



## Chapter II

### Literature Review

#### 2.1 Some Characteristics of Economic Crisis and Policy Options

Samuelson and Nordhaus in their economic text book counted customary characteristics of a financial crisis recession as follow:

- Sharp decline in consumer purchases, while inventories of durable goods increase unexpectedly, business react by curbing production, real GDP falls and business investment in plant and equipment also falls sharply.
- The demand for labor fall by layoffs and higher unemployment.
- As output falls, inflation slows.
- Business profits fall, common-stock prices usually fall, because the demand for credit falls, interest rates generally fall

Some elements of the classic crisis were present in South-East Asia regional crisis which after benefiting about two decade of continuous high rate of growth accelerated by foreign investment. The first evidences of crisis appeared with rising current account deficit after 1993 ranging from 3.5 percent of GDP in Indonesia to 8 percent in Thailand (Azizul Islam, 1998) by the end of 1996.

The deterioration in the current account balance was caused mainly by sharp slowdown in export growth, for such export oriented countries drop in demand coincided sharp drop in GDP.(Table 2.1)

Callum Henderson (1998) in "Asia Falling?" also pointed out to fall of export growth at the result of it rising current account deficit in South East Asia (SEA) Countries and South Korea, combined with Shrinking budget surplus and over appreciation of Asian currencies in an uncompetitive environment, tried to find some similarities between SEA Economic crisis and its precedent in Mexico both of them affected by merging in global trade-exogenous factors-as well as their internal weaknesses. Both Azizul Islam and Henderson proposed international financial Coordination as well as domestic fiscal and monetary policies to constraint impact of crisis.

Table 2.1 Thailand Key Economic Indicators

Economic variables \ Years	1993	1994	1995	1996	1997	1998 E	1999 E
1. GDP at Constant Price 1988 (% change)	8.5	8.9	8.8	5.5	-0.4	-8.0	1.0
CPI (% change)	5	5.8	5.9	5.8	5.6	8.1	3.5
Export (% change) bil USD	13.4	22.5	24.8	-1.9	3.8	-6.8	-4.8
Import (% change) bil USD	12.4	18.1	31.9	0.6	-13.4	-33.8	-4.4
Trade balance bil USD	-8.5	-8.7	-14.7	-16.1	-4.6	12.2	0.8
Current account balance bil USD	-6.1	-7.8	-13.2	-14.4	-3.1	14.3	n.a
Total outstanding debts bil USD	52.1	64.7	82.6	90.5	93.4	86.2	
Public debt bil USD	14.2	15.7	16.4	16.8	24.3	31.5	
Exchange rate USD	25.32	25.15	24.92	25.34	31.37	41.37	31.5
1.2 GDP at current price (bil baht) (% change)	3,170.3 (12.0)	3,630.8 (14.5)	4,188.7 (15.3)	4,598.3 (9.7)	4,827.2 (5.0)		
1.3 GNP perCapita (baht)	53,593	60,612	69,047	74,585	77,246		

Source : Macroeconomic Section Bank of Thailand February 26, 1999

Note : e = estimated

Somchai Richupan (1998) in "Thailand's policies and measures to cope with the crisis" numerated sharp decline in economic growth, drop in consumer & spending, drop in private investment, sharp decline in exports, large current account deficit, huge private sector external debt, high unemployment, high inflation, violate exchange rate, non-performing loans, Commercial bank losses, liquidity shortage, real sector meltdown and lots of business failure as problems leading to the crisis. He also pointed to policies and measures as using IMF Rescue package tight and disciplinary fiscal stance, financial sector restructuring, maintain gross reserves timing 1998 budget, privatization, relaxation of fiscal policy, increased expenditure on social safety net, accelerate financial sector restructuring process, were determined to improve economic conditions.

In IMF report 1998 combination of a number of factors were considered to be diagnosis of crisis as follow:

The rising of account deficit the magnitude of it differed from 3.5 percent of GDP in Indonesia to 8 percent in Thailand by the end of 1996.

It should be noted that current account deficit on market sentiment does not depend solely all its size. There was some concern that the slowdown in export growth in 1996 reflected a structural problem and was not merely cyclical, and that early recovery might not be feasible. The method of financing the deficit also matters, the greater the importance of private sources in financing and the greater the share of short-term debt in financing, the more unfavourable is the perception of the sustainability of the deficit. Mention should also be made of relevance of utilization of capital inflows which financed the deficit. The sustainability of deficit becomes questionable when foreign resources are used for the purpose of consumption or for investment which yield low returns or investment in non-tradables such as land, buildings and infrastructure which generate returns in local currency, but repayment has to be made in foreign currency, to some extent, these also happened over last few years in the countries which came under attacks. Other factors included

- Dealing with capital inflows
- Fiscal policy
- Monetary policy : sterilization
- The exchange rate policy

- Financial sector weaknesses
- The role of foreign market players

The specific targets and policy conditionalities prescribed by IMF for individual countries were not identical, but the broad thrusts can be summed up in the following

- a. Reduction of current account deficit
- b. Generation of additional tax revenue and curtailment of government expenditure
- c. Increase in foreign exchange reserves
- d. Containment of growth of domestic credit
- e. Institutional reforms included privatization of public enterprises; deregulation of business and industry; further liberalization of policies respect to trade, foreign investment and financial flows; closure of unviable financial institutions; and improved transparency of the financial system.
- f. Some privatization for social protection

Since then, there has been some progress in affected economics. Lessons and policy options in short term included limit outflows and medium-to long-term policies included establishment of an appropriate exchange rate and overcome the weaknesses of the domestic financial sector and international and regional cooperation through trying for an international debt strategy, global governance of financial flows and regional cooperation beyond the periodic meetings among central banks in the region that had been felt more urgently in the wake of recent financial crisis.

It seems some of the factors repeated in Russia and Brazil crisis later and may continue if international cooperation and appropriate national options are not found to cope with it.

## 2.2 Outcomes of Economic Crisis on Health Sector.

Going beyond the causes of economic crisis is not at the scope of this research, but health workers and health economists involvements escalate during such urgent events.

