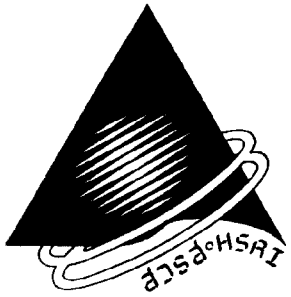
# HEALTH SYSTEM IN TRANSITION

CONTEMPORARY HEALTH ISSUE

NO. 1/95



HEALTH SYSTEMS
RESEARCH
INSTITUTE
THAILAND

**HEALTH SYSTEM IN TRANSITION**
Comtemporary Health Issue
No. 1/95

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ISBN 974-7759-36-5

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*Published by*
**Health Systems Research Institute**
Ministry of Public Health
2nd Floor, Medical and Public Health Development Bldg.,
Ngamvongvan Road, Nonthaburi 11000,
Thailand

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*Printing in Thailand by*
Desire Co., Ltd.

# PREFACE

Thailand is, at present, no longer an agricultural economy. In less than thirty years, Thailand has been transformed from a subsistence agrarian society into a rapidly industrializing free-market country. Urbanization is increasing rapidly. One great metropolis, Bangkok the Capital, dominates the nation politically and culturally. While the middle class of government and commercial employees, entrepreneurs, and professionals become more affluent due to an industrial and export-oriented agricultural development policy, yet a short distance away are usually thousands of marginal families in peri-urban congested and rural poverty-stricken areas. Although urban-like economic activities including employment in industrial and services sectors will be more predominant as income sources both in urban and rural areas. Stills, under current trend, regional inequality will be more pronounced without any sign of a polarization reversal.

All these changes has created considerable stress and strain to the health systems in Thailand. The selected papers in this book present some background detailed information of the health systems especially at the macro-level. Further, the papers argues for four mandates that health planning should adopt : (1) providing service to needy groups; (2) harmonizing the urban-rural dualism; (3) realistic financing mechanisms; and, (4) appropriate use amid technology avalanche. The papers also clearly indicate that effective data bases and information systems are urgently needed. In addition, cooperative planning for health betterment should be considered not just only the Ministry of Public Health, but also other Ministries such as Finances, Interior and University Affairs etc. Finally, the public-private dilemma should be counteracted by built-in mechanisms that counter the fee-for service and full-coverage insurance.

In compiling a works such as this, several people deserve to be acknowledged, in particular Ms. Pisamai Chanthawimol whose dedication and assistance in editing this book proved to be invaluable.

*Somsak Chunharas, MD., MPH.*
Director, Health Systems Research Institute

# CONTENTS

# Health Care Financing in Thailand

Viroj Tangcharoensathien

## Introduction

This paper is divided into three sections: first, a brief review of the health delivery system and health care financing; second, a critical review of the existing health insurance schemes covering their mechanisms, population coverage, sources of finance and medical benefits. Finally, the author challenges the health card project as one of the policy options to increase insurance coverage for those who are hardly covered by the social insurance scheme under the 1990 Social Security Act.

## Health Delivery System and Health Care Financing in Thailand

### *Country Background*

Thailand is a tropical country in Southeast Asia with a total population of 56.2 million in 1991. Of these, 18.7% lived in urban areas. Selected social, economic and health indicators are summarised in Table 1.

Two important observations on the data presented in Table 1 are worth mentioning. First, Thailand's economic production pattern is changing towards more industrialization as reflected by manufacturing's increased proportion in the gross domestic product (GDP) as opposed to a decreasing proportion for agriculture. This not affects labour structure, income distribution and migration, but also disease patterns. Thailand is experiencing a morbidity transition whereby diseases of affluence are increasing while infectious diseases persist. Second, the pattern of household commodity consumption did not changed greatly from 1986 to 1988 except for a 60% increase (in real terms) in alcoholic beverage consumption (calculated from NSO 1986a, 1988a).

Income distribution in Thailand has tended to worsen while absolute poverty has significantly decreased (TDRI 1988). Wealth concentration as measured by Gini coefficients was 0.426, 0.453 and 0.500 in 1976, 1981 and 1986 respectively (NSO 1976, 1981a, 1986a). As noted by the Thailand Development Research Institute (1988:40):

> *There were evidence of a continual adjustment process through which more people tended to move to more prosperous areas and better occupations and consequently improved income distribution. The adjustment was, however, too slow to outweigh the increasing trend of income inequality caused by the widening income disparities.*

The provision of social services helps explain, in part, why the distribution of human capital assets is inequitable over time but less than that of income. Multiple regression analysis shows that employment-related factors (type of occupation, land tenure, employed members) are the major sources of income inequality, followed by locational (rural, urban, region) and personal factors (sex, age, educational level) (TDRI 1988).

**Table 1** Selected social, economic and health indicators (1988, unless specified)

| | | | |
|---|---|---|---|
| Population (million) | | 54.5 | |
| GNP per capita (US$) | | 1,00.00 | |
| Average annual growth rate, 1965-1988 (%) | | 4.0 | |
| Distribution of GDP (%) | *1965* | | *1988* |
| Agriculture | 32 | | 17 |
| Industry | 23 | | 35 |
| (Manufacturing) | 14 | | 24 |
| Services | 45 | | 48 |
| Average growth rate of GDP by sector, 1980-1988 (%) | | | |
| Agriculture | | 3.7 | |
| Industry | | 6.6 | |
| (Manufacturing) | | 6.8 | |
| Services | | 6.8 | |
| Share of total household monthly expenditure (%) | *1968* | | *1988* |
| Food, alcoholic beverages, tobacco | 41.9 | | 40.3 |
| Clothing and footwear | 6.2 | | 6.2 |
| Housing | 23.4 | | 24.3 |
| Medical and personal care | 6.1 | | 6.0 |
| Transport and communication | 9.1 | | 9.7 |
| Education, recreation, misc. | 5.4 | | 4.9 |
| Non-consumption expenditure | 7.9 | | 8.6 |
| Adult illiteracy rate, 1985 (%) | | | |
| Total | | 9 | |
| Women | | 12 | |
| Percentage of age group enrolled in education 1987 (%) | | | |
| Primary | | 95 | |
| Secondary | | 28 | |
| Tertiary | | 20 | |
| Life expectancy at birth (years) | | | |
| Total | | 65 | |
| Male | | 63 | |
| Female | | 68 | |

**Table 1** ***cont.***

| | | | |
|---|---|---|---|
| Average annual growth of population (%) | *1980-1988* 1.9 | | *1988-2000* 1.3 |
| Crude birth rate (per 1,000 pop.) | | 22 | |
| Crude death rate (per 1,000 pop.) | | 7 | |
| Total fertility rate | | 2.5 | |
| Contraceptive prevalence (%) | | 66 | |
| Infant mortality rate (per 1,000 live births) | *1965* 88 | | *1988* 30 |

**Source:** Adapted from The World Bank (1990), World Development Report 1990; NSO 1986a; NSO 1988a.

## *Health Delivery System*

When analyzing health care financing, it is necessary to understand the health delivery system and health service utilization pattern as briefly discussed below. Although there are some methodological problems in comparing different survey data, Table 2 shows that there is a consistent trend in choice of outlets used by ill individuals. From 1970-85, there was an increasing expectation and use of public outlets staffed by physicians and a decreasing trend in using self-prescribed drugs and traditional medicines, or attendance at healers.

It is worth noting in Table 2 that in 1985, the aim was for district hospitals to cover all districts in the country by the end of the Fifth National Health Development Plan (1982-86). In addition, the three-year compulsory service programme at Ministry of Public Health (MOPH) district hospitals, which was imposed on all medical graduates, was introduced in 1972.[1] The growing availability of hospitals and medical doctors at the district level, which probably began to meet the previously unmet demand for health services in rural areas, could explain the significant three-fold increase in the use of public hospitals in 1985 compared with 1979. However, an increase in the use of professional care cannot be explained solely by availability of the supply side. On the demand side, household income plays an equal role.

The inter-relationship between rising consumer income and the availability of health services is also confounded by other important factors in the demand function, namely price, price of alternative care, personal taste and the time cost of care. Interpretation is made with caution of *ceteris paribus* or "other things being constant". Distribution of facilities and manpower is shown in Table 3.

[1]Subsequent three year compulsory rural district hospital service was imposed to all pharmacists and dental graduates in 1988 and 1989 respectively.

**Table 2** Health service utilization pattern for reported ill persons comparing different surveys

| Choice of outlet | 1970 | 1979 | 1985 |
|---|---|---|---|
| No treatment | 2.7 | 4.2 | - |
| Traditional Medicine/Healers | 7.7 | 6.3 | 2.4 |
| Self-prescribed drugs | 51.4 | 42.3 | 28.6 |
| Public health centres | 4.4 | 16.8 | 14.7 |
| Public hospitals | 11.1 | 10.0 | 32.5 |
| Private clinics/hospitals | 22.7 | 20.4 | 21.8 |

**Sources:** Health Planning Division, MOPH. 1970, 1979; Institute for Population and Social Research, Mahidol University, 1988.

**Table 3** Percent distribution of health resources between public and private sectors in 1986.

| **Health Resources** | **Public** | | **Private** | **Total** | **(Number)** |
|---|---|---|---|---|---|
| | MOPH | Other ministries | | | |
| Physical resource | | | | | |
| | | | | | (963) |
| Hospitals | 64 | 9 | 27 | 100 | (85,993) |
| Beds | 69 | 21 | 10 | 100 | (5,172)* |
| OP clinics | 1 | 3 | 95 | 100 | (7460) |
| Health centres | 100 | 0 | 0 | 100 | |
| Health manpower | | | | | |
| Medical doctors | 49 | 41 | 10 | 100 | (9,255) |
| Dentists | 40 | 49 | 11 | 100 | (1,395) |
| Pharmacists | 32 | 19 | 49 | 100 | (3,356) |
| Nurses | 70 | 25 | 5 | 100 | (37,383) |
| Midwives | 91 | 2 | 7 | 100 | (8,449) |

**Sources:** Health resource survey, Health statistics division, MOPH; Rural health division, MOPH.
**Note:** *Almost all of the private clinics are run after office hours by doctors who work for government service.

## *Country Background*

### *Trends in health expenditure*

In 1987, 5.7% of the GNP was spent on health including private household payments and public health expenditures. The per capita expenditure on health was baht 1,282, a 7.6% increase in real terms from 1986 compared with 7% GNP growth in the same period (Table 4). Health expenditure has been steadily increasing at a higher rate than the growth of GNP. In 1984, a 12% real term increase in health expenditure was due to the high capital investment for district hospitals aiming at one hundred percent district coverage according to the Fifth National Health Development Plan (1982-86).

By the year 2000, the projected health expenditure will be 8.1% of the GNP. Per capita health expenditure will be three times that of 1987 and will be as high as in developed countries.

However, there is no empirical evidence identifying either the causes of increasing health care costs or whether better health among Thais is achieved by increasing resources spent. The causes of increasing health expenditure will be discussed in more detail subsequently.

**Table 4** Trend of total per capita health expenditure (public and private spending) in the past decade and the projection to the year 2000. (1987 prices)

| Year | % of GNP on health | Per capita expenditure (Baht) | % increase health expenditure | % GDP growth |
|---|---|---|---|---|
| 1978 | 3.4 | 680 | - | - |
| 1979 | 3.6 | 710 | 4.4 | 5.05 |
| 1980 | 3.9 | 738 | 3.9 | 4.57 |
| 1981 | 4.2 | 798 | 8.1 | 5.96 |
| 1982 | 4.6 | 864 | 8.3 | 3.90 |
| 1983 | 4.8 | 939 | 8.7 | 6.76 |
| 1984 | 5.2 | 1,052 | 12.0 | 6.65 |
| 1985 | 5.6 | 1,132 | 7.6 | 3.40 |
| 1986 | 5.6 | 1,192 | 5.3 | 4.30 |
| 1987 | 5.7 | 1,282 | 7.6 | 7.74 |
| ***Projected*** | | | | |
| 1988 | 5.8 | 1,389 | 8.4 | 5.5 |
| 1989 | 6.0 | 1,506 | 8.4 | 5.5 |
| 1990 | 6.1 | 1,634 | 8.5 | 5.6 |
| 1991 | 6.3 | 1,774 | 8.6 | 5.6 |
| 2000 | 8.1 | 3,718 | | |

**Source:** Social Development Project Division, NESDB 1990
**Note:** The projected GDP growth in 1988 to 1990 was under-estimated. It was actually 12.0% in 1988 and 10.8% in 1989 (The Bank of Thailand 1990).

### *Sources of finance for health care*

Table 5 shows that public sources of funding play a minor role in financing health services in Thailand with a decreasing trend from 27.9% of total health expenditure in 1984 down to

24.2% in 1987. As opposed to public sources, private household expenditure on health plays a major role with an increasing trend from 69.3% in 1984 to 73.2% in 1987. The high private household expenditure on health should be interpreted with care, particularly since some of this expenditure could be reimbursed from the Ministry of Finance by government employees and dependents and some expenditures could be reimbursed from employers. Among the public services, the MOPH is the major provider of the country, providing comprehensive health care mainly in rural areas outside the Bangkok Metropolis. Of the MOPH expenditure in 1988, 24.7% was spent on primary health care, 29.8% paid for primary medical care mainly at subdistrict health centres in supporting PHC and providing medical care, 27.9% went on secondary medical care and 10.7% on tertiary care (Thai Government 1988). Other ministries, especially teaching hospitals under the Ministry of University Affairs, are responsible for training health professionals and providing tertiary curative care.

**Table 5** Percent sources of health care financing in 1984, 1986 and 1987 (1987 prices)

| Sources of finance | 1984 | 1986 | 1987 |
|---|---|---|---|
| Public source | 27.9 | 26.0 | 24.2 |
| MOPH | 17.4 | 15.3 | 14.1 |
| Other ministries | 6.9 | 6.5 | 6.0 |
| Public employee medical benefits | 3.6 | 4.2 | 4.1 |
| Workmen's compensation fund | 0.5 | 0.4 | 0.4 |
| State enterprise employee medical benefits | 0.8 | 0.9 | 0.8 |
| Private insurance | 0.8 | 0.7 | 0.7 |
| Foreign aid | 0.8 | 0.8 | 0.7 |
| Private household | 69.3 | 71.2 | 73.2 |
| Total: Percent | 100.0 | 100.0 | 100.0 |
| Million Baht | 53,032.9 | 62,099.9 | 67,771.3 |

**Sources:** Health Planning Division, MOPH; National Accounting; Workmen Compensation Fund, Labour Department, Ministry of Interior; The Comptroller-General's Department, Ministry of Finance; Financing health service and medical care in Thailand, 1987 report, MOPH.

Evidence shows that the effective tax rate is regressive for households in the lowest quintile but it is proportionate to income for all the households in the higher earning quintiles. Tax on consumer goods is highly regressive and income tax is the only progressive tax (Krongkaew 1979). In 1987, only 19% of government tax revenue (191.6 billion Baht)[2] came from income tax and corporate profits. All indirect tax accounted for 68%, namely general sales tax 18%; consumption tax, excise tax, specific sales tax 30%; import tax 19% and export tax 1% (NSO 1988b). The tax ratio in 1986 was 15.12%[3] (calculated from NSO 1988b).

In 1988, of the total baht 243,000 million government budget, 24.5% was for debt

[2]One billion equals 1,000 million.

[3]The gross domestic product and the general tax revenue in 1986 were 1,098,366 million and 166,123 million Baht respectively at current year price.

servicing, 19.3% for defence, 18.6% for education, 11.7% for public administration, 7.1% for agriculture, 4.9% for communication and transport and 4.5% for health. The budget for health remained consistent at the rate of 4.1-4.5% of the total public spending in the previous decade (NSO 1988b). It is noteworthy that the MOPH hospital revenue generated from user charges contributes 40-50% of hospital expenditure (Rural Health Division 1989; Rural Hospital Division 1989).

Private household expenditure on health was used mainly to pay for curative care either through user fees at government facilities or charges at private clinics and drug stores. Of the total national health expenditure in 1987, 73% was estimated by the National Economic and Social Development Board (NESDB) to be spent on drug consumption (Thai Government 1988).

There have been several household socio-economic surveys (SES) conducted by the National Statistical Office (NSO) since 1957; the most recent (1988) is the nineth SES. These were comprehensive national surveys[4]. Details on income and expenditure[5] were obtained from more than 12,000 households. Non-sampling errors are more likely than sampling errors when sensitive questions such as those about income are asked.

