructure seem to be limited.

Data restrictions, however, seem to be the most important obstacle hindering the NESDB from moving towards the SNA 1993. Required raw data input is much higher than under SNA 1953. Especially, data are missing for the distribution of income accounts, which – also – has significant impacts on the quality of representing health adequately within the

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accounts. With respect to the (limited set of) data available, data collection and data analysis is scattered among different institutions. Often, data with respect to (seemingly) identical transactions, but from different sources, substantially diverge, as institutions tend to use own definitions of subject matters in non-coordinated ways.

Such inconsistencies, and others, require data transformation in order to make information compatible with the SNA 1993. In principle this does not pose severe problems to statistical offices – around the world such operations are national accountants’ “daily bread and butter” – however it requires stable statistical reporting and compilation structures and sufficient number of trained staff.

Limited capacities make it also difficult for the NESDB to assume a lead role in improving and standardizing, in terms of operations, the NHAs. Actually, an ideal solution could be (would have been) to maintain the NHAs over *an extended period under the roof of a research project, with substantial regular and timely inputs from the national accountants of the NESDB – and to transfer the tasks under the NHAs fully to the NESDB once routines are fully checked, counterchecked and established.* A period of two to three years should be sufficient for such a solution.

### **7.3.2. NSO**

It was intimated in the introduction that systemic improvements in statistics in Thailand might only be achievable through a substantial amendment of the Statistics Act, B.E. 2508 (1965). It is not known, at the present stage of the project, to what extent amendments of the law have taken place in the meantime. Anyway, the main reason for this consideration is that the Act explicitly allows for many public statistical agencies, with respect to which the NSO, mainly, plays a supervisory and advisory role.

Core competencies of the NSO with respect to “own” execution of statistical programs are concentrated in the field of censi and surveys. These are important statistical tools and their execution adequately attributed to the NSO.

However, in the context of this report those fields of statistics are of greater interest that are not executed by the NSO. Among these are, most prominently, the SNA, the price statistics, compilation of exports and imports, statistics on the education system, social (security) statistics, health statistics, international statistics, and other statistics.

While the NSO is not executing the above it is involved in forecasting. It may have been reasonable at the time of the formulation of the statistics law (2508, 1965) to endow the NSO with such tasks. However, meanwhile, there seems to be good reason for reconsideration. Not only are there systematic objections of scientific and political nature speaking against a practice that allows the producers of statistics simultaneously to be their users (as it is in case of forecasts). But also, forecasting techniques are no longer a field of extreme professional specialization as it was the case 40 or 50 years ago – at least is it not to the same extent. In other words: many Thai institutions meanwhile have their own expertise and hard- and software equipment that allows them to perform forecasts “under own responsibility”.

“Freeing” the NSO from this task, and directing freed resources onto other statistical work could help to improve, even though only to small extents, Thailand’s statistical situation.

The above has also to be seen under the aspect that the staffing of the NSO, compared to the country’s population and socio-economic development dynamics, is “meagre”: the NSO seems to be understaffed. The central administration of the NSO, located in Bangkok, is complemented by regional statistical offices in the 75 provinces of the country. However, total staff, including temporary employees, comprises (only) around 2,500

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persons. Furthermore, this number seems to be varying substantially with respect to temporary employees, probably according to work load: On 31st March 2004, the NSO employed a total staff of 3,150 persons whereas at 5th August 2005 total number of staff was only 2,467 persons. (NSO Without Date; (p.3), and NSO 2005; p 9) Staff is allocated at a ratio of round about 60 : 40 to the regional and central offices, respectively.

Such high fluctuations of personnel indicate instability in institutional knowledge. Stability of institutional knowledge is, however, one of the prime assets of statistical offices. Maintaining and augmenting institutional knowledge is one of a statistical office's prime obligations.

Supervision of and advice on statistics, the legal obligations of the NSO, can only be effective if the NSO has own hands-on experience in all relevant areas of statistics.

At a central level the NSO is divided into eight centres / bureaux / divisions which undertake the office's operational work according to revolving statistical plans and master plans. Among those, it is the Economics and Social Statistics Bureau, divided into six Statistics Groups, which is responsible for conducting censuses and surveys on economic and social issues, including the HWS (NSO 2005).