Philip Musgrove (1987) in his article "The economic crisis and its impact on health and health care in Latin America and the Caribbean" showed in Figure 1.1, the reduction of incomes and reduction of imports required as part of a country's external adjustment during the recession, while all effect can be considered to operate through reduction of in current consumption, whether private or public, the diagram for simplicity omitted complicating factors of course shows how the economic crisis can worsen health status, without implying that it must do so. Economic deprivation is virtually certain to increase morbidity and presumably, mortality. Malnutrition is probably the most immediately sensitive condition since it depends on current consumption. Economic deprivation can be expected to increase the severity, if not the prevalence of intestinal and respiratory diseases for this reason with increased child mortality a likely result. The loss of employment and income is also likely to increase a variety of mental disorders, some population groups of course are much more affected than others.

The Second observation on Figure 1.1 is that the out come in health status is not simply a function of what happens to total care spending or now that expenditure changes in the case of increased demand much also depends on whether public institutions become more, or less, efficient when total resources are reduced. This is largely a matter of what happens to the balance among different medical output, which for constant prices is reflected in the composition of expenditure on health. Musgrove presented following identity

$$\frac{\text{Health Spending}}{\text{person}} = \frac{\text{Health Spending}}{\text{Central Govt. Spending}} \times \frac{\text{Central Govt. Spending}}{\text{GDP}} \times \frac{\text{GDP}}{\text{person}}$$

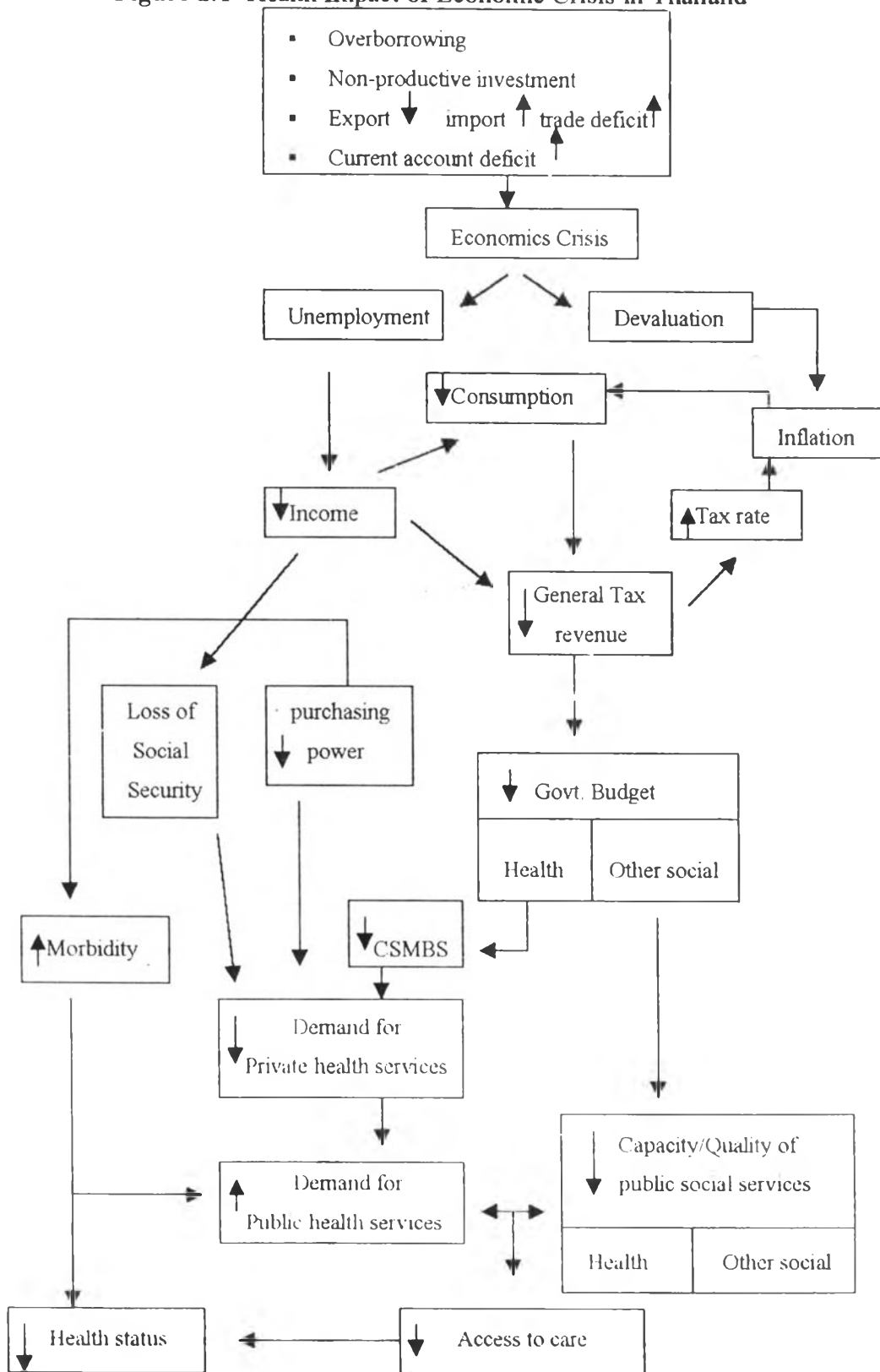
to analyze relation among health spending, total central government expenditure and GDP. Shifts among those variables tell something about the scope of budgetary adjustment and the relative priority of health care compared to the other activities

when budget is reduced, but effects on eventual health status it is the level of real per capita health expenditure that matters.

Samlee (1998) in report of regional consultation under the topic "Health Implications of the Economic Crisis in the South East Asia Region" said that the economic crisis such as the current one, would have many adverse effects. It could particularly make people poorer and poorer, ultimately leading to poverty and ill-health. In addition, devaluation of currencies had several economic and social implications, such as price increase, shortage of commodities, rise in unemployment activation of social unrest and even political turmoil, all of which affected the health of people nutritional status might deteriorate affecting not only physical, but also mental and intellectual growth. Then Suwit (1998) pointed to current account deficit of Thailand and pressures from inside and outside to devalue of Thailand currency, which on 2 July 1997 marked the beginning of the economic crisis, resulting in striking devaluation of Baht from 25 to 57 per USD in December 1997. He continued that crisis had immediate effects on labour employment, house hold expenditure and household consumption, all of them adversely affected health. The problem had been exacerbated by sever and long drought. The number of unemployed grow in Thailand to 2 million.