As shown in Table 6, expenditure on medical care as a percentage of household monthly income and expenditure did not change much during the period 1981-88. It accounted for 3.3% to 3.6% of monthly income and 3.3% to 3.5% of monthly expenditure. Medical services accounted for the major share of household expenses for medical care, with an increasing trend from 68% in 1981 to 73% in 1986 and 78% in 1988. In contrast, expenses on drugs and medicines held a minor share which decreased over the period.

**Table 6** Changing Shares of Household Expenditure on Health (current price)

| | 1981 | 1986 | 1988 |
|---|---|---|---|
| Household monthly income | 3,378 | 3,631 | 4,106 |
| Household monthly expenditure | 3,374 | 3,783 | 4,161 |
| Expenses for medical care | 113 | 132 | 143 |
| Drugs | 36 | 35 | 31 |
| Medical services | 77 | 97(100) | 112(100) |
| Public | | 48(50) | 52(46) |
| Private | | 39(40) | 51(46) |
| Others | | 10(10) | 9(8) |

**Source:** adapted from SES 1981, 1986 and 1988
**Note:** Breakdown of medical service expenses in 1981 was not available. Percent in brackets.

[4]All sample households were divided into twelve equally representative subsamples. Each subsample household group was interviewed during each month of the year. This intensive annual survey is intended to avoid seasonal variations in household income and expenditure.

[5]Various reference periods were used. Expenditure for all goods and services were obtained for the preceding month. Infrequently purchased items and income were obtained for the past 12 months. Data on food, beverages and tobacco consumption were collected daily for a week.

When expenses on medical services are broken down 6 by types of spending in 1986 and 1988 (Table 6), there is a falling trend in spending on public hospital services (from 50% to 46%) as opposed to private clinics and hospitals (from 40% to 46%). This finding has important policy implications for the private health sector which will be discussed later.

While private clinics and hospitals were less frequently consulted than public hospitals in 1985 as shown in Table 2, a substantial amount of household spending on medical care went towards private clinics and hospitals (40%in 1986 and 46% in 1988) (NSO 1988a). This is because the cost of services in the private sector is higher than those in the public. Public hospitals charge for drugs and supplies and laboratory investigations while private clinics and hospitals charge at full cost plus a profit margin.[6]

The current prices in each national SES in Table 6 were adjusted for inflation using a general consumer price index for household income and expenditure. A medical care price index was used for the expenses on medical care (NSO 1989). The 1988 household income and expenditure on health is shown in Table 7.

**Table 7** Summary of household monthly income, expenditure, and expenses for health care in 1981, 1986 and 1988 at 1988 prices

| | 1981 | 1986 | 1988 |
|---|---|---|---|
| Household monthly income | 4,130 | 3,864 | 4,106 |
| Household monthly expenditure | 4,125 | 4,026 | 4,161 |
| Expenses for health care | 139(100) | 138(100) | 143(100) |
| Drugs | 44(32) | 37(27) | 31(22) |
| Medical services | 95(68) | 101(73) | 112(78) |

**Source:** adapted from table 6
**Note:** Percent in brackets

The expenses in real terms on self-prescribed drugs fell while expenses on medical services rose over the years studied (Table 7). This finding conforms with the changing health service utilization pattern as illustrated in Table 2.

Comparing 1988 with 1986, average household monthly incomes rose by 6.3%, expenses on health care[7] rose by 3.6%, drug[8] expenditure decreased by 16.2% and expenses on medical services[9] increased by 10.9%. The demand for medical services thus has a higher responsiveness to income rise than demand for drugs. The demand for medical services, therefore has income elasticity >1 since percentage change in expenditure is more than the percentage change in income.

[6]There is no empirical evidence nor estimation showing the profit margin in private clinics and hospitals.

[7]Expenses on medical care is the total household payment including self-prescribing drugs and medical services (NSO 1988a).

[8]Expenses on self-prescribed drugs (NSO, 1988a).

[9]The household payment for consultations which usually include drugs, laboratory investigations, medical procedures and consultation fees, either at public or private modern sectors (NSO, 1988a).

The ratio of percent change in medical service by percent change in income equals 10.9/6.3 = 1.7. This ratio could be used as a proxy for income elasticity of demand for medical service. In contrast, the demand for drugs has a negative income elasticity, -16.2/6.3 = -2.6. The income elasticity of health care is 3.6/6.3 = 0.57. Medical services may be classified as luxury goods, thus consumption increases when income rises. Contrastingly, self-prescribed drugs are inferior goods since consumption falls when income rises.

These findings conform with those reported by Myer et al. (1985) who used the 1981 NSO household socioeconomic survey. The income elasticity of health care was 0.25, medical services 1.62 and drugs -0.69. The two data sets are presented in Table 8.

**Table 8** Income elasticity of demand for health care, medical service and drugs, comparing two data sets from 1981 and 1986/88

| Income elasticity of demand for | 1981 | 1986/1988 |
|---|---|---|
| Health care | 0.25 | 0.57 |
| Medical services | 1.62 | 1.7 |
| Drugs | -0.69 | -2.6 |

**Source:** Myer et al. (1985) for 1981 data set; Modified from Table 7 for 1986/88 data set.

Interpretation of Table 8 should be made with caution. In addition to income, there are other variables in the demand function, namely, price, availability and price of alternative services, time costs and personal taste. Demand is also confounded by an "agency relationship" as discussed and changes in demographic characteristics, morbidity, mortality patterns and endemicity of illness. Should everything else be constant over the period concerned, medical services are luxury goods as opposed to self-prescribed drugs which are inferior goods. However, the figure calculated in Table 8 is an estimation of elasticity showing a broad consistency over time.

This has an important policy implication. In short, if households spend more on health care, mainly for curative, costly, professional services when income rises, the total health expenditure will rise. This also raises questions about the efficiency of curative oriented behaviour among professionals and household members. Moreover, the approximate costs per additional life saved for curative services are higher than preventive and community services respectively (World Bank 1987).

## Health Insurance Schemes in Thailand

A variety of health insurance schemes exist in Thailand, each with different objectives, target populations, sources of funding and mechanisms of paying providers. A brief description of each scheme appears as follows.

### *Free Medical Care for the Low Income Groups*

Households with incomes falling below the poverty line (officially defined as monthly income less than baht 2,000) will be given a free card (FC) which entitles household members

to free medical services at public outlets when ill. This scheme was initiated in 1975 and implemented countrywide in 1981. An FC is valid for three years and a subsequent household income assessment is needed before a new FC is issued. There were free cards issued in 1981, 1984 and 1987 respectively. In 1987, 10.0 million or 18.9% of the total population was covered by this scheme. A new FC was issued in October 1990 for the period of October 1990 to September 1993. The poverty level, defined as a household monthly income less than baht 2,000, has not been changed since 1981. This scheme can be classified as social assistance for low income households. FC holders must first contact the nearest health centre and follow a referral line for higher level of care.

All public health outlets are responsible for providing free care for FC holders. The scheme is financed through general tax revenue by allocating a budget through provincial health offices. The budget is usually not matched with the annual expenditure on free care. Estimates are made that the budget only covers 20-50% of the total expenses (Rural Health Division 1989; Provincial Hospital Division 1989). The deficit is financed through the hospital's own revenue from user charges. In fiscal year 1991, 2,500 million Baht was allocated and the average per capita budget was 233 Baht.

A regional difference exists in the free care budget allocation. In FY 1988, the poorest area, namely the Northeast region, had the lowest budget (61 Baht per FC holder) while the Central region, a better off area, had the highest (85 Baht). Budget allocation for free medical care was based on the take-up rate reflected by the workload of services used by FC holders in the previous year, instead of the total number of regional poor (Tangcharoensathien and Sirikomon 1990). Inequitable regional distribution of public health resources (hospital, bed and manpower) and inequitable regional income distribution are the main causes of lower access to and use of health services by FC holders. Consequently, the inequitable access to health services and the lower take-up rate by FC holders are the major causes of inequitable budget allocation when take-up rate and workload provided to FC holders are used as the sole allocation criteria. Nonetheless, the budget allocation has been improving over the past five years more weight has been given to the number of regional poor and less weight to the take-up rate (Tangcharoensathien and Sirikomon, 1990).

The above study agrees with a previous study undertaken in 1980 by Mills (1990) when the project was not yet fully implemented. She found that the budget was allocated in favour of the better-off region. She also called for effective issuing of FCs. Subsequently, for the 1984 and 1987 cards, local tambon (subdistrict) committees played a major role in screening the eligible poor households, instead of the authoritative village headmen who usually used a subjective assessment of poor households. Moreover, an income assessment form was used and there was better control at the local level so that free cards were issued more properly. A study by Suksawadi Na Ayuthya et al. (1988) found that there was a downward trend in the misuse of cards; in 1991 poorer households had cards while the better off were excluded. However, 41% of low income households still did not have a FC.

Use of services in this scheme in FY 1988 was analysed by Tangcharoensathien and Sirikomon (1990) when a new regulation[10] was enforced that the health centre was the sole first contact. Interestingly, the use of free services by non-FC holders via the sliding scale[11] increased dramatically in 1988 compared with 1987 when FC holders could access either health centres or district hospitals (Table 9). Use of district hospital free services by non-FC holders rose by 52%. Lower access cost to district hospitals than provincial hospitals and a lower quality of care at health centres encouraged bypassing of health centres.

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[10]FCs issued in 1981 did not specify the provider. It was said that FC holders were shopping around at every level of care. The 1984 FCs specified two providers: district hospital and health centre. Finally in the 1987 FCs, only the health centre was designated as the first contact. The 1990 FCs also maintain the health centre as the first contact.

[11]Non-FC holders are exempt from user charges and get partly or totally free services if they cannot afford the bill via a mechanism called the "sliding scale" usually under the doctor's discretion in district hospitals and means tested by social workers in provincial hospitals.

Thus, the majority of these patients were trapped at the district level. There are two explanations for this phenomenon. First, FC holders who bypassed health centres in FY 1988 fell into the category of "non-FC holders who get free care via the sliding scale at district hospitals." This is because the sudden change in the regulation in 1988 (that health centres were the sole first contact for FC holders) did not change FC holders' utilization behaviour and preference for better services at district hospitals. Second, the issue of FCs was limited, and some eligible or the borderline poor were not covered.

**Table 9** Percent changes of volume of free services used by FC holders and non-FC holders via sliding scale in FY 1988 compared with FY 1987 at each level of care

| Volume of free services used by | Health centre | District hospital | Provincial hospital |
|---|---|---|---|
| Free cardholders | -1% | -17% | -37% |
| Non-free cardholders (via sliding scale) | +2% | +52% | +6% |

**Source:** Rural Health Division, MOPH FY 1987 and FY 1988 .
**Note:** Free services include number of OP visits and IP cases. In 1987, district hospitals and health centres were the first contacts, but in 1988, only health centres were the first contacts.

The evidence of decreased use of services by FC holders at all levels (-1%, -17% as well as -37% respectively) supports the explanation that FC holders did not follow the referral line. Thus, the shift from FC holders (following referral rule) to non-FC holders (bypassing health centres and accessing free services via the sliding scale) is a better explanation than the limited FC coverage (Tangcharoensathien and Sirikomon 1990).

The above phenomenon proves that a referral line does not increase efficient and rational use of services by FC holders if the first line service is not strengthened particularly at the health centre level. Moreover, a referral line imposed on FC (and Health Card) holders but not on civil servant medical beneficiaries is a socially divisive policy. This will be discussed in subsequent sections.

## *Health Card Project*

Community financing in support of PHC has been developed in Thailand since 1982. Mechanisms include revolving drug funds, nutrition funds, sanitation funds, multipurpose funds and the latest, the health card funds (PRICOR 1987).

The Health Card Program (HCP) is a voluntary health insurance prepayment scheme introduced in 1983 as a pilot project by the MOPH and combining three main objectives: (1) PHC promotion by raising funds in the community for PHC activities, e.g., construction of cisterns, privies, multi-purpose cooperative shops selling consumer products, fertilizer, etc. and promoting community development and self-reliance; (2) strengthening of the referral system in order to increase efficient use of resources at each level, stimulate the use of the previously underused health centres and promote rational use of tertiary care via screening and referral lines; and (3) to raise more health resources thereby supplementing the public resources through risk sharing instead of user fees which impose a financial burden solely on the ill.

In 1984, the HCP was gradually implemented in rural areas and then in 1985 in some urban areas of six pilot provinces including Chiangmai. Target populations are those which

can afford a premium. A mother and child health card (MCH card) costs 200 Baht to cover prenatal, natal and postnatal care as well as the immunization of the baby. A health card (HC) costs 300 Baht and covers four household members for up to eight episodes of illness in one year (but there is a ceiling of 2,000 Baht for each episode). A minimum enrolment base of 35% of the households in each village was set to ensure risk sharing. Village committees were responsible for collecting premiums and these were kept in the village as a health card fund (HCF). This fund is used as revolving capital for income generating activities initiated by villagers to promote PHC. A fixed 70% of the HCF is reimbursed to compensate health providers in the referral line (health centres, district hospitals and provincial hospitals) by the end of the year. The urban HCP in six pilot provinces used the same principle (with slight modifications) as in rural areas. Municipal health facilities are the first contact and the provincial hospital is the referral site for tertiary care.

It is worth mentioning that during nationwide HCP implementation, the MOPH decentralized decision-making to provincial levels to define their own price of the card (especially in urban areas), disease coverage, number of episodes covered, number of members covered, the percentage of HCF kept in communities, and the level of compensation to providers. The number of household members covered by a health card varies by province but the premium rate is generally the same.

Tantiserani and Prompakdi (1988) reported on the national situation of the HCP implementation. By 1987 the HCP covered 2.7 million or 5.1% of the total population in the country (excluding Bangkok Metropolis), 32% of all villages, 70% of all subdistricts, 96% of all districts and all 72 provinces in Thailand. Premiums collected were baht 182.9 million in 1987. The approximate medical expenses per HC holder were baht 81 [baht 267.5 million raised in HCFs/3.5 million members] in FY 1987.

The MOPH health facilities are responsible for providing care for the HC holders. To strengthen the referral line, the first contact for a holder is the health centre and access to upper levels requires a referral letter. Incentives to avoid unnecessary use of services by HC holders were given in the first phase of implementation. A HC could be renewed free if it had not been used in the previous year. HC holders may choose to pay user fees with a 10% discount for minor illnesses and keep the card valid for major illnesses in the future.

Although the HCP has its advantages in raising funds in villages in support of PHC and community development, there are some disadvantages in relation to provider cost recovery. Cost recovery has not insisted on the early phase of the MCP but once implemented nationwide, policy makers became aware of the financial position generated by the HCP. Financial evaluation found that some district hospitals and health centres incurred deficits when their expenses on drugs exceeded reimbursement from the HCF, but most of the provincial hospitals made profits (Hongvivatana et al., 1986). This was because most of the HC holders were receiving care at the district level. This raised problems of equity (since HC holders are often the better off), if district hospitals had to subsidize HC holders by using their own hospital revenue. It was also found that HC holders still did not follow the referral line. There was a substantial bypassing of health centres because of the perception of low quality care there.

In 1985-86, there was a strong support by the MOPH for the HCP. It was stated clearly in the Sixth Five Year National Health Development Plan (1987-91) that: *the state will support and promote voluntary health insurance.* The former government's health policy addressed to the Parliament on August 27, 1986 stated that *the HCP is a key strategy towards a voluntary health insurance.* Moreover, the present coalition government stated to Parliament on August 25, 1988 as a part of its social policy regarding health, that, *the state will improve the existing health insurance schemes.* Unfortunately, the HCP has been a low priority under the administration of the MOPH since FY 1989.

Kirananda (1990) evaluated the current HCP situation via a national census of all HCFs and health facilities by questionnaires administered through provincial health offices in 1988. By September 30, 1988 there were 10,685 HCFs, 458,218 HCs (including MCH cards) with 119.75 million Baht raised in these funds. The population covered by the HCP was 4.5% by September 30, 1988. There were 9,582 HCFs which had been operating for at least a year

which were selected for further detailed analysis.

On average, there were 32.6 HCs covering 190 members and 40% of the total households in a village. On average, in a HCF, 207 outpatient (OP) visits were made, 44% at a health centre, 33% at a district hospital and 23% at a provincial hospital (nine inpatients were admitted). Thus, the HC usage rate was 6.63 [(207+9)/32.6=6.63] services per card per year in 1988. Ten out of 32.6 cards (31%) were not used at all. On average, the HCF raised 10,661 Baht and used approximately 9% of the HCF to generate a profit of 2,041 Baht from investment (the profit from the revolving capital was 19%).