### **7.3.3. MoPH**

The MoPH's regular Mortality and Morbidity Report is core input to Thailand's annual health statistics, and also used for international comparisons. It uses summary information from the health care providers and combines it with information based on the death certificates compiled by the MoI.

### **7.3.4. Private and public health care facilities**

Both private and public health care facilities have well established processes and documentation with respect to client registration, service provision and billing (revenue collection). Nevertheless, it will remain difficult to make use of this information in the context of the envisaged Integrated Financial Monitoring System. Reasons:

The administrations of private health care facilities are mainly focusing on financial success. Therefore, private hospital accountants usually have higher degrees in accounting, i.e. good education and experience, and the use of accounting software is standard. At the same time, private clinics (their administration / accountants) may have a tendency to pay less attention to clinical data (e.g. diagnosis, operation, etc.). These data are usually only maintained in patients' medical records (files), not systematically in computerized systems, and not for statistical (analytical) purposes.

By contrast, public health care facilities, usually not under the same pressure of short-term financial success, tend to pay more attention on clinical data, for example in order to serve ministerial information needs during the annual budgeting process. Most public hospitals dispose of trained personal able to compile required statistics. Other than in private hospitals, most accountants in public hospitals have only lower degrees of certification (if at all), higher degree certified (and accordingly experienced) accountants are only available to large hospitals.<sup>9</sup>

<sup>9</sup> The deficiencies of this situation became obvious during the period of change from cash accounting to accrual basis accounting in 2004: it was found that staff at hospitals and provincial health offices lacked understanding in this respect. As a result, the MoPH was transitorily reluctant in the fulfillment of its reporting requirements to the AG and the CG. Meanwhile, training and

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Also coverage of health care providers with respect to data collection is still problematic. For example, clinics / private hospitals are not requested to report on services that are paid directly out of clients' pockets.

Clinical and financial data of public and private health care facilities are stored under their own respective format. There is no national standard classification / format applied, except for the ICD of the WHO.

This situation may improve after both, public and private health insurance schemes have started asking for clinical and financial data from health care providers. Private hospitals provide clinical data to some private insurers, including diagnoses according to ICD10, and also send details of clinical data to the SSO, the CSMBS and other public schemes. For public health care providers, the GFMIS is the first step for guaranteeing better financial information.

For its budgetary operations and allocation of monies to providers, the NHSO relies heavily on its so-called "Report #5", a monthly report to MoPH of public hospitals' financial status.

'Report #5' is a routine monthly information report of public hospitals on their utilization of services and on financial developments according to the following table structures (see Tables 11 to 14 below).

education programs for management and accounting staff have been carried out, providing basic knowledge on the compilation of financial statements, thus far however only on basis of a manual system. This means, that most of the more detailed charts in the chart of accounts, as prescribed by the MoPH, are not yet in use.

**Table 11. Utilization of hospital services – monthly report of public hospitals (Report #5)**

Monthly report of hospital utilization

Hospital name.....Service catchment area Code.....District.....Province.....

..... Year.....

Insurance scheme	OP seek Outdoor PCU of hospital				OP seek hospital				Total IP					
	New cases in current year		Visits		New cases in current year		Visits		Discharges in current month		Sum of admission days		Sum of case days	
	Catchment area				Catchment area				Catchment area					
	Within	Outside	Within	Outside	Within	Outside	Within	Outside	Within	Outside	Within	Outside	Within	Outside
UC with 30 baht copay														
UC without copay														
Other scheme														
<b>total</b>														

Insurance scheme	HT/DM		Alternative medicine	Death		ANC (absolute neutrophile count)	PNC		Normal Labour case	Normal live birth case	Dental promotive Visit	Dental treatment Visit
	Cases	Visit		Visit	OPD		IPD	Cases				
	Cases		Visit	Cases		Visit	Cases	Visit	case	case	Visit	Visit
UC within catchment area												
UC outside catchment area												
Other scheme												
<b>total</b>												