A massive budget cut was affected. The rapid decline in tax revenue had led to a budget deficit of 1 percent in 1997, which was expected to increase to 3 percent in 1998. The crisis had hit the poorest and vulnerable hard as they spent 10 percent of their income on health as opposed to only 2 percent by the rich. In response to revenue reduction the government had reduced health budget by 10 percent in its initial budget, while 1/3 of private hospitals were supposed to be closed during 2-3 years. MOPH proposed a package of good health at low cost to cope with the crisis, and making fund available for procurement of essential drugs and encouraged using of generic drugs which was approved and implemented immediately. In another paper which presented at Regional consultation on Health Implications of the Economic Crisis in the South-East Asia region, under the title "The Economic Crisis and Responses by Health Sector in Thailand in 1997-1998, conceptual framework of P. Musgrove was adapted for Thailand as shown in (Figure 2.1) they pointed that over borrowing for investment in non-productive

Figure 2.1 Health Impact of Economic Crisis in Thailand



Source : World Health Organization (1998) The Economic Crisis and Responses by Health Sector in Thailand in 1997-1998

activities, over consumption on imported luxury goods and reduced export competitiveness resulted in rapidly increased trade and current account country with highest deficit which rose up to 8% of GDP in 1995 and 1996. The devalue of baht, and the support of financial companies and banks who had high insolvency resulted in rapid depletion of the national foreign reserves and massive public debt, and there was thus high pressure on the Bank of Thailand to devalue the baht and 2 July 1997, the Bank of Thailand announced a policy of managing floating of the baht “which marked the first day of economic crisis in Asia. In December 1997 the baht has gone down more than 50%, from previously 25 to 57 baht per USD.

The devaluation of baht and increased VAT affected the prices of all commodities and services, including health. In January 1998. The imported drugs (finished Products) wholesale price increased by 20-25%. Local produced drugs price increased by 15-18% with increasing price and lowering of household income, the public social services education and health were affected. In response to revenue reduction, initial budget of 982 billion reduced to 800 billion baht, a 18.5% cut (Table 2.2) This reduction has not taken into account the effect of inflation.(Figure 2.2) Investment expense was severed significantly from 39.4% in 1997 to 26.9% in 1998. Frequency of budget allotments increased, but salary and wages were safeguarded from 1998 budget cut. other operating expenditures were sacrificed significantly but much less than capital investment (Figure 2.3) Then in their report they evaluated private and public sectors during the crisis and policies MOPH presented to cope with economic crisis.

### 2.3 Health Care Financing

The interest of economists in issues of health is traced back to 17<sup>th</sup> century to Sir William Petty who tried to encourage government to intervene, whose measure of an individual's value was expressed in terms of that's person's contribution to national production and concluded that government should not leave physicians and patients to their ownshift. As cited in Anne Mills in “International health economics and health policy : past, present and future”, utilitarians in last decades of 19<sup>th</sup> century pointed to health care of human being as an investment of capital, in productive



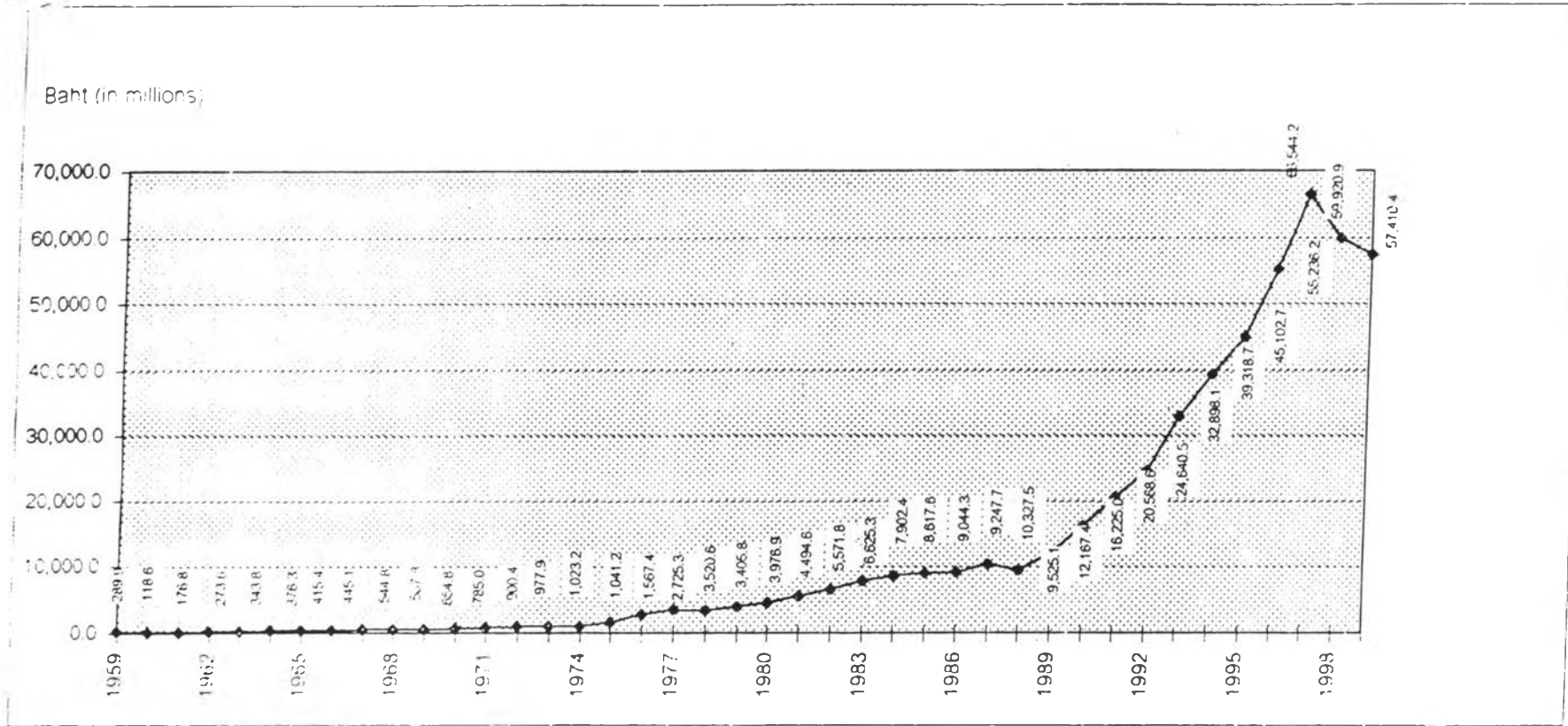
Table 2.2 The FY1998 Budget Revision in Response to Economic Crisis.