Health centres could screen 62% of the OP consultations (38% were referred). In contrast, district hospitals could screen more, up to 97% of the OP visits, only 3% were referred. Proper referrals of HC holders to district hospital (having a valid referral letter) occurred for 48% outpatients (OP) and 60% inpatients (IP) referred by health centers. Thus the health centre bypass rate (without a referral letter) was 52% for OPs and 40% for IPs respectively.

Comparing direct treatment costs incurred to health providers with the compensation from HCFs, cost recovery for drugs was 280%, 41% and 47% at health centres, district and provincial hospitals respectively. If bad debt[12] was included the rate would be higher at 385%, 58% and 54% respectively.

In 1988, the MOPH health facilities were compensated with baht 103.5 million from HCFs. This amount of compensation accounted for 64% of the direct treatment costs (based on price schedule rather than costs). It increased to 84% if bad debts were included. If costs were actually calculated instead of price, the cost recovery rate would be higher because drug prices in government hospitals usually have a 10% to 15% mark up.

Data from this report (Kirananda, 1990), especially the financial reports, the cost recovery and the service usage rate at each level of care must be interpreted with care due to inaccuracy and the lack of valid and reliable HCP reports from most of the provincial health offices, provincial and district hospitals and health centres. The data on the number of HCs and population coverage are more reliable.

There has been other research on the HCP, mainly in rural areas. Hongvivatana et al. (1986) reported research done in 1985 in three subdistricts from three provinces in the Northeast, Central and South from which 1,252 households were selected for investigating health utilization behaviour between HC holders and FC holders. The quality of data in this report is more reliable. Summaries of their findings and recommendations are as follows.

(1) The HCP can satisfactorily reduce OP visits at provincial hospitals but the final workload is borne by district hospitals. There is bypassing of health centres due to the villagers' perception of low quality of services there. There is also medically inappropriate referral of patients from health centres.[13] It is noteworthy that midwives at health centres may be forced to refer patients when they are asked to do so. There is a need to strengthen health centre capability (logistics, budget, personnel, technical supervision) as a base for a successful referral system and to decrease bypassing of health centres.

(2) The free service at all three levels (subdistrict [*tambon*], district and provincial) is affected by inappropriate enforcement of the referral line because HC holders would choose free services at two higher levels rather than at the tambon by forcibly obtaining a referral letter from the health centre. The authors propose that cost-sharing either in terms of a flat rate (deductible) or fixed percent of the bill (co-insurance) be introduced at district and provincial levels but a free service given at the tambon level. They conclude that this would encourage the use at the tambon level and more rational use of costly, higher levels. At the

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[12]Bad debt is the uncollected premium from HC holders in the case of flexible terms of membership payment.

[13]Medical doctors are referees for reviewing referral letters from health centres as to whether patients were properly referred or not.

same time, cost-sharing also generates more resources to compensate health providers. However, this idea has not yet been implemented. The researcher believes that imposing cost-sharing for HCP beneficiaries in Thailand in the early phase of the inception of voluntary health insurance would be too early as it might deter demand for the health card.

(3) In the sample households, 34-56% of the HCs were used in a year (in 1985). They conclude that renewability of unused cards is a successful incentive for avoiding unnecessary use of health services. The abolition of card renewability in subsequent years does more harm than good. It may encourage holders to use more health services. The opponents of card renewability argue that this mechanism reduces the demand for a new health card and thus depletes the HCF. This is a controversial argument and needs more investigation on household demand for HCs and health service utilisation patterns.

(4) The management of the HCF at village and tambon levels is not effective. The researchers suggested that the HCF should be administered at the district level for a broader enrolment base and more highly skilled management. The fixed rates compensating health centres, district hospitals and provincial hospitals at 5%, 15% and 15% of a HCF respectively, are unfair to district hospitals because most of the workload falls on them.

(5) They found that there was a falling demand for the HC in the subsequent years in rural areas because of inadequate sales promotion, the increasing premium for a HC from 200 Baht (in 1984) to 300 Baht (1985-87) and a MCH card from 100 Baht to 200 Baht in that period and the termination of renewability of unused HCs. They conclude that these changes affect demand for HCs and threaten the financial viability of voluntary health insurance which is dependent upon relatively stable and adequate demand. They suggest that the MOPH should maintain aggressive marketing efforts for a number of years. It is worth noting that at the operational level such efforts formally died down rapidly after the first year of the project and finally were left under the responsibility of VHVs/VHCs. However, this report does not explore whether there is a "selection bias" in the HCP which is a common problem in voluntary health insurance schemes as discussed in chapter one. Although it could not be generalized to the countrywide HCP this small sample study throws light on the detailed management of HCFs and health service usage pattern by holders.

Another study by Satravaha (1985) in a rural village in Roi-et province using pre and post HCP implementation data (without control villages) found significant increasing use of RDFs, health centres and provincial hospitals in the referral line but HC holders also used traditional healers and drugstores.

To date, there is no evaluation research on the HCP in slums where community organization seems to be weaker due to lack of social cohesiveness. Does the HCF promote urban PHC? What is the health service usage pattern among slum dwellers where health services (either public or private) are in closer proximity than in rural areas and access costs are lower? There is also a need to prove and quantify "selection bias" and examine the demand for health cards. These questions, particularly pertaining to the urban HCP, have not yet been explored.

## *Civil Service Medical Benefit Scheme*

Government employees (including officials, permanent employees, veterans, civil and military pensioners[14]) and their dependents (spouse, parents, and three children) are covered by

[14]Pensioner and veteran medical benefit covers oneself. Only the current civil servants' dependents are covered by the scheme.

free medical services as a fringe benefit[15]. State enterprise employees and dependents are also covered. Beneficiaries can have access to hospital services freely without following a referral line.

The scheme is financed through general tax revenue. The Ministry of Finance holds a central budget for this purpose. It is used to refund OP bills to the patients and directly reimburse hospitals (either private or public) on a retrospective basis for hospitalization. Open ended itemised bills are permitted for public hospitals but a ceiling was set for private hospitals.

In FY 1990, 5.6 million government employees and dependents (9.8% of the total population) spent baht 4,315 million or baht 770 per capita on medical services and 0.8 million state enterprise employees and dependents (1.5% of the total population) spent baht 564 millions or baht 732 per capita on medical services.

There are abuses of this scheme shown by the increasing trend in the total annual expenses and some faulty claims by private facilities. The overall fringe benefits and the medical benefit accounted for 24% and 3.9% of the total government employee payrolls in 1986 (Kirananda 1989). Kirananda pointed out that although the fringe benefits are important to the relatively low paid government employee, the unlimited disease coverage, and lack of co-payment mechanisms causes a rise in health care costs and inefficient use of resources and potential abuses. The researcher found that different benefit structures in each insurance scheme at as a wedge in inequality among groups of the population.

## *Compulsory Health Insurance*

The Workmen Compensation Fund (WCF), a compulsory health insurance scheme for workers in Thailand, was introduced in 1974. It is an employer liability scheme whereby employers contribute 1.2 to 4.5% of the payroll to the WCF administered by the Department of Labour. The government contributes to the management of the Fund. Workers (excluding dependents) are covered for work-related illnesses and injuries.

Workers have direct access to either public or private hospital care. The Fund retrospectively reimburses contracted hospitals using itemised bills with a maximum 30,000 Baht ceiling for inpatients and fee-for-service for outpatients. The Fund also compensates for workers' loss of function, disability and death. Employer contributions decrease if there were fewer injuries and claims in any previous year as a result of providing safety measures in the workplace.

Firms with more than 20 workers are liable by law to participate in the Fund. It was first implemented in Bangkok in 1974 by 2,492 firms covering 272,848 workers, then gradually increased its coverage until 1985, when 1,091,318 workers in 56 provinces were covered and 13,580 firms contributed to the Fund. By 1987 there were 1.2 million workers (2.3% of the total population) covered by the Fund. In FY 1990, 1.7 million workers under the Fund spent baht 396.6 million or baht 233 per capita on medical services. This Fund had a positive balance of 1,650 million Baht (Jaroenlert 1989). The researcher is sceptical about the claim of the Fund's positive balance. Underclaiming by the injured workers is likely when employers are penalised and have to contribute more in the successive year due to bad conditions in the workplace and consequent high claims.

## *Social Security Scheme*

Parliament passed the Social Security Act in July 1990 and it was enacted in October

[15]Apart from medical benefits, civil servants enjoy other fringe benefits such as a housing benefit, children's school fees, living allowance and pension benefit.

1990. All employers and employees in establishments of more than 20 workers must contribute 1.5% of the payroll to the social security fund while the government contributes 1.5% of the payroll. The law covers four types of benefits to insured workers: medical benefits, disability, death, maternity as well as cash benefit for losing income due to illness and maternity leave. In 1991, it aimed to cover 2.2 million workers.

There was a total of 4,500 million Baht raised in the Social Security Fund. The fund allocates 2.45% out of 4.5% to medical benefits. It was decided by the Medical Committee with approval from the Social Security Committee to pay hospitals where workers registered on a capitation basis. The hospital will be paid 700 Baht per annum for one insured worker registered to look after him/her for any kind of illnesses in a year under this given capitation.

There are 134 hospitals participating with the social security fund throughout the country, seventeen of them are private hospitals. Close monitoring and evaluation is needed to acquire a data base for further policy development in order to increase efficiency and equity.

## *Private Insurance*

Twenty five out of 57 insurance companies provide voluntary personal health insurance and group insurance to the private sector and the better off who can afford the very high premiums. Insured individuals are covered by services mainly provided by private outlets. Payment for hospitals is based on fee for service followed by retrospective reimbursement from the insurance company. Coverage is quite low, in 1987, 0.2 million or 0.5% of the total population were covered by this scheme. They spent 445.2 million Baht, 1,855 Baht per capita on medical services in 1987 (Thai Government 1988).

## *Those Not Covered by Any Type of Health Insurance*

Those who are not covered by insurance have to pay user fees at public outlets. However, sliding scales have been practised for a long time as a safety valve. They also have to pay full fees at private outlets. Usually, it is more expensive to use private hospital services and people tend to choose self-prescribed drugs in the first instance for minor ailments.

User fees at public outlets are allowed by the Ministry of Finance to be retained by the hospital as their own revenue and the use of such revenue is regulated by the ministries concerned. In practice, there are two price systems within a public hospital, a full fee for those covered by any kind of medical benefit and a lower rate for those who have to pay out of their own pocket. Thus, generally speaking, there is an incentive for public hospitals to overcharge (for example, the reimbursable government employees, private insurance-covered patients, etc.) to improve the hospital's financial status and thus improve services under budget deficits. There is no empirical evidence as to whether there is overtreatment as well as overcharging which might stimulate cost escalation in these schemes. The only evidence is the two price system practised in public hospitals as cited above. Either non-profit, public or private for profit hospitals have different financial incentives to charge fully the insurance-covered patients.

The elderly, children under five and school children are also classified in non-insurance coverage groups because free services for this target population are not well implemented although it was stated in the 1980 Constitution that they should be provided with free care as described below.

The recent policy on free care for the elderly (over 60 years old) and the under fives has not yet been successfully implemented. There is no definite budget allocated for this purpose to public outlets. In practice, some are charged the fees.

Recently, a school health insurance scheme was established by the National Primary Education Board to cover all primary school children (grade 1-6) and financed through its budget (School Health Division 1989). A nominal budget per school child was allocated to

the MOPH health facilities. Formerly, they were usually provided with free services at health centres and district hospitals. Secondary and higher school children are not covered by any scheme unless their parents are covered by a scheme.

In 1987, 64.1% of the total population were not covered by any scheme. Who are they? They are poor workers in industrial sectors not covered by the WCF, poor rural peasants and urban slum dwellers without FCs although their income is just above the borderline of poverty and the self-employed with their own businesses ranging from food vending to shop keeping. How to extend insurance coverage to these groups is a challenging question for researchers and policy makers.

## Summary

The recent high economic growth rate in Thailand has been enjoyed mainly by the well-off. Although the number of absolute poor is decreasing, the income gap is widening as measured by Gini coefficients during 1975-86. Health expenditure is growing at a higher rate than the GNP growth and is projected to increase to 8.1% of GNP by the year 2000. Household direct expenditure on health is three quarters of total health expenditure (mainly for curative services). Demand for medical services is income elastic and rises as income rises whereas demand for drugs falls as income rises.

There is inequality in terms of access to (referral line) and use of health services (per capita expenditure) among different insurance beneficiaries. There is a bias towards government employees, state enterprise employees, workers under the WCF and private insurance beneficiaries as against FC and HC holders.

A 'health divide' also exists in Thailand. In looking at the different insurance schemes in Thailand, their objectives, target population, population coverage, source of finance and expenditures for 1992, 43.4% of the population are not covered by any type of scheme and responsible out of their own household budget for the costs of their health care.

Civil servants, workers under the WCF and private health insurance beneficiaries not only have secure employment status in the regulated sector but are securely protected against high medical bills. They consume a significantly higher amount of health resources.

Households not covered by any scheme have to pay out of pocket for medical bills either at public or private outlets. People engaged in the unregulated agriculture sector who are not covered by any insurance scheme are also hardly covered by the 1990 Social Security Act. An appropriate voluntary health insurance is another policy option to cover these people who are vulnerable to financial collapse due to escalating medical bills when they fall ill. Further development of the Health Card Project initiated by the Ministry of Public Health into a well established voluntary health insurance scheme must be deemed a very challenging, immediate task.

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# The Public-Private Mix in Thailand

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## Introduction

Private hospitals in Thailand have grown rapidly, particularly during the Sixth National Social and Economic Development Plan (1986-1991) when the average GDP growth was almost ten percent. Such growth has both positive and negative consequences for the health system. The general argument that it helps channelling the better-off patients from public hospitals and thus allowing more public resources to better serve the poor was contradicted by the fact that it also widens the gap of inequality. It siphons trained professionals from the public to the private sector and undermines public services borne by the entire society.

It should be pointed out that the changing public-private mix with regards to health care in Thailand has progressed too rapidly without control and inadequate planning. Three areas are of particular significance: 1) the rapidly increasing private share in service provision; 2) the rapidly changing professional mix; and 3) the increasing role of third party payers. Nonetheless, well-planned public and private health sector growth is needed in order to achieve an effective health service system whereby resources are used efficiently, quality services are provided at an affordable price and equality can be better guaranteed.

Consequently, the objectives of this paper are to review the current situation of public and private health sector and the private hospital behaviour, analyse the impact of changing public-private mix of health care, review the strength and weaknesses of regulatory mechanisms, and investigate policy issues and recommendations.

## Nature of Public-Private Mix

### *Financing*

#### *Sources of financing*

A large number of health care financing mechanisms exist in Thailand. Accurate and up-to-date information on the relative importance of these mechanisms is not always available, but it is clear that private out-of-pocket expenditures by households constitute the most important, and during much of the 1980s the fastest growing proportion of health care expenditure. Table 1 shows the trend of health expenditure during the past decade.

The significant size of out-of-pocket payments suggests that this must be the main source of revenue for private health care providers. However out-of-pocket payments do not go to private providers alone. The Ministry of Public Health recovers a significant proportion of its costs through user fees, for example Tangcharoensathien et al. (1992) estimated that on the average government hospitals recover 86-91% of material costs or 48-51% of total operating costs. Moreover, a recent small-scale study found that on the average 31% of outpatient and 42% of in-patient charges at district hospitals were met out-of-pocket (Dow et al. 1992).

The relative significance of means other than out-of-pocket payment to pay private providers is likely to be on the increase. This is due to a number of factors. The 1990 Social Security Act allows private facilities to compete with public facilities for treatment of insured persons. Payments under the Act are on a per capita basis (fixed at Baht 700 per person per year) preventing an open-ended commitment for funding private health care. However private

providers still appear to be gaining an increasing share of the market.

**Table 1** Percent sources of health care financing in 1984, 1986 and 1987 (1987 prices)

| Sources of finance | 1984 | 1986 | 1987 |
|---|---|---|---|
| Public source | 27.9 | 26.0 | 24.2 |
| MOPH | 17.4 | 15.3 | 14.1 |
| Other ministries | 6.9 | 6.5 | 6.0 |
| Public employee medical benefits | 3.6 | 4.2 | 4.1 |
| Workmen's compensation fund | 0.5 | 0.4 | 0.4 |
| State enterprise employee medical benefits | 0.8 | 0.9 | 0.8 |
| Private insurance | 0.8 | 0.7 | 0.7 |
| Foreign aid | 0.8 | 0.8 | 0.7 |
| Private household | 69.3 | 71.2 | 73.2 |
| Total: Percent | 100.0 | 100.0 | 100.0 |
| Million Baht | 53,032.9 | 62,099.9 | 67,771.3 |

**Sources:** Health Planning Division, MOPH; National Accounting; Workmen Compensation Fund, Labour Department, Ministry of Interior; The Comptroller-General's Department, Ministry of Finance; Financing health service and medical care in Thailand, 1987 report, MOPH.