Insurance scheme	age 0-5y						age 6-24 y				age >24 y		
	Physical cheakups	Vaccine			Nutrition		Physical cheakups	MMR/Rubella vaccine	Nutrition		Physical cheakups	Nutrition	
		DPT	BCG	MMR	Mal-nutrition	Obesity			Mal-nutrition	Obesity		Mal-nutrition	Obesity
	New cases current year		Visits			New cases current year			Visit	New cases in current year			
UC within catchment area													
UC outside catchment area													
Other scheme													
<b>total</b>													

Insurance scheme	Family planning	Pap Smear	Breast Cancer Screening	Rehabilitation	Consultation		Home visits		School health care		Other (health promotion)	
					Time	Cases	Number of household visits	Cases	Number of school visits	Cases	Number of community visits	Cases
	Visits	Cases		Visits	Time	Cases	Number of household visits	Cases	Number of school visits	Cases	Number of community visits	Cases
UC within catchment area												
UC outside catchment area												
Other scheme												
<b>total</b>												

**Table 12. Current revenue and expenditure of hospitals – monthly report of public hospitals (Report #5)**

Monthly financial position report of hospital

Hospital name..... Month..... Year.....

Item	Month	Year
Operating income		
Income from government for	S	S
Personnel	X	X
Operations	X	X
Capital investment	X	X
Subsidization	X	X
Other expenses	X	X
Special budget	X	X
Income from health service	S	S
UC scheme	X	X
Other sources	X	X
30 Baht co-payment	X	X
Income from health insurance scheme	S	S
UC scheme	X	X
Other	X	X
Cross income	X	X
Other income	X	X
<b>Total operating income</b>	<b>S</b>	<b>S</b>
Non-operating income	X	X
Government revenue (tax) income	X	X
<b>Total Income</b>	<b>S</b>	<b>S</b>
<b>Surplus / deficit</b>	<b>X</b>	<b>X</b>
Extraordinary items	(X)	(X)
<b>Net surplus / deficit</b>	<b>S</b>	<b>S</b>

Monthly financial position report of hospital

Hospital name..... Month..... Year...

Item	Month	Year
Operating expense		
Personal expense	S	S
Salary and wages		
Salary	X	X
Wages	X	X
Temporary wages	X	X
Other salary and wages	X	X
Other personal expense	X	X
Operating expense		
Compensation	X	X
Sundries	X	X
Cost of goods sold		
Drugs	X	X
Medical material	X	X
Supplies		
Equipment	X	X
Other	X	X
Public utility	X	X
Depreciation and amortization		
Depreciation	X	X
Amortization	X	X
Other operating expense		
Bad debt	X	X
Doubtful accounts	X	X
Cross expense	X	X
Reimbursement to other hospitals	X	X
Other expense	X	X
<b>Total operating expense</b>	<b>S</b>	<b>S</b>
Non-operating expense	X	X
Government revenue (tax) expense	X	X
<b>Total expense</b>	<b>S</b>	<b>S</b>

**Table 13. Cash flow of hospitals – monthly report of public hospitals (Report #5)**

Item	Month	Year
Cash inflow from		
Operating activities	X	X
Investment activities	X	X
Financing activities	X	X
<b>Total cash inflow</b>	<b>S</b>	<b>S</b>

Item	Month	Year
Cash outflow from		
Operating activities	X	X
Investment activities	X	X
Financing activities	X	X
<b>Total cash outflow</b>	<b>S</b>	<b>S</b>
cash and cash equivalents increased (decreased)	<b>X</b>	<b>X</b>
cash and cash equivalents as at last month	<b>X</b>	<b>X</b>
cash and cash equivalents as at the end of this month	<b>X</b>	<b>X</b>

**Table 14. Assets and liabilities of hospitals – monthly report of public hospitals (Report #5)**

Item	Month	Year
Assets		
Current assets		
Cash and cash equivalent	X	X
Account receivable	S	S
Account receivable from health service		
UC scheme	X	X
Other scheme	X	X
Other account receivable	X	X
Allowance for doubtful account receivable	X	X
Inventories	S	S
Drugs	X	X
Non-drug material	X	X
Medical inventories	X	X
Other inventories	X	X
Prepaid expense	X	X
Accrued income	X	X
Other current assets	X	X
<b>Total current assets</b>	<b>S</b>	<b>S</b>
Fixed assets	X	X
<b>Total assets</b>	<b>S</b>	<b>S</b>