Ministry	Budget Bill	% total Budget	After Adjustment	% Total	Adjustment	% Adjust
Central Fund*	82,051,605,400	8.36	-76,589,967,747	9.57	-5,461,637,653	6.6
Prime Minister Office*	7,993,717,000	0.81	6,588,348,300	0.82	-1,405,368,700	17.5
Mo Defense	105,238,348,000	10.72	80,998,594,000	10.13	-24,239,754,000	23.0
Mo Finance*	44,797,897,900	4.56	42,752,981,000	5.34	-2,044,916,900	4.5
Mo Foreign Affair*	4,131,846,000	0.42	3,503,160,300	0.44	-628,685,700	15.2
Mo Agriculture	80,864,696,300	8.23	62,580,531,400	7.82	-18,284,164,900	22.6
Mo Communication	102,108,099,500	10.40	67,786,410,000	8.47	-34,321,689,500	33.0
Mo Commerce*	4,364,583,300	0.44	3,746,802,600	0.47	-617,780,700	14.6
Mo Interior	178,540,267,700	18.18	132,710,229,353	16.59	-45,830,038,347	25.0
Mo Labor & Soc Welf*	11,155,173,000	1.14	9,437,204,500	1.18	-1,717,968,500	15
Mo Justice*	5,962,532,400	0.61	5,269,090,400	0.66	-693,442,000	11.0
Mo Science & Tech	16,595,700,900	1.69	10,945,590,300	1.37	-5,650,110,600	34.0
Mo Education*	166,308,911,800	16.94	148,577,152,500	18.57	-17,731,759,300	10.0
Mo Public Health*	70,145,500,000	7.14	59,920,895,000	7.49	-10,224,605,000	14.5
Mo Industry	5,461,664,200	0.56	4,057,343,000	0.51	-1,404,321,200	25.0
Mo University Affair*	39,337,350,800	4.01	32,900,884,800	4.11	-6,436,466,000	16.0
Other Organizations*	5,035,514,700	0.51	4,686,293,600	0.59	-349,221,100	6.9
State Enterprises*	29,660,591,100	3.02	26,932,521,200	3.37	-2,728,069,900	9
Revolving Fund*	22,246,000,000	2.26	20,016,000,000	2.50	-2,230,000,000	10.0
<b>Total</b>	<b>982,000,000,000</b>	<b>100</b>	<b>800,000,000,000</b>	<b>100</b>	<b>-182,000,000,000</b>	<b>18.5</b>

Source : Budget Bureau Office

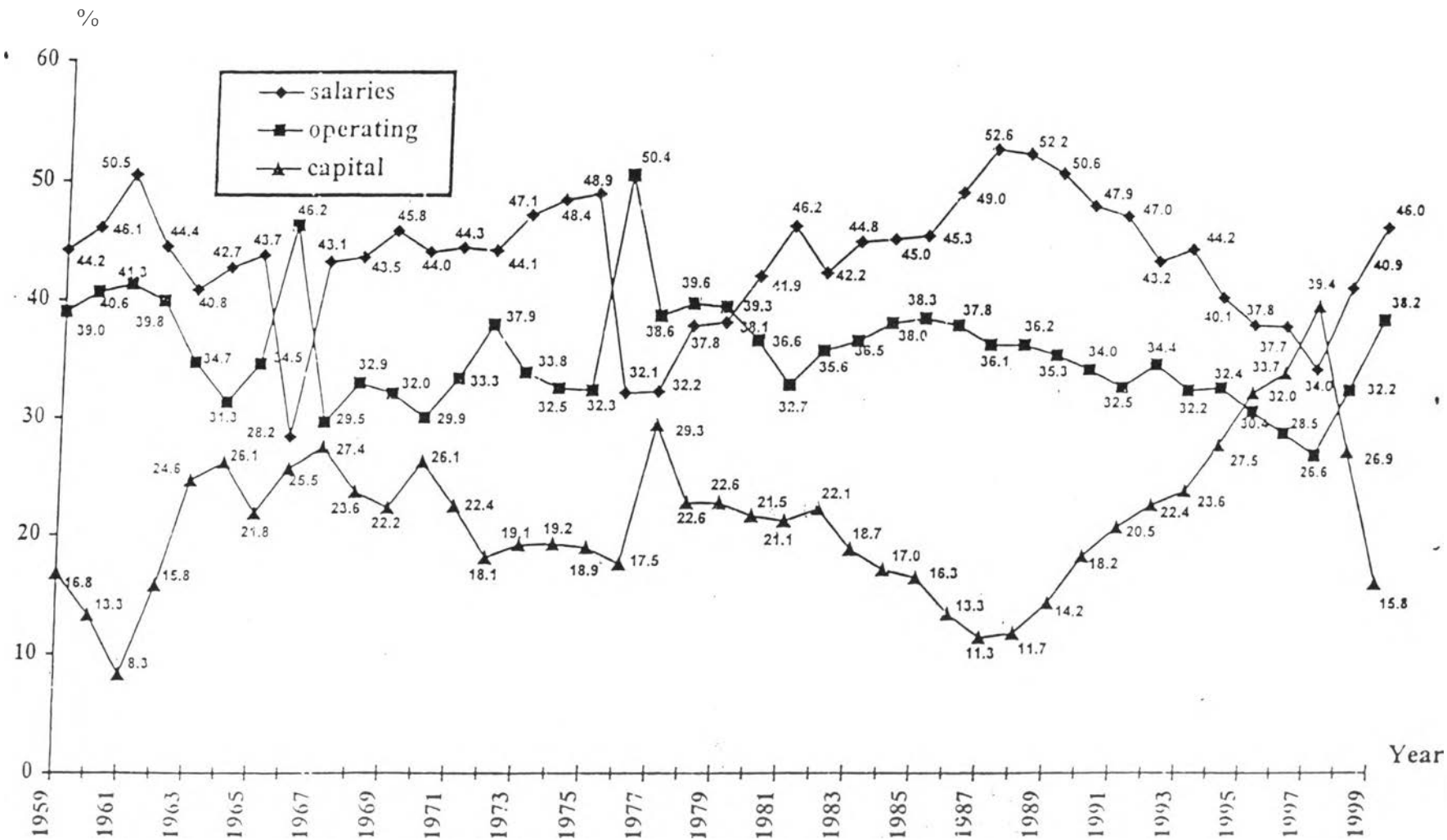
Note : 1996 budget = 843,200 Million baht and 1997 budget = 984,000 Million baht

Figure 3.3 The MoPH Budget, 1959-1999



Source : Bureau of Health Policy and Plan, MoPH

Figure 3.4 MoPH Budget pattern: personnel, operating and capital, (1959-1999)



Source: Bureau of Health Policy and Plan, MoPH

force. Then referring to researches that tried to find rationale health expenditure by relating it to productivity led to development of cost benefit and cost effectiveness techniques she concluded that internal organization of providers different ways of financing ownership and management arrangements affect behavior. Market Structure and government also may set incentives and systems of monitoring and regulation are crucial.