Although national figures on the relative importance of different sources of funds are available, the breakdown of revenue by provider is not known. In order to understand the behaviour of these providers it would be advantageous to learn about the extent to which they depend upon alternative sources of finance. Evidence exists to suggest that some private hospitals have invested considerable funds and energies in enticing employers to have their employees registered with them under the Social Security Act (SSA), suggesting that the SSA is seen by many as an important means for increasing revenue. It is said that a small private hospital in Samut Prakan is currently built for social security workers in particular.

## *Third party payers*

Table 1 shows that there are several third party payers in Thailand ranging from the Social Security office, Workmen's Compensation Scheme; Civil Servants Medical Benefit Scheme, Health Card Scheme to private insurance companies. Table 2 explains in more detail the nature of these various schemes. The first four are public schemes undertaken by the government. Efforts are being made to coordinate different health care schemes for different groups of people or different types of illness episodes. For example, the social security scheme (SSS) covers essentially the same population as the Workmen's Compensation Scheme (WCS). The latter scheme however is supposed to only provide funding for illnesses incurred as a direct consequence of work-an employer liability scheme.

**Table 2** Summary of various medical welfare and health insurance schemes

| SCHEMES | TYPE OF INSURANCE | OBJECTIVES | TARGET POPULATIONS |
|---|---|---|---|
| Social Security Scheme (SSS) | Compulsory health insurance | Protection of the workers for illness not related to work, maternity, disability, death compensation | Workers in firms with more than 20 workers |
| Workmen's Compensation Scheme (WCS) | Compulsory insurance | Worker protection | Workers in firms with more than 20 workers |
| Civil Servant Medical Benefit | Public assistance | Fringe benefits in addition to low salaries | Government officials, employees and dependants. State enterprise employees and dependants. |
| Health Card Project | Community financing, prepayment voluntary health insurance | Community development in PHC, promotion of rational use of services via a referral line | Premium affordable households, 35% enrolment rate at the village level |
| Private Insurance | Voluntary insurance | Private personal insurance | The better-off, private employees who can afford the premium, sometimes combined with life insurance |

In the past year, during which time two schemes—the WCS and SSS—have been running side by side, the WCF has experienced a considerable increase in claims, particularly for conditions which have a more tenuous linkage with the work environment, such as lower back pain and lead poisoning (Orapin 1992). As providers under SSS are supposed to provide all care under the Baht 700 capitation, there is considerable incentive to shift the cost of care to the WCS which reimburses on a fee-for-service basis, though with a maximal ceiling of Baht 30,000 per illness episode. There has been much discussion therefore on how these two schemes can be integrated or harmonized.

The second area for debate is over the relative roles of the health card scheme and the social security scheme. The health card scheme was established ten years ago with PHC promotion as its principle objective. The scheme works on a voluntary basis although a minimum of 35% of households in the village must be involved in order to maintain its operation with considerable risk sharing. Recent studies (including for example Hongvivatana et al. 1991) have suggested that the limitation of benefits under the scheme deters many from joining and that in order to be successful the scheme should be relaunched with an emphasis upon risk sharing rather than primary health care (Tangcharoensathien 1991).

The original social security scheme planned to expand its coverage on a voluntary basis by 1994. However it is doubtful whether the Social Security Office, although having a legal mandate to operate voluntary health insurance, will have the institutional capacity particularly in the rural areas to be able to administer such a scheme. In the meantime, the Ministry of Public Health may be in a better position to provide adequate insurance coverage through the health card project. While debate over the relationship between these two schemes continues, problems of adverse selection and appropriate payment mechanisms must all be considered

and resolved before further progress can be made.

It is worth noting that in April 1992, the Parliament passed a Traffic Vehicle Liability Act which stipulated a compulsory payment of insurance premium by all the 8 million traffic vehicle owners to any private insurance company to cover the medical bills and death compensation of all traffic injuries and victims. Insurance companies will pay hospitals on a fee-for-service basis, again with a maximum ceiling of 10,000 to 50,000 Baht. Tangcharoensathien et al. (1992) estimate that quite a substantial amount of the baht 4,260 million is being channelled to hospitals (both public and private) annually.

In conclusion it could be said that there is an increasing role of third party payers while health financing will be more and more shifted towards the private sector.

## *Research on sources of funding*

Thailand has accumulated a number of household surveys which have mapped utilization and expenditure patterns in relation to health care. Those of particular note are:

(1) the Household Income and Expenditure Survey with detailed socio-economic (SES) data by the National Statistics Office (NSO);

(2) the Household Health and Welfare Survey (HWF) which focuses more on morbidity but also considers utilization patterns including the use of public and private providers;

(3) the Morbidity and Mortality Differential Survey by the Institute for Population and Social Research, Mahidol University.

While these surveys all outline general trends in public and private health care financing, they fail to provide a detailed analysis of expenditure on the private sector. A marked trend arising from these surveys is the shift of private expenditure from non-prescribed drug purchasing to medical care. As access to modern medical services has become more widespread while incomes have increased self-medication has become less common and utilization of both public and private professional health care providers become more common (Table 3).

**Table 3** Changing Shares of Household Expenditure on Health (current price)

| | 1981 | 1986 | 1988 | 1990 |
|---|---|---|---|---|
| Household monthly income | 3,378 | 3,631 | 4,106 | 5,621 |
| Household monthly expenditure | 3,374 | 3,783 | 4,161 | 5,621 |
| Expenses for medical care | 113 | 132 | 143 | 171 |
| Drugs | 36 | 35 | 31 | 36 |
| Institutional care | | 97(100) | 112(100) | 135 |
| Public | | 48(50) | 52(46) | na |
| Private | | 39(40) | 51(46) | na |
| Others | | 10(10) | 9(8) | na |

**Source:** SES 1981, 1986, 1988 and preliminary report of 1990

**Note:** Breakdown of medical service expenses in 1981 was not available. Percent in brackets.

## *Private Hospitals: Facts and Figures*

### *Profile of private health care providers in Thailand*

Data on the balance of public and private sectors in the provision of health care in Thailand suffer from problems of reliability. Even more problematic is the availability of data on private sector patients. A short discussion on the sources of these data precedes the presentation of the data themselves.

All private health care providers in Bangkok are legally bound by the 1961 Hospital Act to register with the Medical Licence Division of the Ministry of Public Health. When registering, the provider must give details of bed number, specialty, address and doctor's licence number. In theory the database held at the Medical Licence Division should be relatively complete. Unfortunately it suffers from the fact that it is not computerized and therefore cards may get lost, also the fields of specialty have not been updated since 1962 when the scheme was established. Further information about the types of owner (company, private individual, etc.) would be extremely useful.

The Health Statistics Division of the Ministry of Public Health carries out an annual Health Resources Survey based on the framework provided by the Medical Licence Division. This survey consists of two parts, one on manpower resources employed at the facilities and the other on service statistics such as number of outpatient visits, number of inpatient days and cases, and other types of health care provision (such as ANC and immunizations). The first part of the survey appears to be reasonably reliable, while data from the second part, despite the aggregated nature of the statistics, are not at all reliable. Moreover the response rate of the survey is low, covering only about 30% of the target group in the Bangkok Metropolis. Although the Ministry recognizes the importance of adequate information on private sector activities, finding the means to ensure that accurate statistics are provided is an intractable problem. Increasingly information systems set up by third party payers (such as the Social Security Office) appear to offer the best chance for gaining routine information on private hospital behaviour.

With these caveats in mind, Table 4 presents time series data on the growth of private health resources in Thailand.

**Table 4** Growth in private sector facilities and manpower, number and percent of total in 1970-1989

| | 1970 | 1978 | 1986 | 1989 |
|---|---|---|---|---|
| Hospitals | 93(36.6) | 186(29.5) | 264(27.4) | 354(31.4) |
| Beds | 2,050(5.4) | 5,842(9.1) | 8,5697(10.0) | 12,777(13.7) |
| Doctors | 236(6.6) | 687(11.1) | 892(9.6) | 2,260(17.8) |
| Nurses | 631(8.1) | 1,743(10.6) | 2,014(5.4) | 4,932(8.5) |

**Source:** Health Resources Survey, Health Statistics Division
**Note:** Percent in brackets refers to percent of total

Table 4 suggests that there has been remarkably rapid growth in private hospitals and hospital beds over the past two decades. However the MOPH's drive to increase access to public facilities, particularly rural district hospitals, has been implemented successfully and thus the overall share of private hospitals and beds has not increased so significantly.

To a certain extent the percentage of growth of private facilities does not reflect the real situation as they are largely concentrated in urban areas particularly in Bangkok. The following tables show the growth of private hospital and beds in Bangkok comparing with that of the up-country.

**Table 5** Geographical distribution of private hospitals

| Private hospitals | Bangkok | Up-country | Entire country |
|---|---|---|---|
| Number | 110(37) | 190(63) | 300(100) |
| Bed | 9,074(51) | 8,898(49) | 17,972(100) |

**Note:** Percent in brackets

**Table 6** Population bed ratio in Bangkok and up-country in 1988-1989

| | 1988 | | 1989 | |
|---|---|---|---|---|
| | Bangkok | Up-country | Bangkok | Up-country |
| Population (million) | 5.72 | 49.24 | 5.83 | 50.05 |
| Total beds | 21,685 | 66,667 | 30,978 | 69,645 |
| Pop./bed ratio | 264 | 739 | 188 | 719 |

**Table 7** Hospital occupancy rate by ownership, 1990

| Hospital under | Occupancy rate | N |
|---|---|---|
| MOPH | 98.9 | 685 |
| Ministry of Defense | 34.8 | 43 |
| Ministry of University Affairs | 79.9 | 4 |
| State enterprises | 39.7 | 12 |
| Municipality | 72.8 | 7 |
| Private ownership | 58.0 | 184 |
| Ministry of Interior | 82.2 | 5 |

**Source**: Health Resource Survey, Health Statistics Division, 1990

It can be seen that more than a third of the total number of hospitals and over half of the beds are concentrated in Bangkok (Table 5). Population per bed, however, is a crude indicator of the supply of beds. The rapid improvement of this indicator in Bangkok is largely due to the rapid growth of private hospitals (Table 6). Bed occupancy rate is a better indicator reflecting the efficient use of beds given the appropriate admission indication. The lower bed occupancy rate (58%, Table 7) indicates, to a certain extent, an excess supply of private beds. It could be said that there is an excess of beds if the presumed unnecessary admission (for example, the intravenous treatment of simple diarrhoea) is true.

A detailed investigation of private hospitals by type of specialty has only been carried out in Bangkok. There does not appear to be any clear predominance of one type of specialty while internal medicine, ENT, paediatrics, obstetrics and gynaecology all appearing to be commonly listed specialties. It is noticeable, however, that there is a clear relationship between hospital size and specialty. Those hospitals of 100 or more beds are all generalists.

The majority of private hospitals are small with a median bed number of 26 to 30. Table 8 indicates that only 68 out of the total 300 hospitals throughout the country are of minimum 100-bed capacity.

**Table 8** Private hospital beds by region

| | Bangkok | Peripheral Bangkok | Central | North | North East | South | Outside Bangkok | Entire country |
|---|---|---|---|---|---|---|---|---|
| Bed | | | | | | | | |
| means | 81 | 68 | 38 | 54 | 41 | 39 | 47 | 60 |
| median | 28 | 30 | 26 | 30 | 30 | 30 | 30 | 30 |
| mode | 10 | 26 | 10 | 10 | 30 | 50 | 10 | 10 |
| maximum | 750 | 250 | 175 | 350 | 150 | 196 | 350 | 750 |
| minimum | 2 | 10 | 4 | 9 | 10 | 9 | 4 | 2 |
| Hospitals | 110 | 30 | 55 | 41 | 31 | 33 | 190 | 300 |
| Total beds | 9,074 | 2,046 | 2,070 | 2,215 | 1,269 | 1,298 | 8,898 | 17,972 |
| >100 beds | 35 | 11 | 6 | 9 | 4 | 3 | 33 | 68 |

**Source:** Medical Licence Division, 1992

Non-profit private facilities in Thailand play a relatively limited role. Of the more than one hundred hospitals in Bangkok only five are owned by non-profit organizations The pattern is unlikely to be much different in other parts of Thailand. However, these facilities tend to operate on a relatively commercial basis ensuring that user fees cover virtually all costs. Most non-profit private facilities have been established for some years. The recent growth in private hospitals and bed numbers has taken place almost entirely in the private-for-profit sector.

A further distinction needs to be made between facilities owned by individuals or small companies and those owned by publicly limited companies (whose shares can be bought and sold freely on the stock exchange). Seven medical care companies are now quoted on the Bangkok stock exchange and although these own only a small share of the total number of hospitals, they tend to be large hospitals with a significant share of the market.

Under the Workmen's Compensation Scheme, for example, publicly limited companies account for 12.5% of inpatient claims and 8.8% of outpatient claims. How these providers

behave in comparison to those of other facilities is currently unclear, but on an a priori basis one may expect a stronger emphasis upon profitability and a lesser consideration for professional ethics in the management of the facility.

In addition to the private hospital facilities described above, numerous private clinics exist in Thailand. A recent estimate suggested that there are over two thousand in Bangkok alone. Many of these clinics are run by government doctors to supplement their public sector salary. Little investigation of these providers has taken place, but household utilization surveys show them to be extremely popular sources of outpatient care, being convenient both in terms of opening hours and location. Almost all private clinics provide general consultations with quite a small number of specialty.

Finally a wide range of health care providers exist in Thailand's non-formal health care sector; these providers include drug stores, monks dispensing herbal remedies, acupuncturists and other types of folk healers. Household surveys suggest that such providers are used largely by the poorer people. For example in Phitsanulok, Pannarunothai (1992) found that 29.1% of people in the lowest income domicile used drug store services when ill compared to only 18.1% in the highest income ones. This is confirmed by Tangcharoensathien (1990) for an urban slum in Chiangmai where 31% of the population were found to use drug stores as the most common resort. In addition this study found that 24% of the sample used other sources of care, such as household remedies, essential drugs available at small shops or community drug fund, temples and traditional healers.

Evidence from all household surveys suggests that traditional providers' share of the market diminishes with increasing income and more exposure of the people to Western culture. The 1986 survey of Health, Welfare and Use of Traditional Medicine (NSO 1986) found that of those who seek medical care (excluding drug stores) just 0.2% will turn to a priest or exorcist and 0.9% to a traditional healer.

Although drug stores may have lost some customers to outlets staffed by health professionals, they are still widespread. There are more than two thousand private pharmacies in Bangkok licensed to sell dangerous and special controlled drugs (see Table 9). Many shops selling general household commodities also sell drugs over the counter.

**Table 9** Number of private pharmacies by types and distribution in 1992

| | Type 1 | Type 2 | Type 3 | Type 4 |
|---|---|---|---|---|
| Bangkok | 2,123 | 925 | 39 | 459 |
| Up-country | 1,743 | 4,644 | 156 | 1,999 |

**Source:** Food and Drug Administration, 1992

**Note:** Type 1 licensed to sell modern drugs
Type 2 licensed to sell only modern packaged drugs other than dangerous or specially controlled drugs
Type 3 licensed to sell veterinary drugs
Type 4 licensed to sell traditional drugs

At the moment referral mechanisms between public and private facilities do not exist. An ongoing operational research project in Ayutthaya province found a much higher utilization rate for private clinics (estimated at about 1.7 contacts per person per year for curative care) compared to all public facilities (on the average 0.667 contacts per person per year) (Ayutthaya Research Project Team 1992). The contrast was not so great for preventive and promotive services whereby both public and private providers offered a total of about 0.12

contacts per person per year. The extensive reliance upon private primary providers as particularly found in urban and peri-urban areas motivated the research team to think about developing a referral channel between private clinics and government health services. Discussions on this are currently underway in the experience area.

## *Professional mix*

The number of doctors working in the private sector has steadily increased over the years. The figure in Table 4 for doctors represents 'full-time doctors' while many public physicians work after-hours in the private sector to supplement their income. The substantial amount of moon-lighting hours among public physicians is clearly shown in Table 10. The income differential between public and private doctors are also great as shown in Table 11.

