
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 wholesale price at private pharmacies (between plus 184% and plus 320%). On 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 as set by the MoC.
- (3) In order to calculate private households' total effective expenditure on drugs consumption the estimate of consumption of drugs that are made 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;¹
- (6) Estimate of government's drug consumption = (1) + (2) - (5);
- (7) Estimate of government's non-drug consumption = (6) * 3/7;²
- (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 above deduction is preliminary (inconsistent) and needs revision.]

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).

¹ This 21% come from the estimation of WHO's statistics.

²

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 PID, 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 Censi, is described by the fundamental population equation:

$$P_t = P_{t-1} + N_t - D_t + I_{mt} - E_{mt}$$

where

P_t := Population at the end of year t

N_t := Newborn children in year t

D_t := Deaths in year t

I_{mt} := Immigrants in year t

E_{mt} := 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, and making continuously work, the 1993 SNA needs administrative adjustment, including time and resources for theoretical and practical training, at various extent, 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

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 insinuated in the introduction that systemic improvements in statistics Thailand might only be achievable through a substantial amendment of the Statistics Act, B.E. 2508 (1965). It is not known, at the present state 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, 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 (2008 / 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

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 central level the NSO is divided into eight centres / bureaus / 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 INFIMO. 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 hospitals³.

³ 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 fulfilment of its reporting requirements to the AG and the CG. Meanwhile, training and

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 heavily relies on the so-called report #5.

Report #5 is monthly routine information of public hospitals on utilization of services and on financial developments according to the following table structures: Table nnn and table nnn.

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 nnn. 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														
total														

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		OPD	IPD		Cases	Visit				
	Cases	Visit	Visit	Cases	Visit	Cases	Visit	case	case	Visit	Visit	
UC within catchment area												
UC outside catchment area												
Other scheme												
total												

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													
total													

Insurance scheme	Family planning	Pap Smear	Breast Cancer Screening	Rehabilitation	Consul-tation		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	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												
total												

Table nnn. 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
Total operating income	S	S
Non-operating income	X	X
Government revenue (tax) income	X	X
Total Income	S	S
Surplus / deficit	X	X
Extraordinary items	(X)	(X)
Net surplus / deficit	S	S

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
Total operating expense	S	S
Non-operating expense	X	X
Government revenue (tax) expense	X	X
Total expense	S	S

Table nnn: 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
Total cash inflow	S	S

Item	Month	Year
Cash outflow from		
Operating activities	X	X
Investment activities	X	X
Financing activities	X	X
Total cash outflow	S	S
cash and cash equivalents increed (decreed)	X	X
cash and cash equivalents as at last month	X	X
cash and cash equivalents as at the end of this month	X	X

Table nnn. 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 acheme	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
Total current assets	S	S
Fixed assets	X	X
Total assets	S	S

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
Total current liabilities	S	S
Non-current liabilities	X	X
Total liabilities	S	S
Owners' equity		
Capital	X	X
Accumulated income as at September	X	X
Net (Loss) income	X	X
Total owners' equity	S	S

During project progress we will make special proposals on the improvement of the reporting routine under 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 nnn, 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.