Brian Abel Smith (1986) in "Funding health for all is insurance the answer?" traced back health insurance to the medieval guilds or clubs of craftsmen that existed hundreds years ago based on risk sharing. As attempts of England led to Beveridge system of finance, social democrat movement of Germany forced employers to pay as well as employees and first compulsory social insurance was introduced in 1889 and many other European countries followed it sooner or later. So due to deficit of health market intervention of government through public health sector and community was recognized. Taxed based systems, private insurance, compulsory social insurance and other community schemes coexisted to finance public-private providing of health services. They exist with different mix both in developed and developing countries.

## 2.4 Indicators for Evaluating Performance of Health Systems

2.4.1 In "Methods for evaluating the effects of health financing reforms" of Barbara Macpake (1994) alternative data collection methods to measure the indicators and accuracy with which each indicator is likely to reflect the achievement of each objective is discussed, then analytical approaches which aim to judge the extent to which trends in indicators and differences in indicators emerging from comparison can be attributed to financing reform are discussed clearly, of all indicators relates to all levels and types of change. Although listed by objective, they are not all exclusively of single objective. May over laps between indicators of allocative and technical efficiency, and of equity of utilization are considered. Indicators for :

- \* Allocative efficiency;
- \* Technical efficiency;
- \* Equity in utilization and access to care;
- \* Equity in finance;

- \* Financial sustainability;
- \* Institutional sustainability; and
- \* Administrative costs.

are introduced

Allocative efficiency requires that resources are allocated to the activities such as immunisation programs in which they have the highest value, not to low priority activities which have a small impact on health (such as high technology interventions).

A number of indicators aim to measure the extent of allocation of expenditure by level of care. The assumption underpinning the use of these indicators is that allocative efficiency is improved by the re-allocation of expenditures to lower levels, these indicators could equally be included under the objective "equity of utilization". Definition of different levels of providing services are needed.

Some of the indicators are proposed to measure the allocation of resources to social insurance funds which are difficult to interpret because multiple unintegrated social security funds are usually perceived as inequitable. Assessing whether integration produces anticipated improvements requires evidence from other indicators. However, the introduction of reform of insurance may add to total revenues available to health sector, and an increasing proportion of resources allocated to insured does not preclude an increasing total resources allocation to uninsured. It is assumed that unification of social security funds is equivalent to efficiency improvement (technical as well as allocative) without assessing the effect of this on total resources availability and targeting of public sector expenditure.

Technical efficiency requires that once the activity or output mix has been determined (for example the mix of curative and preventive services to be offered), the activities are carried out without wastage of input and at minimum possible cost usually, the most important cost components for health service delivery are salaries and drugs. Therefore indicators of appropriate drug use are important indicators of technical efficiency.

Although salary costs are important it is not clear that higher or lower levels represent greater efficiency. Indicators based on salary are therefore not

recommended. Comparison of unit cost is more meaningful higher unit costs may be explained by underutilized staff, equipment or facilities which might not be noticed by the other indicators.

- \* Equity in utilization of access to care of disadvantage groups.

Utilization indicators have been used most to assess equity of utilization and access to care as utilization by facility, utilization of services by specific population groups and urban/rural differentials in utilization, free insurance coverage, exemptions would be expected to reflect the distribution of poverty to income. Price comparison of public and other sectors enable the concept of relative affordability to be evaluated.

- \* Equity in finance

Equity in finance requires that subsidies should flow from the rich to the poor distribution of taxation burden, breakdown of sources of finance for insurance programs by government, employer, employee and patient (Co-payments) breakdown of sources of finance for health sector overall and its sectors distribution, geographical distribution of insurance agencies expenditure and distribution of utilization of different sectors by socio-economic groups, are some of the indicators of equity in finance.

- \* Financial sustainability

Financial sustainability is narrowly defined as the extent to which national or local budgets are funded from national sources, or more flexibly as medium to long term stability of a mix of funding sources. Cost recovery ratios, relative growth rates of health sector expenditure, health sector price index, GNP and specific incomes of main paying groups (government, insurance agencies and direct payers), percent of gap between revenue and expenditures of different sources are proposed as indicators of financial sustainability

- \* Institutional sustainability

Institutional sustainability requires that the capacity of institutions is sufficient to manage the process of change and administer new systems. Adequacy of organizational and administrative structures and adequacy of human resource formation are proposed. Assessment of adequacy involves comparison of roles expected of an organization or individual.

\* Administrative Costs

The indicators suggested express these as proportions of the revenues raised or expenditures made by the financing institution. Beyond use of descriptive indicators. Cross-sectional and longitudinal are suggested to associate changes in indicators with changes in policy.

2.4.2 Lucy Gilson (1978) in "Government health charges : is equity being abandoned?" challenged the argument of world Bank about user's fee and said: the debate focuses on efficiency as its contract concern, with equity (narrowly defined as equal access for equal need) taking a second place.

The opposing perspective places equity as the fundamental goal of government policy making and prefers a more comprehensive view of equity (e.g. equal utilization of health care for equal need) while tax resources are not sufficient, financial incentives (fees) for health users and personnel are said to generate more efficient supply and use of services. While utilization is responsive to pricing policies the equity impact of such fees must also be considered. Providers may supply costly, especially if their performance is judged to any extent by cost recovery indicators. Equity may be further undermined. The willingness to pay for health care that is said to exist does not necessarily represent ability to pay for all socio-economic groups. Charging fees for government services may exacerbate current inequality by deterring lower income groups from using the available care.

2.4.3 A Study Group on the Evaluation of Recent Changes in Financing of Health Services in 1991, was convent to review, compare and analyze. The principal change in health financing, review the effects of such changes on the provision and utilization of health services and draw conclusions about contribution of different methods of financing on improving the performance of health systems in last decade. They proposed following criteria for assessing changes in financing.