**Table 10** Weekly hours spent for services in and out of office hours by doctors in different sectors

| | Teaching* | MOPH | Private Hospital | Private Clinic | Average |
|---|---|---|---|---|---|
| Main job | 51.7(74) | 58.6(70) | 47.4(65) | 41.5(73) | 55.3(70) |
| Second job | 18.0(26) | 25.6(30) | 17.0(35) | 15.0(27) | 23.7(30) |
| Total | 69.7 (100) | 84.2(100) | 64.4(100) | 56.5(100) | 79.0(100) |

**Source:** Chunharas et al. 1990
**Note:** *under the Ministry of University Affairs.
Percent in brackets.

**Table 11** Monthly income differentials between public and private physicians

| | Teaching* | MOPH | Private Hospital | Private Clinic | Average |
|---|---|---|---|---|---|
| Main job | 14,002 | 11,652 | 43,302 | 81,020 | 15,534 |
| Second job | 20,426 | 23,467 | 23,574 | 15,205 | 22,585 |
| Total | 27,392 | 29,377 | 51,583 | 84,749 | 84,749 |

**Source:** Chunharas et al. 1990
**Note:** *under the Ministry of University Affairs.

The dynamic of "push and pull" in between the two sectors explains the rapidly changing health manpower mix. The rapid private growth, on the pull side, along with the great income difference between the two sectors is one of the major "brain drain" factors among doctors and nurses in particular. For public hospitals, on the "push" side, doctors workload is much higher while being paid at the same level as teachers and other civil services.

It is believed that the piecemeal approach to the problem by giving minute incentives to health professionals cannot halt this drain. One of the major obstacles is that the Ministry of Finance does not allow public hospitals to use their revenue flexibly. The brain drain problem therefore has detrimental effects upon public hospital services.

## *Characteristics of private sector users*

The Ministry of Public Health is particularly concerned about equity implications of private sector growth; it is anxious that a two-tier health care system providing private care for the wealthy and public services for the poor does not really develop. Previous health and welfare surveys have provided aggregate data on private sector utilization, by level of education and employment status.

Data on employment status shows that those in better paid occupations, such as professional and administrative staff and clerical and sales staff, tend to use private hospital and doctor services much more than those in poorer paid groups such as farmers and miners or the unemployed (Table 12). Health and welfare survey data does not collect data on income, however. More recent smaller scale survey work has begun to explore this area.

**Table 12** Employment status and percent of health service utilization, 1986

| | Self treatment | Priest/ exorcist | Doctor | Traditional medicine | Private hospital | Public hospital | Other | No treat-ment | Total |
|---|---|---|---|---|---|---|---|---|---|
| Professional & admin | 33.3 | 0.0 | 25.2 | 0.2 | 10.8 | 19.3 | 0.3 | 10.9 | 100 |
| Clerical & sales | 45.5 | 0.1 | 18.6 | 0.3 | 8.9 | 14.1 | 0.5 | 12.0 | 100 |
| Farmers & miners | 57.8 | 0.1 | 6.7 | 0.5 | 1.1 | 19.4 | 0.5 | 13.8 | 100 |
| Craftsmen & labourer | 53.9 | 0.0 | 13.8 | 0.2 | 4.5 | 16.1 | 1.0 | 10.5 | 100 |
| Service workers | 46.3 | 0.1 | 15.0 | 0.1 | 7.1 | 16.5 | 0.4 | 14.4 | 100 |

**Source:** Health and Welfare Survey, 1986

Pannarunothai (1992), in a survey of 1000 households in a provincial town (Phitsanulok), found that only about 16% of the population used public services when ill, another 16% decided not to treat the illness, 25% sought care from a drug store, another 25% from a private clinic and 13% from a private hospital. In terms of hospitalization, 64% went to the private sector and 32% to the public (for the remaining 4% as their income is not known the related data are not included in the table). The mean income of patients using private sector facilities for hospitalization is 207,000 per annum compared with 102,000 per annum for patients in the public sector. It is apparent that already in Phitsanulok income and socio-economic characteristics significantly affect access to health care.

Previous national household surveys have not inquired about peoples' insurance status, however the recently completed health and welfare survey does include one question on this.

Analysis of the data is ongoing. Smaller scale surveys have addressed this question, some of the results are contained in Table 13.

**Table 13** Insurance coverage from three household surveys

| | Rural* | Urban slum** | General urban*** |
|---|---|---|---|
| Free medical care | 17.2 | 20.0 | 2.4 |
| Government medical benefit | 12.2 | 15.0 | - |
| Other employer benefit | 5.1 | 10.0 | 35.8 |
| Private insurance | 0.4 | - | 2.2 |
| Multiple schemes | 1.6 | 6.0 | - |
| Other | 6.5 | 6.0 | 2.9 |
| None | 57.0 | 43.0 | 48.3 |
| Sample size (individuals) | 4,870 | 721 | 4,425 |

**Source:** *Hongvivatana 1990
**Tangcharoensathien 1990
***Pannarunothai 1992

The interesting question is how insurance coverage affects utilization behaviour. It is difficult to generalize about this question as different insurance schemes have different incentives and regulations attached to them.

## *Payment*

Since the diversity of third party payers and providers suggest that there exists a number of different payment mechanisms, these mechanisms as well as related rules and regulations are summarized in Table 14.

Under the social security act it was decided to adopt a capitation based payment system in order to help contain costs in the future. However due to limited administrative capacity it was decided that the employer would select which hospital his employees were to be registered with. Thus all employees at one work site will be registered with the same provider regardless of their residential address. This has in turn resulted in a remarkably low usage rate (Nittayaramphong 1991) which suggests that both public and private hospitals are making a profit under the fund and that workers are receiving inadequate care from their main contractor hospital. A pilot scheme offering the employee choices of provider is already in operation and it is hoped to expand this to the rest of the country as soon as possible. In 1993, another 18 provinces will be implementing the workers free choice of hospital.

Payment mechanism also has a strong influence on private hospital charges. When patients under the civil servant medical benefit scheme are faced with a private hospital bill (refund later with substantial amount of co-payment), the length of stay is significantly shorter than when staying at public hospital facing with no bills.

Bennett et al. (1992), in with the collaboration of the Medical Council set up an expert committee for a medical records audit, found that the treatment quality is acceptable for patients under the WCS but charges are higher than those of public hospitals.

**Table 14** Payment mechanisms and their modalities

| Third party payer/source of funds. | Payment Mechanism | Payment Modality |
|---|---|---|
| Out-of-pocket | Fee-for-service | Pay at the point according to the fee schedule in public and private hospital. |
| Private insurance | Fee-for-service | Minimal co-payment if beyond the ceiling.<br>Free access to health providers. |
| Health card | Global budget - seventy percent of premiums goes to compensate providers, with set formula for distribution between different levels of health service system. | Maximum eight illness episodes per annum and Baht 2000 per episode.<br>Care must be sought from government facilities following strict referral system. |
| Social Security | Baht 700 capitation payment | System of main contractors with sub and supra contractors. Certain expensive procedures and emergencies covered on fee-for-service, set rate, reimbursement from special fund. |
| Workmen's Compensation Fund | Fee-for-service, reimbursement with ceiling of Baht 30,000. | Free choice of health care provider. |
| Civil Servants' Medical Benefit Scheme. | Mixture of fee for service reimbursement with limits by item in the private sector and full direct payment in public sector. | All outpatient services must be sought in public sector.<br>Inpatient services can be sought in public or private but only the expenses of public care will be fully met. |

## *Private Hospitals and High Technology Equipment*

In addition to hospital and clinic facilities in Thailand, private providers offering special diagnostic services have recently become widespread. In particular private sector use of Computerised Tomographic scanners, Magnetic Resonance Imaging (MRI) and Extracorporeal Shock Wave Lithotripter (ESWL) has grown rapidly and become a matter of serious concern.

Some expensive high-tech equipment are installed in private hospitals, but special diagnostic centres which can be utilized by both public and private providers without their own facilities are also common.

The current situation of non-price competition of private hospitals has brought about procurement of high cost medical technologies such as CT scanners as shown in Table 15. The outbalance of 10 scanners per million population in Bangkok reflect a bizarre health

system. So far there is no effective mechanism to oversee and control the procurement and distribution of medical technologies.

**Table 15** Computerized tomographic scanners per million population ratio by country, 1988

| Country | CT per million population |
|---|---|
| Japan | 29.2 |
| United States | 14.7 |
| Australia | 8.6 |
| West Germany | 7.3 |
| Switzerland | 6.2 |
| Sweden | 5.6 |
| Austria | 4.0 |
| The Netherlands | 3.1 |
| France | 2.8 |
| United Kingdom | 2.3 |
| Thailand (1992) | 2.0 |
| Bangkok (1992) | 10.0 |

**Source:** Modified from National Health Technology Advisory Panel 1988, Australia.

It is sometimes argued that the government indirectly promotes the use of high-tech equipment through the Board of Investment (BOI) by exempting import duties for such equipment, while the Ministry of Finance customs policy stipulated that all X-ray equipment are totally duty exempted.

The first ESWL in Thailand was installed at a publicly limited company-owned hospital in Bangkok in 1987. As of June 1991 there were a total of 16 ESWLs in Thailand, eleven of these were in public hospitals, although some were privately owned and operated. For MRIs, as of June 1991 there were a total of five machines all of which were owned and operated by the private sector. Public sector facilities also try to procure such machines but funding for these items is limited.

## Impact of Changing Public-Private Mix

In this chapter, the authors summarise major findings from other chapters and analyse the potential consequences of the rapid changing public/private mix.

## *Factors Influencing Private Hospital Growth*

### *Basic factors*

- excess demand for medical care in public hospitals, long queues
- rapid economic growth, but worsening income distribution
- increased demand for private care among high income households
- BOI policy to promote private hospitals
- taxation policy allowing customs exemption of medical equipment
- laissez-faire economy with very few government interventions
- increasing role of third party payers
- weak regulatory function
- privatisation policy in various plans but no realistic course of actions
- very low salaried public doctors

### *Supporting Factors*

- The most important is the CSMBS policy reforms enabling more resources to be channelled into the private sector when civil servants are allow to have access private outpatient care.
- The SSA directly stimulates private growth directly through financing, while public hospitals cannot compete with private hospitals on quality of care due to bureaucratic inertia.
- Less control by financing agencies in particular the Social Security Office and the Civil Servant Medical Benefit Scheme.
- The new Traffic Vehicle Liability Act will channel more resources into private hospitals.

## *Impacts on Public-Private Mix*

### *Efficiency*

- Underutilization capacity of high cost medical technologies due to oversupply thus encouraging unnecessary use and abuse of technologies.
- Health care market cannot function freely through the general economic theory of demand and supply. The oversupply of beds and technologies leads to unnecessary admissions, prescriptions and all other supplier induced demand phenomena.

- Creating false demand through propaganda of high cost medical technologies.

### *Cost*

- Rapid spiral increase of health care cost through the increasing role of third party payers. Both patients and doctors have no incentives to contain costs.

### *Equity*

The poor who are users of public hospitals are the stake holders of this phenomenon through two mechanisms:

- Changing manpower mix weakens the public services. One can imagine the quality of surgical services when four out of six surgeons in a provincial hospitals resign to join private hospitals.

- Changing financial mix, in particular the CSMBS policy reforms allowing more budget from the Ministry of Finance to be channelled to private hospitals will seriously affect the financing of public services.

### *Medical ethics*

- Gradual deterioration of medical ethics when the doctor-patient relationship becomes a doctor-client relationship. Medical law suits will gradually increase.

- Marketing strategies and sales promotions through advertising and creating false demand destroys medical ethics.

- Unnecessary admission with weak clinical indication, technology abuse through commissions when prescribe investigations strongly decays the medical ethics and in turn increase unnecessary health care cost.

## The Government's Role in Determining the Public-Private Mix

This following discussion has three main objectives: first to present a conceptual framework for analysing the pattern of regulatory powers and agents, secondly to use this framework to describe the existing pattern in Thailand, in terms of actors, statutory powers and non-statutory powers and finally to discuss the strengths and weaknesses of the existing situation.

### *The Framework*

The term "regulation" is used here in a very broad manner. It does not suggest legislatory controls alone. Instead it is referred to a range of carrot and stick methods influencing the behaviour of private providers. Three principle objects of regulation are identified:

1) quality of care: including physical infrastructure, training of medical personnel and the clinical quality of care provided;

2) quantity and distribution of care: including the number and location of providers and the quantity of services that they provide; this category also cover problems related to supplier induced demand and the provision of excessive amounts of high technology care or investigations; and,

3) prices: this may take the form of direct control of individual prices or more subtle attempts to control price levels through the payment mechanism.

Although these three different objects of regulation can be conceptually separated, in practice they are extremely closely connected. For example, attempts to control the price at which a service is provided may lead the provider to compromise on the quality of care or over-provide services. Alternatively, other things being equal, quotas on the quality of care provided will lead to price increases. In addition it should be recognized that there are a number of different aspects to quality of care such as clinical quality, quality of "hotel" aspects of care, quality of communication with patient etc.

A number of different agents may be involved in the regulatory process. These agents include:

- the Government: although the Ministry of Public Health is likely to take principal responsibility for the regulation of private health care providers, a number of other ministries can potentially influence private sector behaviour;

- financing Agents: this includes insurance agencies and organizations operating medical benefit schemes;

- producers: most professions have some degree of self-regulation, medical and nursing councils usually play a key role in the health care sector; and,

- consumers: both as individuals and as groups, through formal representation such as consumer associations and through informal means such as letters to the press.

## *Existing Regulatory Pattern*

In Table 16, the current pattern of regulatory agents and powers in Thailand are presented. The presentation reflects a division of responsibilities among the agents. The Government, and the MOPH in particular, is responsible for defining the framework within which the private sector works, including the number and location of providers, the qualifications they possess and the type of facilities they operate. Financing agents are key in that they possess the necessary information for identifying cases where private (and public) providers may be abusing their power. This is relevant to controlling the quality, quantity and pricing of health care services.

In Thailand, which has a relatively unregulated, laissez-faire economy, financing agents and consumers are the only two groups which can influence pricing. Except in certain special circumstances, consumers' influence is likely to be minimal thus leaving the bulk of this responsibility to the financing agents. Professional bodies work more at the micro level, investigating specific cases of malpractice. Consumers assist all these agents in exercising their authority by signalling where and when they feel something to be amiss with the system.