Item	Month	Year
Liabilities		
Current liabilities		
Forward income	S	S
UC scheme	X	X
Other scheme	X	X
Account payable	S	S
Goods		
Drug	X	X
Non-drug material	X	X
Other materials	X	X
Reimbursement from other hospital	X	X
Other account payable	X	X
Accrued expense	X	X
Other current liabilities	X	X
<b>Total current liabilities</b>	<b>S</b>	<b>S</b>
Non-current liabilities	X	X
<b>Total liabilities</b>	<b>S</b>	<b>S</b>
Owners' equity		
Capital	X	X
Accumulated income as at September	X	X
Net (Loss) income	X	X
<b>Total owners' equity</b>	<b>S</b>	<b>S</b>

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During project progress we will make special proposals on the improvement of the reporting routine under this "Report #5". One of the main deficiencies of the present structure is that it does not allow, on the current expenditure side, for differentiation according to scheme members: expenses occurred because of treatment of members of which of the schemes: NHSO, SSO, CSMBS, other (small) public schemes, private insurance, private payers (out of pocket).

### **7.3.5. Hospital information system**

The government approved projects to invest in a hospital information system. For example, the cabinet has approved MoPH's proposal to develop a computerized financial information system for all hospitals. There is no answer yet, however, with respect to human resource problems and a national standard classification for clinical and financial data.

### **7.3.6. GFMIS**

Reporting on government finance has improved considerably since the implementation of the GFMIS in October 2004. With respect to the reporting quality one exception has to be made, though: municipalities do not yet have the capacity to report at required minimum levels of effectiveness and accuracy. This is one major reason why government sector reporting on the NHA still requires improvement.

As the CG has authorized public agencies to create independently "secondary account codes", reflecting those agencies' specific activities in detail (see above), the financial accounting system of MoPH-(public)-hospitals follows the accounting principles and the chart of accounts as defined by the MoPH; military hospitals follow those of the MoD. Although both ministries use the same primary code they make ample use of the above authorization of defining more detailed charts of accounts, in order to record adequately (separately) their specific health service activities, which could, for example, be medical supplies, drugs supplies, and laboratory supplies. Obviously, as the primary codes (see table 2, above) only distinguish public from private supplies both ministries have to develop their own secondary account codes, enabling hospitals to adequately using the system. Not only do secondary codes, by their construction, differ from the primary codes but, also, the probability is very high that secondary codes differ between ministries.

Such differences, and others, make it very difficult to consolidate secondary accounts on a national basis. The secondary accounts, however, are the "interesting" ones when it comes to the financial monitoring of Thailand's health system.



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## 8. Tentative conclusions

This report tries to take stock of the availability of statistical information on Thailand's health system. Its findings are based on information collected during a three-week mission to Bangkok in March 2006. In addition, we took advantage of the expertise of two professionals from the NHSO who participated in the Master Course on Social Protection Financing (SPF) at the University of Maastricht, Graduate School of Governance, whose Master theses addressed, inter alia, the issues discussed in this report.

Despite the care that was taken to interpret correctly the findings of the mentioned mission, and to incorporate correctly the findings of the relevant paragraphs of the mentioned master theses, a general feeling prevails that a full systematic and comprehensive understanding of the possibilities and deficiencies, the structures and capacities, the "white spots" and the areas promising effective sustainable improvements of Thailand's statistical system, even if confined to health statistics, is still lacking.

A number of questions have deliberately been left open in this report. These questions will find their answers as the project progresses. After the basis laid with this report, future collaboration with statistical counterparts will be much more focused and, thus, more effective than it could have been during the original, afore-mentioned mission.

One core problem to be solved during the project remains: the formulation of a realistic Integrated Financial Monitoring System, realistic in the sense that transition from the present status of Thailand's health statistic's fabric to a new system and structure is realistic and manageable within overseeable time limits. In other words, we will try to aim at a proposed structure, which indeed clearly goes beyond the present statistical "design" of Thailand's health statistics, which is itself a result of historical developments – not of a rational architectural approach, but which realistically takes into account, on the one hand, given administrative procedures, limitations of resources and the like, and, on the other, areas where new developments can be expected with potentially fruitful and effective impact on the future practice of Thailand's health statistics.



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