Criteria	Elements
1. Level of funding	A moment Reliability Effect on other mechanisms
2. Efficiency	Technical Allocative Administrative Quality
3. Equity	Distribution of benefits Distribution of burdens
4. Viability	Consumer acceptability Acceptability of professional organizations Political acceptability
5. Health impact	Change in health status.

Members of the Study Group felt that the impact on the level and reliability of funding brought about by changes in financing was an essential element in any evaluation. Efficiency involves a number of elements of which technical and allocative efficiency are the most commonly cited. Technical efficiency relates to whether the service is provided at the lowest possible Cost-Allocative' efficiency is concerned more with the outcome of the health care process. Administrative efficiency relates to the resources used in the management of the system. For example, moving from a large number of small insurance agencies to one large agency may improve administrative efficiency by promoting economics of scale. Quality of care often is considered to be one dimension of efficiency by economists. However, non-economists view it as an independent criterion. The study Group as for the criteria used for assessment the impact of source of finance on health status and concluded that striking changes have taken place in role of various agents in the health care system. Sometimes these changes stem directly from changes in health care financing. The higher profile given to purchasers is a direct result of financing reforms aimed at splitting provider and purchaser roles. Where the individual



consumer may fail to make rational informed decisions about seeking health care. The institutional purchaser may be more effective many of the reforms in health care financing have attempted to increase the autonomy of providers, the aim being to create greater accountability and encourage providers to respond more to incentives arising from consumer choice and managed markets. As in other sectors of economy, there has been liberalization, increased use of non-government sources of fund and greater emphasis upon market mechanisms and incentives to help to structure health sector operations. Although trends are evident, the precise form of changes in health care financing has varied according to structure of the existing health system and the political viability of change in this system in different countries. Many of changes in health care financing reviewed emphasized the role of the market and non-governmental agencies in the health sector. However it is important not to lose sight of essential role of government.

2.4.4 The World Bank's World Development report 1993 : Investing in health offered a normative response to the question using the concept of minimal package of care and services. This approach provide one set of objectives criteria for rationing health care services. World Development Report 1993 was the first comprehensive effort to systematically develop expenditure information for all developing countries. And World Bank in discussion paper No. 365 under "Innovation in Health Care Financing<sup>11</sup>" presents some way to evaluate the performance of the policy makers countries health system against those of other countries or regions of comparable income levels. One approach is to divide the performance of health financing mechanisms into three broad categories. The first category is concerned with how efficiently and equitably resources are used to provide health services. The third category relates to the effects health expenditures have on health outcomes. Efforts to update that information for developing countries occurred sporadically during 1970s and 1980s. The first sustained and replicable effort to develop such an information base for the twenty-four member countries of the organization for Economic Cooperation and Development (OECD) began in 1977, and the information is now updated each year. The experience of the OECD countries led to the development of system of national health accounts, which only began to be used in developing countries in the recent two or three years.

2.4.5 World Bank in its “1998 world development indicator” report discussed : Access indicators measures the supply of health services but reveal little about benefits or rate of use. In many developing countries services by non governmental organizations for the poor and for many rural residents, widening the gap between production and consumption of many essential services and if so how they differ in quantity and quality from public services. In addition, health care facilities tend to be concentrated in urban areas. Peoples health is also influenced by the environment in which they live. A lack of clean water and basic sanitation is the main reason diseases transmitted by feces are so common in developing countries drinking water contamination by feces deposited near homes and an inadequate supply of water cause diseases that count for 10 percent of total diseases burden in developing countries.

Indicators of access partially show the efficiency of the health care system and included

- P/C of population with access to safe water which is the share of population with reasonable access to an adequate amount of safe water.
- P/C of population with access to sanitation which is the share of the population with at least excreta disposal facilities that can effectively prevent human, animal, and insect contact with excreta.

Governments in developing countries usually finance immunization against measles and DPT as part of the basic health package.

According to World Bank’s Development Report 1993 : Investing in Health. These diseases account for about 10 percent of the disease burden among children under 5.

Child Immunization is the rate of vaccination coverage of children under one year of age for 4 diseases-measles and DPT. P/C of population with access to health care is the share of population that can expect treatment of common diseases and injuries including essential drugs in national list, within one hour’s walk or travel.

2.4.6 Cam Donald Son and Karen Gerard in “Economics of Health Care Financing : The Visible Hand<sup>13</sup>” Concluded that in setting the economic objectives of health systems, both efficiency and equity notions must be taken into account. Efficiency is easy and undisputed . It is sought at two levels; allocative efficiency

determines the “worthwillness” of programmes and operational efficiency the best ways of producing worth while programmes.

Equity is a less straight forward notion, but we have argued in this chapter that there are two important dimensions : financial equity and equity of opportunity to use health care resources. Financial equity is assessed by the burden of financial contributions extracted from different socio-economic groups. It is deemed fair that payment is based on ability to pay.

The opportunity to use resources is a more difficult notion to measure and monitor, because ‘access’ is a relative term. In the ideal, therefore, equal access for equal need is the most desirable horizontal equity objective, but in the light of practical difficulties we recognize that proxy measures are sometimes inevitable, particularly equal utilization for equal need.

2.4.7 James C. Knowles and Charlotte Leighton (1997) in *Measuring Results of Health Sector Reform for System Performance : A Handbook of Indicators*  
“Suggest :

- \* Access
- \* Equity
- \* Quality
- \* Efficiency and,
- \* Sustainability

As indicators of health system performance

- \* Indicators of access
- \* Definition of access

The concept of “access” usually refers to the presence or absence of physical or economic barriers that people might face in using health services

- \* Physical access indicators
- \* Percent of (rural, poor) population residing within X kilometers of a health facility
- \* Percent of (rural, poor) population residing within X kilometers of a health facility staffed by a doctor

- \* Percent of (rural, poor) population residing within the X kilometers of a pharmacy.

Where physical access is not a problem for urban populations, the indicators should be applied to the rural population only. Distance measures are most often available in government health statistics. There are similar indicators of access to hospital services.

- \* Population per doctor
- \* Population per nurse
- \* Population per hospital bed

Are readily available input indicators called “service ratios” which are sometimes used as measures of access. Because health personnel and hospitals are often located pre dominantly in urban areas, these indicators may not be valid measures of access for the rural population

- \* Indicators of economic access
- \* Average total private cost of professionally treated outpatient illness episode as a percent of month by per capita household income for consumers in the lowest per capita income quintile
- \* Average total private cost of medicines for typical outpatient illness episode as a percent of monthly per capita house hold income for consumer in the lowers & per capita quintile
- \* Average total private cost of an average hospital stay as a percent of annual per capita household income for consumers in lowest per capita income quintile.