**Table 16** The current pattern of regulatory agents and powers in Thailand

| | GOVERNMENT | FINANCING AGENTS | PRODUCERS (PROFESSIONAL BODIES) | CONSUMERS |
|---|---|---|---|---|
| CONTROL OVER QUALITY | Medical Licence Division (MLD) - 1961 Hospitals Act. Inspection of quality of infrastructure. | SSO - dependent on development of information system.<br>WCF - occasional investigation of cases.<br>CSMBS - decree mentions black list of private hospitals but rarely operated.<br>Private insurance - none. | Medical Council responsible for reviewing malpractice complaints and licensing physicians. Medical council accredits all training curricula. Nursing council responsible for licensing nurses and accrediting nursing college curricula. | Occasional press articles on malpractice. Potential to "vote with feet" if quality of care is unacceptable. |
| CONTROL OVER QUANTITY & DISTRIBUTION | MLD - Licensing of hospitals & clinics, but no set criteria for when needed.<br>BOI could potentially affect distribution of facilities through select use of tax concessions.<br>Customs dept. could use import tax rate to affect importation of high technology equipment. | SSO - potential control over quantity, but depends on development of HIS.<br>WCF - None<br>CSMBS - None<br>Private insurance - none. | Medical Council would be responsible for investigating allegations of supplier induced demand, but has a passive approach investigating cases brought to the Council. | |
| CONTROL OVER PRICE | None | SSO - capitation fee for routine care. None for emergency and maternity.<br>WCF - occasional investigation of expensive cases and ceiling on reimbursement.<br>CSMBS - ceiling on total reimbursement and reimbursement for specific charges.<br>Private insurance - ceiling on total reimbursement and by category. | None. | Occasional press articles alleging over-charging. Potential to "vote with feet" if price is too high through early discharge or transfer to public hospital. |

**Table 17** Strengths and weaknesses in regulation in Thailand.

| STRENGTHS | WEAKNESSES |
|---|---|
| **I. GOVERNMENT AGENTS** | |
| 1. Potential control over location of new facilities through MOPH licensing. | Mechanism is not used discriminately. MLD has passive approach awaiting cases brought into the office. Active surveillance is limited. |
| 2. Potential influence over location of new facilities through BOI tax concessions. | Mechanism is not used discriminately. |
| 3. Potential influence over the importation of high technology equipment through selective use of import taxes. | Irrational import tax structure eg. rates of 0% on import of CT scanners. |
| 4. Potential for MOPH and Professional bodies to accredit private hospitals based on quality of care rather than infrastructure. | Has never been implemented. |
| **II. FINANCING AGENTS** | |
| 5. All financing agents have potential authority to review quality of care provided and check that services were really needed before paying bills. | This authority is currently being used to a limited extent:<br>**SSO** review is dependent on the HIS which is not yet implemented. Emergency and maternity care will not be covered by the HIS.<br>**WCF** review cases, but in an ad hoc manner.<br>**CSMBS** and **private insurance** do not exercise their authority at all.<br>In general there is limited capacity in financing agencies to review quality of care. |
| 6. All financing agents have some mechanism for ensuring that their reimbursement levels are not too high. | All financing agents allow considerable co-payment by the patient, therefore reimbursement may be limited but total charge is not and the patient bears the cost. |
| **III. Professional Bodies** | |
| 7. Professional bodies have legal responsibility to investigate and punish in cases of malpractice. | The extent to which this authority is used is limited as a passive approach is adopted.<br>The positive promotion of ethical conduct is limited.<br>Financial motivation in private practice is strong. |

| STRENGTHS | WEAKNESSES |
|---|---|
| **IV. Consumers** | |
| 8. Occasional press articles signal popular concern with quality and price of care in the private sector. | Lack of formal mechanism and body through which popular concern can be voiced. |
| 9. Consumers can select providers which they believe to offer a high quality, reasonably priced service. | Currently employees under SSA cannot currently choose provider thus being denied their right to "vote with their feet". However there is a good prospect for implementing SS worker choice in 10 provinces in FY 1993. Virtually no information is given to consumers concerning price and quality to help them choose their provider rationally. |

### *Strengths and Weaknesses*

It is possible to deduce from the previous table a number of strengths and weaknesses of the regulatory structure in Thailand. These are presented in Table 17 by each regulatory agent. The strengths identified in this table reflect the fact that the legal framework for effective regulation is largely in place. However the legal powers granted to the various agents have never been fully exercised. Why is this the case? Firstly the problems in the current situation relate partly to institutional inertia. The Medical Institution Act was implemented in 1961 when there were no private for-profit hospitals in Thailand. The way in which the Medical Licence Division, responsible for implementing the Act, operates has not changed substantially since then even though extraordinarily rapid private sector growth has taken place. Secondly, there appears to be an inefficiency or limited capacity of the responsible agencies. Shortages of skilled manpower and computer facilities may impede the regulatory process. This limited capacity is particularly apparent in financing agencies. Neither the CSMBS nor private insurance agencies ever attempt any review of the care they are funding. Vested interests may also play a part in explaining the lack of bite of regulatory powers. Finally, for effective implementation of existing powers cross-departmental and cross-ministry coordination is required. Too often there are inadequate mechanisms, formal or informal, to ensure that this coordination takes place.

## The Way Forward: Future Policies and Research

Other chapters in this book review how the private sector has grown and the factors facilitating this growth, the evidence available on the behaviour of the private sector and the current situation in terms of management of the private sector. This chapter concludes by following a similar pattern; it summarizes the situation and problems already defined and then discusses possible policy measures to tackle the prevailing problems and key areas of research.

### *Private Sector Growth*

#### *Problems*

Extraordinarily rapid private sector growth has been witnessed during the past decade in Thailand. There is no evidence to suggest that this rate of growth is likely to diminish although it is probable that the new growth areas will be urban areas outside Bangkok. The

recent growth has been entirely unplanned. Indeed there are no plans which state what an appropriate level of private sector growth might be and where this growth should take place. Although the MOPH and other concerned organizations have potential instruments to influence the rate of growth (for example MLD licensing of private facilities) these tools have not been used in any purposeful way and the criteria for whether a facility should be licensed or not are extremely loose. In addition other government departments such as BOI and the Customs department have provided substantial financial incentives for private sector growth.

## Policies

There is clearly a need for greater collaborative planning. Private sector growth patterns should be incorporated into public sector plans and the implications of private sector growth on public sector operations thoroughly examined. In order to support these plans the MLD should develop a tight set of criteria to be met by new for which hospitals before being be given a license to operate. Finally discussions need to be held with BOI and the Customs department in order to prevent inappropriate government financial support to private care or private providers who really do not need this support. In this context high rates of duty should be imposed on all high technology equipment which the Ministry of Public Health feels unnecessarily inappropriate given the prevailing levels of health care in Thailand. Further, BOI support to more private hospitals in Bangkok should be discouraged or totally cancelled.

### *Research*

In order to assist with the development of public sector infrastructure and manpower plans, further information about private sector growth patterns is needed. For instance, at what rate is the private sector growing, how does this vary across the country and between different sized facilities? What are future rates of growth anticipated to look like?

## *Private Sector Behaviour*

### *Problems*

The problems resulting from private sector behaviour can be categorized in reference to three major issues: efficiency, equity and quality. Under efficiency, the principal problems observed were that of over-charging for services, false demand created by the provider in order to boost profits, non-price competition and the consequent problems of cost containment. In particular the problems of over-charging, the accumulation of high technology equipment and cost containment were felt to be particularly acute in Thailand. The most pressing concern in terms of equity is that of brain drain. In the longer term there is a possibility that political support for the public sector will be limited and many types of resources will further be sucked from the public into the private sector. Finally the data available on quality of care suggests that at the moment this is not a matter of concern in the private sector, however this situation might change rapidly and should be closely monitored.

### *Policies*

Policies are often being formulated to tackle problems of quality and efficiency simultaneously. Further recommendations include the following. First, routine records kept by the various financing agencies should be computerized and there should be regular monitoring of indicators such as average length of stay, average charge per case, average

charge per inpatient day etc.

Such overview processes should be supported by quality assurance mechanisms such as medical audit and peer review. This task would be the responsibility of the Thai Medical Council.

The current Health Resources Survey carried out by the Health Statistics Division of the Ministry of Public Health should be strengthened. Collaboration should be sought with the MLD to ensure that the list of hospitals to which the survey form is sent is up-to-date and that a high response rate is achieved. If the answers provided by the private hospitals seem implausible (this is commonly the case for throughput measures) then further follow up should be undertaken.

Ways in which to slow the rate of private sector accumulation of high technology equipment should be investigated. There is clearly a need to do this in terms both of current spending on capital items and the danger that these items will generate higher recurrent costs in the future. Unfortunately an appropriate solution to this problem is not clear as attempted in other countries, such as Certificate of Need legislation, have not been entirely successful.

Ultimately the most hopeful route towards cost containment appears to be through the authority exerted by financing agents. The integration of some of the many cost containment schemes would considerably facilitate attempts by government to control costs.

Public sector salaries and incentive payments should be increased so that the total income of physicians working in the public and private sectors is more comparable.

## *Research*

Although using insurance funds proved to be a cost-effective and rapid way of getting an overview of private sector behaviour, it also has certain shortcomings. Firstly, the results relate not solely to public/private sector differences but also to the nature of the scheme being investigated. For example the different payment mechanisms adopted by the various schemes result in different modes of behaviour and it is difficult to separate this effect out from that of hospital ownership. Secondly, the insured persons examined constituted only part of a hospital's workload. No indication is given of what proportion of the workload these patients formed nor whether they were treated in the same way as other patients. There is thus a need to carry out a facility based study of private hospital behaviour. Such a study could investigate the various sources of revenue for a particular hospital, how different payment mechanisms affect the behaviour of a hospital, how cream skimming takes place etc.

There are a wide variety of private providers in Thailand. On an a priori basis one would expect not-for-profit providers to behave more similarly to government facilities than other private providers. Quite what role not-for-profits play in the health care sector is currently unclear. Although the number of facilities is small, bed numbers tend to be high. A separate study examining the behaviour of not-for-profits and making recommendations on their future role is therefore desirable.

The integration of health insurance schemes was seen as a potential means of improving control over private providers. However the logistics for integrating such schemes with their diverse set of coverage populations, payment mechanisms and benefits offered are far from clear. There is considerable scope for research in this area.

Human resources for health are currently a key issue in the public/private mix. A number of policies are now being pursued in order to reduce the income differential between public and private sectors. These changes should be closely monitored so that an appropriate remuneration policy is finally achieved. One study has already been carried out by the Thai Medical Council on physician incomes but this is probably not accurate enough to serve as baseline data against which policies can be evaluated and urgently needs to be supplemented by further research.

No proper cost-effectiveness analyses of high-technology equipment in Thailand have yet taken place. Such studies would contribute to the MOPH development of a rational policy on the control of capital accumulation.

## *Managing the Private Sector*

### *Problems*

The principal problems in terms of the agents involved in regulating private sector behaviour appear to be the lack of coordination and collaboration among the concerned agencies such as MOPH, BOI, the Customs department, the Health insurance department, etc. and secondly the low capacity level of many financing agencies. This low capacity is primarily one of lack of skilled manpower as well as lack of capital equipment such as computers. Even if appropriate information systems were in place there may be problems in interpreting the data coming from such systems.

### *Policies*

Coordination among all concerned agencies should be improved. Given the large amount of pressing work in the area of the public/private mix an inter-departmental committee should be established. Whether this committee continued to operate over the mid/long term would depend largely on whether there still appeared to be a need for it.

The capacity of financing agencies needs to be increased. The type of assistance required varies among agencies. Some require more computer technology, others a larger complement of personnel. Training courses to help personnel interpret health information system data may be appropriate. In organizing such of training, private sector insurance companies should not be forgotten.

Some of the regulatory measures likely to be implemented may require specialist skills. For example, effective regulation of capital accumulation would require expertise in technology assessment. A stronger skill base in such areas needs to be built up in Thailand, both in the MOPH and within universities.

In terms of developing organizational structures for managing the private sector there are perhaps two critical barriers. These are the strong inertia in many government departments and the existence of powerful vested interests which may block reform attempts. In view of these obstacles, attempts at change will have to be both persistent and persuasive.

### *Research*

The possibility of consumers disciplining the market through exercising their rights to seek health care from other providers is one significant control mechanism. In order for consumers to be able to do this effectively they must be able to judge the quality of care that they receive. It is unlikely therefore that consumers could ever be effective over a large range of health care services. However, for services which are used on a regular basis or about which consumers know a considerable amount there may be some potential to 'make the market work'. Research investigating the criteria by which consumers judge health care, the characteristics which they look for in a health care provider and how much they know about different types of health care, would therefore be useful.

## Conclusion

The list of potential policy interventions and key areas for future research presented above are not in any order of priority. It is felt that the most pressing problems are concerned with the various financing agents and the Government. Measures to strengthen both the licensing of facilities and the monitoring of care provided under the insurance and medical benefit schemes are of the utmost priority. In addition rationalizing the financial concessions provided by BOI

and the import tax structure would appear to be relatively effective, low cost areas of intervention and thus would save the Government resources. The other policy directions discussed here certainly deserve attention while many could be left to the mid/long term consideration.

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# Impacts of the Growing Private Sector on the Development of Human Resources for Health in Thailand

**Somsak Chunharas**

The recent economic growth of the country has brought about several untoward effects on overall socio-economic development efforts. The rapidly expanding number of private health care facilities has had an unfavourable impact on human resources in health care. This is understandable as human resources constitute the crucial component in health care delivery systems. In the public sector in Thailand the proportion of budget spent on salaries of different types of health personnel is as high as 50% of the total annual budget of the health sector. Any section of the service delivery system that wishes to provide good quality care seeks to recruit and support a good corps of human resources. Moreover, the way services are provided in the private sector is different from that in the public sector for special reasons and this influences practice standards in the public sector. If we look in greater detail we find three areas of major impact on the health development efforts of the country as a result of the growing private sector.

## Balance of Human Resources for Health

During the 1960s and 1970s Thailand suffered a great loss of health personnel especially physicians and nurses due to growing job opportunities available in the developed world, especially the United States. The government then tried to maintain the medical graduates in the country by initiating a period of compulsory service of three years after graduation. This began in 1970 but a large portion of the first few batches of medical graduates chose to refund their fellowships plus compensation and left for the developed world. The situation improved in the early 1970s and more newly graduated physicians were assigned to work in rural areas where doctors were needed most.

In 1976 the government strengthened district health facilities by upgrading prior health centres into district hospitals which are currently known as community hospitals. A larger budget was made available and health professionals other than doctors were also sent to work in these remote rural areas. This has improved the ratio of physicians per population from 1:7,502 in 1977 to 1:4,500 in 1990. The ratio of nurses per number of the population also improved. Most of these health personnel worked for the Ministry of Public Health which owns the majority of hospital beds in the rural areas.

For awhile the health authorities in Thailand felt somewhat relieved at the gradually improving situation of the rural health service. The number of doctors at the district level increased from 513 in 1979 to 1570 in 1989. At the same time there were more medical graduates who, upon completion of their compulsory service, went into specialty training and then worked in large general and regional hospitals in cities outside of Bangkok. However this euphoric phase was not long lasting as the country's economy started to grow at a rapid rate. The Ministry of Public Health took note of a considerable drop out of doctors from rural health facilities. This became particularly serious with specialists in general and regional hospitals where although the total number of doctors might be great, when broken down by each specialty the numbers were not reassuring. A drop-out of only a few specialists in certain specialties might result in discontinuation or interruption of service availability. The remaining doctors had to shoulder a higher work-load and became exhausted as well as demoralised

when compared to their colleagues working in the private sector. When the situation was systematically assessed it was found to be far worse than expected.

About 30% of those specialists trained and obliged to go back and work in the rural area opted out from the system. Hospitals in different regions of the country were almost equally affected. When the type of specialists mostly affected was considered it was found that the majority were surgeons. This gave the health authorities some indication that the reasons for such drop-out might not be a straightforward consequence of the growing economy leading to rapid expansion of the private sector which then became more attractive to physicians and thus many of them left the rural areas to work with private health facilities. Other influencing factors needed to be taken into consideration.

**Table 1** Attrition of Specialists by Specialty, 1986-1990

| Specialty | Produced | Drop-out | |
|---|---|---|---|
| | | Number | Percent |
| Surgery | 93 | 60 | 53.8 |
| Orthopaedics | 75 | 39 | 53.8 |
| Urology | 17 | 6 | 35.3 |
| Plastic surgery | 20 | 2 | 10.0 |
| Neurosurgery | 21 | 8 | 38.1 |
| Medicine | 119 | 67 | 56.3 |
| Dermatology | 34 | 15 | 44.1 |
| Paediatrics | 118 | 60 | 50.8 |
| Obstetric & Gynaecology | 10 | 42 | 40.0 |
| Ophthalmology | 61 | 21 | 34.4 |
| Otolaryngology | 52 | 12 | 23.1 |
| Anaesthesiology | 35 | 9 | 25.7 |
| Radiology | 34 | 13 | 38.2 |

The Ministry of Public Health launched a quick research study to identify the underlying reasons why doctors especially specialists, were dropping out from its medical and health care delivery system and found a number of crucial factors.

## *Economic*

This was the most commonly cited reason for leaving public hospitals in the rural areas. One of the reasons behind this is that the income of physicians working in private hospitals was much higher than that of those working in public hospitals. If public hospital doctors wanted to earn more money they had to work extra hours, which was allowed by the Thai government, but it had to be in private health facilities, either privately owned clinics or in private hospitals. A study undertaken by a team assign by the Medical Council of Thailand revealed an income difference of more than 4-8 times when regular government salaries were compared to average income of private physicians. However this difference decreased

considerably (about 2-3 times) when extra income from private work was added to the regular income of government employed physicians (Table 2).

Those doctors working in the private hospitals also had lower work-load and worked fewer hours than their colleagues in the public sector. When the amount of compensation received per hour of work was considered, those working in private hospitals were much better off.