Similar indicators can be defined for preventive care.

These indicators focus on estimates of total expenditure for patients in the lowest expenditure quintile, since in many countries fees charged vary with income and because it is at lowest income level that economic access is considered to be the biggest barrier to seeking and obtaining health care.

- \* Average fee charged per outpatient per outpatient visit by nearest government ambulatory health facility

- \* Average cost per day of hospitalization at nearest government hospital.

These indicators measure economic access to health care. They can be readily obtained from health facilities or central government. The individual health facilities often charge higher fees than officially sanctioned. This fee information would have to be matched against other patient income measures to obtain a measure of “afford ability” and to assess whether it poses a barrier to access.

One of the priorities of health sector reform is to expand access to cost-effective health services that maximize impact on health outcomes for the population. Reform efforts to improve access can also be compatible, or not, with goals of efficiency and equity reforms.

- \* Indicators of equity
- \* Definition and discussion

The Concept of equity as it relate to health systems may refer variously to differences in health status, utilization, or access among different income, Socio-economic, demographic, ethnic, and/or gender groups. From this point of view, reforms to improve equity would target government subsidies on the poor, establish means testing and fee waivers based on income, and/or take action to remove physical access barriers for the poor. So one straight forward indicator of equity would be a measure of access, across the whole population to basic health services package. In these cases it would also be useful to include indicators to measure equity of utilization as well, since demand for the basic, and/or cost-effective, services may or may not increase as physical and economic barriers are reduced, or made negligible if demand does not increase much (i.e. is relatively inelastic) for cost-effective services. providing universal access to the package would have little impact on utilization and health status, other reforms attempting to promote equity focus on efforts to remove economic barriers to the use of any type of health care services people demand. In these efforts, indicators related to availability or coverage of health insurance may be considered appropriate

- \* Indicators of equity
- \* Definition and discussion

If equity is defined mainly in terms of ensuring access in general, the indicators of access can be modified and calculated across the population, or using coverage rates that compare access for different income groups. Where income inequities are the main focus the following indicators can also be used to measure the incidence of subsidies received from government health systems.

- \* Indicators of equity
- \* Ratio of share government health subsidies received to share government health subsidies received to share of total income received by income group
- \* Ratio of the Gini Co-efficient for public care subsidies to that for total income/or total expenditure. Are suggested as indicators of equity the first of the two indicators listed above compares the shares of health benefits received by each income group to the corresponding shares of income received.

The Gini coefficient for distribution of government health subsidies can be calculated in the same way, but unlike. The Gini for income it can range between negative one (all government health subsidies received by the poorest household) and one (all government health subsidies received by the richest household). As long as the indicator i.e. the ratio of the two Gini Coefficients, The value of which theoretically unbounded) is less than one in value, the government health system is pro-poor.

- \* Indicators of quality
- \* Definition and discussion

Quality of care is defined by, Arvedis Donabedian (Cited in Knowles James and Leighton Charlolle, 1997) “as that kind of care which is expected to maximize an inclusive measure of patient welfare, after one has taken account of the balance of expected gains and losses that attend the process care in all its parts”. The distinction between structural, process, and outcome dimensions of quality is commonly drawn in the literature.

In this framework, process generally refers to all that happens during the interaction between the health system and the client, including the interpersonal aspects of care delivery, as well as those aspects of service delivery setting that

directly impact the patient outcome flows from process and refers to “changes in a patient’s current and future health status that can be attributed to the antecedent health care outcome includes patient attitudes (including satisfaction), health related knowledge acquired by the patient, and health-related behavioral change as possible outcomes.

Structure refers to all the other aspects of a health system that support or are related to the interaction between the health system and the client, such as health facilities, insurance systems, medicines, drug distribution systems, management, and supervision. The ultimate outcome that most health sector reforms are implicitly or explicitly intended to produce-improved health status- is obviously most directly dependent on the quality of care provided other aspects of improved system performance access, efficiency, equity and sustainability need to support delivery of effective health services, while quality assurance efforts need to assure that the services that are more efficiently provided, equitably available, and sustainable are those that will lead to improved health status. In addition quality of care play an important role in patient perceived quality, which is the of willingness to pay to improve financial sustainability.

- \* Indicators of quality
- \* Structural indicators
- \* Existence of national standards for professional Qualifications of health manpower, including enforcement mechanisms
- \* Proportion of health workers processing basic professional qualifications, including skills for specific primary health care services
- \* Existence of clear national standards for high priority health services
- \* Presence of a national quality assurance program, including trained staff and established procedures for quality design monitoring, and improvement.
- \* Routine application of methods for incorporating community input into system design and management.

- \* Proportion of cases in which all recommended drugs are available.

Suggested as some of structural indicators

- \* Process indicators
- \* Proportion of clinics in which services are fully integrated, per national standards
- \* Proportion of health workers receiving appropriately timed effectively conducted supervision per national policy.
- \* Proportion of patient contacts in which treatment received is consistent with national diagnostic and treatment protocols including guidelines for client interaction
- \* Proportion of referrals made and consummated in accordance with national guide lines and standards.
- \* Client satisfaction.

Are some of the process indicators. While the indicators in this group are useful, they must be interpreted cautiously.

- \* Indicators of efficiency
- \* Definition and discussion

Efficiency has three dimensions as applied to individual providers or programs technical economic, and allocative which can also be applied to measuring health system performance. A health provider is technically efficient when it produces the maximum physical output of (effective) services. Technical inefficiency is common in public health systems and is most often due to failures in management and supervision.

A health provider is economically efficient if it uses input combinations that permit it to produce a given level of (effective) services at least price. Economic inefficiency is often found in situations where have little or no control over the combination of inputs they use and where facilities are constructed to serve markets which are too small to support an optional scale of services when the level of output of each service produced is such that the marginal social cost of the last unit produced is equal to its marginal social value. Indicators for technical and economic efficiency are straight forward and do not imply a value judgment about the



underlying merit of service itself. The consensus breaks down with respect to appropriate indicators of allocative efficiency, primarily these relative merits depend on whether. They are judged from the perspective of health care professionals or health consumers.

- \* Indicators of efficiency
- \* Outpatient visits per hour of physician labour (or per physician)
- \* Outpatient visits per hour of nurse labour (or per nurse)
- \* Ratio of out patient visits to personnel costs.