Table 2
Income differences between private and public physicians with and without extra income added (baht per month)

| Income Source | Medical Schools | Public Hospitals | Public Enter-prises | Private Hospitals | Private Clinics | Average |
|---|---|---|---|---|---|---|
| Regular | 14,002 | 11,652 | 22,369 | 43,302 | 81,020 | 15,534 |
| Additional | 20,426 | 23,467 | 36,500 | 23,574 | 15,205 | 22,585 |
| Total | 27,392 | 29,377 | 43,500 | 51,853 | 84,749 | 31,517 |

Table 3
Differences in income per hour between private and public hospitals physicians (baht per hour)

| Income Source | Medical Schools | Public Hospitals | Public Enter-prises | Private Hospitals | Private Clinics |
|---|---|---|---|---|---|
| Regular | 67.7 | 49.7 | 146.4 | 228.5 | 448.1 |
| Additional | 284.7 | 229.3 | 449.5 | 346.7 | 253.4 |
| Difference | 4.2 | 4.6 | 3.1 | 1.5 | 0.5 |
| Relative Weight | 1.4 | 1.0 | 2.9 | 4.6 | 9.8 |

## *The Worsening Working Environment*

This was related to the former factor and was listed as the second important factor that needed to be taken into consideration. In the past people usually complained of the lack of health staff and poor operating budget as underlying factors. Such shortages had however been ameliorated, but one factor relapsed at this time of rapid economic growth, that was the drop-out of certain types of personnel. With less personnel the already high volume of demand had to be met by fewer people. There were hospitals where only one neurosurgeon was left in an accident endemic area and thus a reasonable quality of services could no longer be maintained. Some large regional hospitals were left with only a few surgeons who had to

perform all kinds of surgical procedures that used to be taken care of by various types of specialty. Even without the high drop-out of physicians in the public hospitals, the average working hours of private physicians was lower than their colleagues in public hospitals. Most of them rarely had to work more than 11 hours a day. This heavy work load in public hospitals due to increased drop-out of specialists also affected the opportunity to earn extra income outside public hospitals. This then aggravated the already relatively lower income of the physicians who worked with the government. This unfavourable working environment and the low level of compensation coupled with lower net income interplayed and led to many physicians leaving public hospitals in rural areas.

These two factors—economic and a worsening working environment--were directly related to the growth in private health care, acting in two different ways. First, it attracted doctors in rural areas where benefits received were much lower by offering a much better income with less working hours. Secondly, it also encouraged a new income standard which had already been elevated by the much higher pay in private hospitals. The improving economy increased the number of patients who were ready to pay even more for the same service. Many other factors might exert their influence and lead to drop-out of physicians from rural areas and could considered underlying factors such as lack of merit system in promotion, inefficient public bureaucracy, remoteness of hospital sites and lack of other basic facilities to accommodate a growing family, etc.

## Behaviour of Providers

The behavior of those delivering health care was determined by various factors. Education and knowledge were the most commonly cited determinants. However, there was good evidence to suggest that the way health personnel were compensated for their work was probably the most influential factor. The best example was probably drug prescriptions where the number of drugs prescribed would increase if compensations were based on the number of drugs prescribed. In the same way, doctors would attempt to do more surgical procedures if they received special payment for each case even though alternative care might be equally beneficial or even superius. In Thailand the growing private sector had led to at least two noticeable changes in the practices of health personnel.

### *New Standards of Practice*

Private hospitals became increasingly more popular among the urban population who could afford to pay for their services. Physicians and other health personnel were drained from public to private hospitals. Thus a lot of public hospitals especially those in big cities felt threatened and tried to reorient themselves so that they could become more competitive, even though there was nothing much that they could do because of their lack of autonomy. For example, they could not increase compensation for staff to motivate them to work harder or recruit more staff so that the workload would be lower. The best they could do was build team spirit mostly through social psychological approaches and modifying certain aspect of the physical working environment. Hospital managers in the public sector tried to set up public relations departments to give proper instructions and advice to patients and relatives. Staff were requested to be more attentive to the demand of their clients. Physical surrounding were renovated to create a more pleasant atmosphere both for staff and patients.

The changes introduced were based on a variety of motives. Firstly, public hospital managers wanted to avoid the connotation of being second class hospitals. Secondly, they wanted to be more competitive so that they could attract those patients who could afford to pay so that the hospitals' revenue would increase and could be used for development purposes. The revenue from hospital charges allowed a lot of public hospitals to provide more services to the indigent population other than those supported by their limited budget. Most hospitals

were able to pay more than what they received from the government in term of regular budget through this "cross subsidizing approach".

Consequently, the reasons for these adjustments, health personnel in public hospitals might not have been very motivated to change. They might feel the need to do so however, because new "standards" of practice were introduced by the better paid personnel in private hospitals. Whether all these new standards were acceptable or appropriate or whether some of them might be superfluous or even wasteful was a priority issue which needed to be further investigated. Smiling faces of doctors and nurses would be a much desired new standard of practice while batteries of blood tests for all admitted patients or pre-set routine investigations for certain complaints might not be appropriate.

## *Use of High Cost Technology*

When public hospitals were the dominant providers in the country and the country's overall economy was not what it is nowadays, there were fewer high cost medical technologies. It would be appropriate to state that the private sector has been the main instigator in introducing and increasing the prevalence of high cost medical equipment. A good example was the CT scanner. In 1992 there were about 109 CT scanners in Thailand with about 33% owned by the public sector. The larger portion, 67%, was owned by private companies. It has become easier for doctors all over the country to order CT scanning for their patients. Wealthy patients and especially those whose care was to be paid for by some types of health insurance, were particularly prone to undergo CT examination. The problem of overuse of high cost technology needed to be addressed but could be tackled to a certain extent through appropriate educational measures.

A more disturbing consequence of the growing private sector which had led to a proliferation of high cost medical equipment was the marketing strategies used to promote the use of the CT scanners. In Bangkok alone there are 10 such machines for a million population or the ratio of 1 per 100,000, ranking third highest in the world. There were evidence that owners of the CT scanners offered financial benefits to doctors who ordered such investigations. As pointed out earlier, financial compensation constitutes a powerful factor influencing decisions and practices of all types of health personnel. Such compensation might lead to a biased decision in favour of the use of such technology. The Medical Council of Thailand considered it unethical for doctors to be rewarded as a result of referring patients for further care, either diagnostic, therapeutic or rehabilitative in nature. There were charges filed by the Thai Medical Council against certain companies offering such benefits.

## *Production of Human Resources for Health*

It was natural that private health care providers started their operations using whatever manpower was available. Gradually they initiated their own educational programmes. This was understandable given the nature of medical and health services and the way in which health personnel are educated. There was a need to acquire certain skills achievable only through hands-on experience, and practical training. Adding educational activities into any service might mean that more staff, who were more well-oriented with educational technology, would be added and a different managerial style would be adopted. On the other hand the management of private health facilities might look at education as a marginal investment and concentrate more on aspects of the service and technology which were deemed "more beneficial". Students or trainees might be used as services providers with remuneration or for which tuition fees could be charged.

In Thailand private hospitals have attempted to fulfil their educational function by opening nursing schools since 1974. The first one was established by McCormic Hospital which is owned by a nonprofit organization. There are at present six private nursing schools producing

about 350 nurse graduates each year (bachelor degree level). The figure is about 10% of the total number of nurses produced annually countrywide. The major producers of nurses comprise the universities and then the Ministry of Public Health. Most of the nursing graduates are requested to work for the hospitals where they were trained for a certain period of time. In so doing most hospitals that have nursing schools attached to them would have only a limited number of vacant posts. In the case of the Ministry of Public Health the number produced has been inadequate to meet the needs of the Ministry, yet there are very limited opportunities for nurses who graduated elsewhere to be recruited due to the limited budget of the Ministry. As for the private sector, most of the nursing graduates are employed by the hospitals to which the nursing school is attached. This is a guarantee for the private hospitals that they will have sufficient nurse manpower without having to rely on the market which could be quite unreliable even though they could be competitive in salaries offered.

Table 4
Production and projections of nursing students
in private nursing schools, 1987-1996

| Institution | 1987 | '88 | '89 | '90 | '91 | '92 | '93 | '94 | '95 | '96 |
|---|---|---|---|---|---|---|---|---|---|---|
| McCormick | <---------- 50 to 60 ----------> | | | | | | | | | |
| | (47) | (50) | (56) | (49) | (52) | | | | | |
| St. Louis | 30 | 30 | 50 | 55 | 50 | 55 | 55 | 55 | 60 | 60 |
| | (30) | (26) | (50) | (55) | | | | | | |
| Mission | 40 | 30 | - | 30 | 50 | 50 | 50 | 50 | 50 | 50 |
| | (36) | (26) | | (26) | | | | | | |
| Bangkok Christian | 30 | 35 | 50 | 50 | 50 | 55 | <--------- 60 ---------> | | | |
| | (27) | (30) | (45) | (45) | | | | | | |
| Rangsit University* | 60 | 60 | 60 | 80 | 100 | <---------- 100 ----------> | | | | |
| Hua Chiew | <---------- 50 ----------> | | | | | | | | | |
| | (46) | (47) | (51) | (47) | | | | | | |
| ABAC | | 40 | 40 | 42 | 31 | 30 | <--------- 30 --------> | | | |
| | | | (30) | (30) | (31) | (21) | | | | |

*Source*: Health Planning Division, MOPH, 1992
Note: number of graduate in brackets
* attached with Phyathai Hospital Network

Most of the private nursing schools were set up within private hospitals often without previous experience in education in nursing or any other field. However, recently a nursing school was established in a private university which had started out offering social sciences and business administration. This could be considered the first private nursing school run with a purely educational goal rather than that of productive for a specific hospital's use. However the owner of the university also owns a large chain of private hospitals and graduates also have some compulsory work period to follow. Still this private nursing school would be different from the others in the sense that it is within a university compound where the main business is education and resources for general education can be more readily available. The management carried out its education planning in a business oriented way by admitting a larger class of which it is expected a large portion will drop out during the first two years before the practical work is required and while teaching materials are more limited. This

school doubled its class size after six years of operation. The hospitals within the chain also have a definite plan of expansion which may make it possible for them to accommodate the increased number of nursing students. The other private nursing schools have not expanded much in terms of the number of students admitted which may be related to the size of the hospitals themselves. Most of them accept a class of around 50 students (Table 4).

Within the same private university that has its own hospital chain more health-science related schools have been opened. There is at present a school of pharmacy producing about 45 graduates per year. A medical school was established in 1989. The opening of this medical school was the most controversial as the resolution of the National Conference on Medical Education in 1986 stated that there was no need to open new medical schools in Bangkok and its vicinity due to the fact that while there was an over-supply of physicians in Bangkok, other regions were still in need of a large number of doctors. Opening up more medical schools in large cities might not be beneficial for the country as a whole but could create an untoward effect to health services both in big cities and in the rural areas. The overall strategy then was focussed on better distribution of existing human resources in the hope that they would eventually be distributed to the rural areas where it was most needed.

According to the regulation, the Bureau of University Affairs has the authority in granting permission to open up new schools to the private sector. In the case of this new medical school the committee duly appointed by the Bureau decided to grant permission after carefully reviewing the proposed curriculum. However its decision was opposed by the Medical Council citing the resolution of the 1986 National Conference mentioned earlier. As the Medical Council has the authority to give licenses to practise within the country, if any medical school is not accepted by the Medical Council their graduates will not be allowed to work as physicians in Thailand. The Medical Council appointed a sub-committee to review the situation and recommend appropriate policy towards private medical schools. A report was submitted by this committee which concluded that there was no need for the country to have a private medical school and that any new medical schools established would have to meet technical criteria and standards set up by the Council in order to ensure sustainable good quality education as well as benefits to the overall health care delivery system of the country.

The Bureau of the University Affairs did not agree with the recommendations of the Medical Council and the private medical school continued its operation. The first batch of students was selected and enrolled. They protested against the ruling of the Medical Council. At the same time the private medical school tried to affiliate with hospitals in Bangkok, in particular with one large public hospital within the Ministry of Public Health. There were differing opinions among key persons in the Ministry. The then Minister of Public Health would have liked to have had the approval of the Medical Council before affiliating with the private medical school. Certain staff members of the hospital refused to co-operate if the hospital joined hands with the private medical school citing that they were already overloaded with teaching and service commitments. Consequently, the affiliation would not be beneficial to the students and they might be used only as assistants for certain services without proper teaching. The management of the Ministry seemed to be in favour of the affiliation hoping that this would provide an opportunity to strengthen the hospital and therefore proposed a plan to further improve the hospital for effective teaching purposes. The plan would cost the private medical school an amount of around US$ 2 million. There were pros and cons felt by people involved in medical education, service providers, policy makers, and even journalists. Some of these will be discussed later.

## Rationalising Private-Public Mix for HRH Development

As human resources for health constitute a crucial component of the health delivery service system, the shift of health service infrastructure towards more active participation of the private sector definitely affects the strategies for better use of these valuable resources. Private providers' participation in health care has had some worrisome effects and these need to be addressed and handled properly in order to avoid worsening the already existing inequity

in health care accessibility of the Thai population. The involvement of the private sector if properly mobilized might help bridge the gap between the better-off and the rest of the society.

However, in terms of utilization of human resources for health, the expanding private sector has raised problematic issues for those planning the deployment of health personnel, especially for administrators in the public sector which has been adversely affected. The need for adjustment is urgent because the current situation may quickly lead to a compromised health services for the poorer sector of the population. The use of resources other than financial is crucial to re-direct and achieve a better use of human resources.

An important question is what should be the proper role of the private sector in producing human resources for health under the current concern that such resources should be produced to meet the needs of the health service infrastructure. How should privatisation of the production of human resources for health be directed so that it is used efficiently? At present over-supply exists in certain areas but shortage is observed in others and its appears that further distribution will not overcome the shortage but is likely to exacerbate over-crowding in the big cities. At present, government medical schools respond directly to the needs of the rural poor of the country by promoting the distribution of medical graduates to the rural areas. A problem thus arises as to how the teaching hospitals can be prevented from being weakened in the same way service hospitals have already been with the growing number of private providers? Finally how can quality be assured and maintained by private medical school owners?

Reorientation of human resources development under the growing private sector cannot be achieved without first rationalising the private-public mix in the health service infrastructure. To do this there must be a thorough understanding of how the private and public sectors behave in providing services to the population, and also what the nature of the health service demand is as perceived by the general public and by the health professions. The way each sub-system is financed is also important in determining the appropriate private-public mix, its efficiency as well as the degree of equity of access that it assist in achieving.

## Planned and Regulated Growth of the Private Health Care Providers

The customary belief that market mechanisms should be allowed to work freely without interference or restrictions by the government has been challenged continuously when applied to health services. In the case of Thailand the prevailing pro-private attitude stems from frustration at the time wasted in seeking government services enmeshed in complex bureaucratic hierarchical systems. People became frustrated having to spend time in long queues waiting for services at large city hospitals especially when economic changes have made time precious. The government tried to build more and larger hospitals in big cities but it did not seem to solve the problem. One of the difficulties may be related to management efficiency.

Evidence from the rural areas where good community hospitals are present showed that these institutions could meet the need of the rural population and prevent them from coming to crowd the hospitals in big cities. Increased coverage by a comprehensive health service rather than just a curative one in the rural areas proved to be a plausible solution. Considering current trends in health expenditure, the health budget will keep expanding if the government cannot find a reliable working partner to provide health services to the population. In big cities, and especially Bangkok, there are many well established private hospitals with which the government could collaborate. Whenever private sector participation is mentioned the use of market mechanism need not be overstressed.

To find out whether the government has tried to mobilise the private sector because of a sincere belief in its more efficient management system or whether it has done so out in an attempt to save the government budget is crucial in determining the future course of action. A government that acts out of financial concern has to consider whether it has already put a reasonable portion of its budget into health care and if so whether the health system is

actually serving the right group of people from that portion of the public budget. Upon facing demands to meet more needs of the people, it is inadequate to promote private providers rather than analyse the efficiency of government's own resource utilization. If it is found that the health infrastructure is not receiving enough to pay for the needy group, consideration of generating revenue for fees for service to cross subsidise the indigent population could be given in order to try and strengthen this infrastructure—rather than turning to rely on the private sector and not attempting improvement to the system. The case of rural health infrastructure and its effective community-based role is a good example of how hidden potential can be mobilized without having to rely on additional investment. It is too easy to decide that the current health infrastructure is already fully stretched and there is a limitation on further development because the government is not able to invest more on health even though other ministries may be receiving an even more excessive budget allocation.

If private providers are to be brought in, it is essential to rationalise the way in which the government budget should be used. This calls for a comprehensive study on how public hospitals should be supported and utilised before determining the role of private providers and their relationship with public hospitals. The government has to ensure that management mechanisms and the rules and regulations of public hospitals make them competitive with private hospitals. While competition should be encouraged certain limitations have to be imposed to avoid waste and prevent unnecessary demand creation. It has been well-documented that the demand for health care is highly sensitive to the availability of its supply. Consumers' decisions on health care are still very much based on trust and belief in their professional care givers. Because of this, health care should not be allowed to operate under totally free market mechanisms. Competition should be encouraged under certain limitations set by an informed authority, often the Ministry of Health in a country. Strengthening public health facilities, if they are already in place as in the case of Thailand, supports ministerial attempts to regulate the market. In those cases where a third party payment system exist, the setting up of efficient information systems is crucial to facilitating long term monitoring and adjustment so that both private and public provider are encourage to adopt the most effective practices to the benefit the public.