These are indicators of “labor productivity” and are often used because they are relatively easy to measure. They may be valid indicators of any or all of various dimensions of efficiency or process related to quality assurance. Alternatively if in adequate complementary resources are available or facilities are overstaffed in relation to the demand for their services, low productivity may reflect economic inefficiency.

- \* Cost per outpatient visit (or operating per out patient visit)
- \* Cost per hospital bed day (or per hospital admission)

These are measures of unit cost and are often used as indicators of efficiency. Use of cost as a measure of inputs avoids problems with labor productivity of efficiency when high values of labor productivity may reflect uneconomic use of complementary inputs.

- \* Percent of outpatient visits obtained from the private sector
- \* Private hospital beds as a percent of total

Are measures of the relative importance of the private sector in the provision of both outpatient and inpatient health care. There is a presumption that private health providers are both technically and economically more efficient than government. Anyway, under circumstances of weak regulation, indicators of the relative importance of the private health sector may not be valid indicators of efficiency.

- \* Personnel expenditure as a percent of total health expenditure
- \* Expenditure of drugs and supplies as a percent of total recurrent health expenditure

These indicators are often applied to government health systems to monitor the degree of economic efficiency under conditions of budget short falls. Ministries of health typically protect jobs and allow other inputs (e.g., drugs and supplies) to diminish relatively. When this happens inputs are no longer combined in such a way as to minimize costs. Similarly, high shares of drug expenditures may also signify inefficiency.

- \* Number of nurses per doctor
- \* Number of nurses per hospital bed
- \* Number of doctors per hospital bed

These are indicators of economic efficiency. They are easy to measure and comparable to international data.

- \* Ratio of average salary of government worker with a given level of expenditure, to the income of a comparable private sector health worker.
- \* Salaries of government health workers are paid on time (yes/no)
- \* Adequate performance incentives exist for government health personal (yes/no)

These indicators are designed to measure whether government workers are adequately compensated relative to private health workers and whether they have adequate incentives to perform their jobs well, which is directly related to technical efficiency.

- \* Generic drug expenditure as a percent of total drug expenditure
- \* Government health system uses basic drug list for procurement (yes/no)

These are indicators of the “value for money” which health system likely to obtain from its expenditure on drugs.

- \* Percent of government recurrent health budget spent on public health services.

This is an allocative efficiency indicator which has both public health and economic rationale. Health services are defined as those services which are either of a public good nature and services which involve “externalities”.

- \* Primary health care expenditure as a percent of recurrent cost
- \* Percent of total government drug expenditures allocated to primary care facilities.

The first indicator is forward some what by public health alllocates than by economists.

The second indicator also attempts to measure allocative efficiency but focuses more on the allocation of the most important non-personnel input.

- \* Fees are charged in all facilities (yes/no)
- \* Fee levels promote efficiency (yes/no)
- \* Referral system functions effectively (yes/no)

On efficiency grounds it is assumed that when consumer pay fees, an important link is created between the provider and consumer (i.e., fees promote supply-side efficiency as well as demand-side efficiency)

- \* Average length at hospital inpatient stay
- \* Hospital bed occupancy rate.

These are widely used indicators of hospital sector efficiency. High average length of stay (and usually high occupancy rates) may be due to inefficient budgeting or reimbursement system.

- \* Indicators of sustainabiity
- \* Definition and discussion

At the level of health system “sustainability” refers to the capacity of the system to continue to its normal activities success fully in the future, should foreign assistance be with drawn.

- \* Indicators of financial sustainability
- \* Percent of total health system financed by tax revenue
- \* Percent of government health system financed by tax revenue.

Government financing has shown itself to be a vulnerable source of financing, because it is difficult for many developing countries to mobilize sufficient revenues from their tax system to keep pace with growing demand for health services. Government financing through general taxes may be difficult to sustain during economic downturns as well as it is subject to political influences. Alternative

sources of financing as social insurance, private health insurance, employer financing and user fee may be more sustainable.

Although these indicators are proposed as measures of sustainability, they also have an efficiency dimension.

- \* Government health expenditure as percent of total government budget
- \* Government health expenditure as percent of GDP

Which as noted above are particularly vulnerable part of a health system's financing.

- \* Percent of government health expenditure directed to primary care
- \* Percent of government health expenditure directed to preventive care.

These are the areas of cut back by government when their budgets are severely constrained.

Although these indicators can be used effectively to monitor system-wide sustainability, it is important to recognize that cross-country comparisons can be highly misleading. Health systems differ significantly in how they define primary care and preventive care for accounting purposes and in how they allocate costs across various categories.

This handbook suggests a shortlist of 10-20 indicators should be adequate to provide a valid characterization of a given system's performance. The most commonly used procedure is to convene a meeting at which the full list is discussed and an effort is made to arrive at a short list through group discussion.

An alternative process, which is more quantitatively oriented, but which is group exercised would proceed as follows:

- \* Convene a meeting of experts to discuss and agree on the following three decisions:
  - 1) The ideal number of indicators to comprise a short list;
  - 2) The criteria to be used in evaluating individual indicators; and
  - 3) The weighting given to each of these criteria

Criteria for Evaluating individual indicators the evaluation literature (e.g., Betrand, Magnani, and Rusenberg, (Cited Knowles James and Leighton

Charlotte, 1997) suggests that indicators should be selected according to following criteria:

- \* **Validity.** Does it measure what it is supposed to measure? Much of the discussion of alternative indicators concerned whether the indicator was a valid indicator of a particular dimension of health system performance.
- \* **Precision.** Is the indicator clearly and unambiguously defined?
- \* **Reliability.** Will two measurements of the indicator for the same health system produce the same result?
- \* **Timeliness.** Is the indicator available on an annual basis and without undue delay?
- \* **Comparability.** Can the indicator be used to compare health system meaning fully across countries?
- \* **Additivity.** Can the indicator be readily and meaning fully applied to sub-regions and to population sub-groups (e.g., gender income)
- \* **Interpretability.** Does a higher (or lower) value of indicator consistently imply that a health system performs better?
- \* **Cost.** Is the cost manageable? There is often an unavoidable trade off between cost, on the one hand, and validity, reliability, and timeliness, on the other hand.

It is desirable that all indicators be expressed in relative, rather than absolute to facilitate comparability and the total number of indicators be as small as possible to reflect adequately the various dimensions of performance.