In a situation where it was observed that private providers have been expanding and providing better quality of care, the government must be careful in drawing conclusions. It was usually interpreted that the growth of the private sector stemmed from the rapid expansion of the national economy. With higher incomes, people naturally wanted higher standards of health care. It was considered that such services should be more appropriately catered for by the private sector. However, the growing demand for private providers might not be solely due to higher expectations from people for services. In many cases people turned to the private sector fearing that they would not be properly cared for in public hospitals. It is important for health facilities to be sensitive to the need of their consumers and to upgrade the quality of care if needed. What is considered as a luxurious extra is subjective and dependent on the society in which the health facility is located. It might be more appropriate at times for the government to improve the level of care provided by public hospitals rather than encouraging the private sector to take over because people can now afford to pay. In the situation where there is no public facility and the people are better off, it might be relatively easy to allow private investor to provide services which consumers are willing to pay for and the government would play a regulatory role to ensure reasonable charges and good quality of care. But if public facilities are already in place, it is more difficult for government to make decisions. It could decide to let the private investors take over all facilities and then play the regulatory role. It could also choose to further improve the facilities through the government budget and then operate it in a non-subsidized way with improved management, i.e., privatise its management set up. At the same time it could encourage private providers to create a competitive environment and thus ensure efficiency of the semi-privatised public hospitals.

There are two crucial components that need to be regulated to help bring about proper utilisation of human resources for health. These are prices and practices. Whether or not the private sector plays its role with or without a third party payment system, it is mandatory that

the government exercises its regulation role in these two areas. If pricing is not regulated, private providers could charge high prices and pay excessively high salaries to their personnel thus rendering the public sector uncompetitive. In fact, a high level of income difference between the private and public sector is an important underlying reason why physicians leave public hospitals to join the private sector. An imbalance in human resources for health would ensue, even though the management system of public hospitals might have be made more independent and potentially competitive. Prices of health care could be driven to unreasonably high levels in both private and semi-public hospitals due to the incomplete information provided to consumers who could never determine the actual value of the services given to them.

The other way that service providers could maintain their revenue and personnel income level is through the use of technology. Even though there is no standard procedure designating the "best" management plan for each case, each step of a patient's care needs to be justifiable. This allows flexibility in how a case might be handled. An unregulated system might encourage practitioners to be less meticulous and to over-examine or over-prescribe especially if the patients could afford it. This would be detrimental for both the individual patient and to the country's economy as a whole. The example of the attempt to promote the use of high cost technology owned by the private sector is a good example to be borne in mind. With a profit maximisation motive inherent in most private organizations the government has to ensure that the practice of medicine would be abused to a minimum. This can be achieved only by setting up a mechanism for medical audit. This would help ensure that decisions favour the most cost effective and clinically effective forms of patient care.

## Deregulating Public Hospitals and Management Strengthening

With a proper analysis of the situation and a thorough understanding of the nature of health needs, peoples' perceptions, and the motives of private providers, the government can set a clear and appropriate policy to develop public hospitals. As mentioned in the previous section, existing public health facilities with the present geographical distribution provide a good basis for meeting the needs of the population. Over-crowding of big hospitals and poorer quality of care of public hospitals compared to private ones could be remedied.

Public hospitals should be expected to provide care for the poorer segment of the population but their roles should not be limited to this if they can also provide care to the better off without having to be subsidized by the government. They could even mobilise additional resources from those population groups to cross-subsidise the poorer segment of the population. This has been the case with a lot of public hospitals in Thailand. There are some things that could be improved. Firstly is the ability to analyse the financial situation and cost accounting so that even partial subsidisation of the better-off can be avoided. Secondly is the autonomy to manage their own financial resources so that they can compete with the growing private sector and keep a balance, ensuring access with reasonable cost to the whole population.

Not only is it necessary for governments to take a less liberal policy towards the private sector in health care, it is equally important, if not more so, to adopt a more liberal policy towards public facilities and further strengthen their role and function. If public hospitals are to act as a stabiliser in the private-public mix set up, they need management autonomy. Hospitals should be allowed to plan the use of available financial resources to suit their situation with only general guidance from the central administration. The problem of imbalance of human resources due to big differences in the income and compensation schemes between private and public providers is a good example that could be more properly handled if hospitals could set up their own incentive schemes to attract staff using available resources without restrictions. If the government formulates a pricing policy which sets limits on the charges posed by public and private hospitals alike and also appoints medical audit teams as mentioned earlier, compensation for health staff in the private and public sector would not be too far apart. Thus the imbalance of human resources would be lessened.

Financial management ability also needs to be further developed among public hospitals managers. A cost accounting system would help ensure that public hospitals would not unnecessarily subsidise the better off population group. It also enables hospitals administrators to take proper actions on cost saving measures or divert resources to support the indigent group of population. If public hospitals are allowed to be autonomous and equipped with appropriate capability on financial management, they would be in a better position to take care of the poorer population group without being condemned as second class hospitals. It would also allow them to be more competitive with private hospitals and create a favorable atmosphere for private investors who want to enter into a healthy competition where the ultimate goal is the benefits of the country and not just profit maximisation of any individual private provider.

In terms of management of human resources for health under a healthy competition between private and public providers, it is essential to create an incentive scheme that would attract people to exert more efforts when there is more work to be done together with a disincentive scheme to prevent them from doing too much. Paying health personnel on a flat salaried rate is not motivating enough as the volume of work may vary quite greatly at different times and places. There should be additional compensation varying according to the amount of work done. This is basically the system adopted by private hospitals in paying their staff. Besides a financial compensation scheme, there has to be a system where performance of the health staff could be effectively assessed and proper measures could be taken accordingly in order to assure their desirable performances. To achieve this an in-house assessment system is essential. Most public personnel management systems are quite slow in detecting undesirable performance and also slow in taking action against them. As for conformity to good professional standards, a scheme applicable to different health facilities should be instituted.

## Advocating Non-profit Private Organizations in Health

It is very much up to the way governments regulate and thus direct the behaviour of private health care providers that the public facilities and human resources would avoid being adversely affected. The same thing applies when we consider the role of the private sector in producing health-sciences graduates. The need for such regulation is due to the fact that conventionally the private sector is geared for profit maximisation. In Thailand private hospitals have shares in the stock exchange and it is necessary that their management try to maximise the profits to maintain high investment incentive among stock holders. Private schools are prevented from having their shares circulated in the stock exchange for fear that it might put pressure on the schools' management and profit maximisation would then be pursued. This might create many undesirable consequences on the objectives and the educational processes organized by the schools.

Having private providers being involved in the services delivery under a non-profit setting might help to reduce the need for tight regulation against the private contribution to health care. A non-profit organization would not maximise profit as no personal benefits would be attained in relation to the amount of benefits received. However it would have to operate in such a way that there would be no negative balance and waste would be avoided to achieve long-term sustainability. An organization of a non-profit nature is more conducive to the goal of health care provision as well as for production of health personnel which is closely related to the health needs of the country and not just educational needs of individuals.

The rationale of having non-profit organizations for private health care provisioning is well illustrated given the background and evidences described earlier. As for the production of health-sciences graduates the issue may deserve further elaboration. In producing human resources for health, the prime objective is to meet the health needs of the population and keeping in mind the health services infrastructure of the country. This is somewhat different from education in other fields. In other disciplines the objective is often to equip individuals with knowledge necessary to do jobs that would give a decent life and also be economically

and socially productive to the society. An educated unemployed person is considered better than an uneducated unemployed person because he would have more knowledge to help himself out of the misery and thus be more likely to be beneficial for the country.

For people in the health-sciences disciplines, and especially doctors, it would be best if they could be deployed to bring better health to the population. As the cost of producing each graduate is quite high we have to ensure that they would be involved in health care provisioning and not just adding one more health personnel to the already over-crowded pool. This makes it imperative that plans for effective distribution be made along with production plans. It may be argued that health-sciences graduates should be viewed the same way as graduates in other fields. Even though they do not work in the health field they could contribute to the development of the country. Even if they are unemployed they could be productive for the country when opportunity arrives. These are all valid arguments. The question is whether this would be an efficient way of using our resources, especially when production is made without due consideration of effective distribution, leaving the market mechanism to exert its force. Moreover it could be to the detriment of the society if health personnel would be wasted in other roles as it requires a large amount of resources to produce one. As for medical graduates the issue has become even more delicate. Doctors are quite independent and their opportunity to provide medical care is not limited to vacant posts available either in public or private hospitals. Yet the wastage of having too many doctors could be observed long before doctors would have to turn to other professions of lower pay. Moreover when doctors are over-supplied they do not compete to lower the cost of health care but rather find a way around using the uncertainty in medical care standard to maintain their income or turn to the luxurious types of services such as aesthetic surgery, dermatologic centers for beauty, etc. In short the over-supply of doctors might lead to wastage in health care rather than lowering its cost and has to be minimised as much as possible. Advocating involvement of the private sector in producing health personnel may not be an appropriate approach in the long run especially in the situation when there is a great chance of over-supply and the new graduates to be added could not be effectively distributed or utilised properly due to lack of proper regulatory mechanism. A good example is the case of Japan where government policy is to reduce the production of medical graduates by 10% but private medical schools refused to conform.

Another reason why nonprofit organizations should be the basis for private involvement in producing human resources for health is concern over quality. It is well documented that the overall training of health-sciences graduates costs more than that of any other types of graduates. However they could be produced at lower cost if quality is not of prime concern. There could be only classroom teaching with no laboratory work or even practical hands-on experiences. In this situation the teaching staff are often recruited at higher than normal rates. Such requirements for large investment and operating expenses makes it doubtful whether quality would be sacrificed for the sake of higher benefits. Moreover it is rather uncertain that this undertaking could be maintained on a long term basis. Short term investment might be possible in order to get official approval but long term maintenance might not be there. The setting up of a non-profit organization with a large endowment fund would help to ensure long term commitment from the investors' side.

Operating in a nonprofit setting also helps secure equitable access to education for the general public. As the investment and operating cost is high, most private schools in this field would aim at enrolling only those from the better off families. A nonprofit one with an endowment fund would make certain fellowships available to support competent but financially underprivileged candidates to be enrolled in the school. The nonprofit background would also allow broader participation of the public or knowledgeable persons in the operation of the schools. This will help ensure that the schools would remain sensitive to the need of the country and would not just add more graduates to the already saturated pool of human resources for health.

## Creating A Quality Assurance Mechanism

A proper organization needs a good quality assurance mechanism to ensure its long-term existence. In terms of private-public mix in health service delivery system, it is even more important to institutionalise a quality assurance mechanism. It is worth mentioning here why it is so important.

First, a proper private-public mix depends largely on the regulation set up by the government to ensure good quality of care at reasonable price and minimising wastage. This is expected to rationalise competition between private and public providers.

Second, it is inadequate to control quality through rules and regulations only. Ensuring proper practices and minimising wastage is not an easy task which cannot be accomplished through a reporting system or depending on complaints. It is even worse to depend on a liability system which may result in increased cost of health care as the management has to take care of the legal mechanism as well.

Third, financial compensation for the work of health personnel needs to be high enough to motivate human resources for health to be responsive to the needs or demand of the patients. This could adversely lead to improper practice which need to be addressed through quality assurance mechanism.

Finally, the private sector normally grows when a third party payment system is in place. Certain third party payment systems, like the managed care approach of the US, tries to have providers of care financially accountable, which thus helps to minimise the cost of health care. This could be overdone, however, at the sacrifice of good quality of care.

All these points underscore the need for having certain mechanisms to ensure that providers of care both in the private and public sectors use their best judgement in caring for their patients and that they will not be biased by financial incentives. The quality assurance mechanism will have to cover three areas of importance. First is the need to pay attention to the use of various technologies in health including drugs. This is the most costly component in providing medical care and is sensitive in presence of high competition. Under rapid growth, competition is essential for each private facility to attract consumers and income. High cost technologies should be applied only where there are based on actual needs for the procedures. The quality assurance mechanism would help ensure that high competition would not lead to irrational decisions when compared to the real health problems.

The second area which needs to be monitored is charges for services. As proposed earlier, setting up a pricing policy designating reasonable levels of charges to be made by private as well as public providers would help generate fair competition. This fairness is meant not only for the competitors but also to assure the consumers that they receive appropriate service at reasonable cost. Setting a reasonable standard charge for various types of services may not be an easy task. There is a need for baseline data on hospital service. By having public hospitals as stabilisers, the health authority could manage to come up with acceptable standard charges. The task of the quality assurance team is, however, to assure that the quality of services matches with the charge imposed.

Another component that should be addressed is quality assurance in producing human resources for health. This is a totally different aspect that need to be assessed. It requires an interdisciplinary team with different backgrounds from the one mentioned earlier. This is needed to assure that quality of education will not be compromised for the sake of benefits. The expanding role of the private sector in producing human resources for health has brought our attention to the need for such a mechanism. However this does not mean that if such a mechanism is set up it would limit its role only to supervise private education institutes. The presence of the private sector has brought about a situation where competition is formidable and such competition should be a healthy one. The quality assurance mechanism is, therefore, crucial in ensuring that good quality would be the concern of all parties involved in producing human resources for health. The process of quality assurance should not be limited to final examination of the graduates. It should involve periodic assessment of the education facilities and faculties. In most cases due to the presence of at least two different organizations involved in assessing the quality of graduates in health, i.e., the educational authority and the

professional associations, such a mechanism should be a collaboration of the two parties concerned.

## Conclusion

Growth of the private health sector creates many problems among administrators in the public sector. Some may look at it as an opportunity to use the private sector to take over the future workload and limit public sector responsibilities. Others may look at it as an opportunity to further re-orient the public sector to be more responsive to the needs of the population. The main focus of this paper has been based on the latter concept. Problems in the public sector with regards to the development of human resources for health have been analysed to assess the situation and formulate possible ways to involve the private sector so that the problems of human resource development faced by the public sector could be solved and involvement of the private sector would be advantageous. Efficiency could be achieved without compromising equity. If the rules could be set and enforced while both sides attempt to make adjustments under the common objective of improving health of the people using available resources wisely, there would no longer be a distinct dividing line between the private and public sector in health care. The two parties could constitute an effective partnership and appropriate public-private mix for health care.

# Urbanization and the Health Systems

**Supakorn Buisai**

## Introduction

In 1980, the Rome Declaration on Population and the Urban Future of the United Nations made a prediction: *in the next two decades, the world will undergo, as a result of urbanization process, the most radical changes ever in social, economic, and political life.* It addressed the inadequacies, in most cities of the world, in *virtually every service, amenity and support required for tolerable urban living* (UNFPA, 1980). The level of urbanization in developing regions is expected to increase from 37 percent in 1985 to 45 percent by the end of the century, and 61 percent by the year 2025 (World Health Statistics, 1991a).

Although Thailand has traditionally been one of the less urbanized countries in Southeast Asia, more recently urbanization has been expanding by about 6 percent a year. In 1990, about 17 million people or almost one-third of the total population lived in urban communities. Further, this 'minority' accounted for over a half of the total recorded production. Overall, unbalanced development has been reported, widening regional inequalities and generating a complexity of urban problems (Chalamwong and Douglas, 1992).

As for public health, one primary purpose of urban health planning is to ensure relevant health care to those groups in need, and the urban poor in particular. Another subject, more perplexing, is obligated by the interconnection between the rural and urban subsystems. Since the latter subsystem comprises formidable forces, and particularly in terms of economic power that could undermine the former's health system, then a challenge is to compromise this dualism and maintain adequate, equitable health care for the overall society. While the first mandate appears in the Seventh National Plan (1992-1996), the second has only recently been recognized by the Ministry of Public Health (Tangcharoensathien and Nittayarumphong, 1992). Given the complexity of urban development, a possibility emerges for identifying other sensible challenges in urban health planning.

This report is aimed at supplying needed information for analysis at the macro-level. After defining urbanization, it provides the reader with a portrayal of urbanization regarding its demographic and economic profiles. Since strategic assessment is of primary interest, an emphasis will be placed on trends projections. Second, this report also investigates the urban poor, and then presents the health implications of urbanization. The discussion is concerned particularly with the services component of the health system. Health services profiles will be reported regarding their utilization and supply, followed by a look at urbanization based on approaches and findings of major studies. Finally, the discussion integrates urbanization policy and the design of urban health system, and then makes recommendations based on previous findings and dicussions. Overall, the discourse used here concerning the urban health issue is from a neutral point of view between health and non-health concerns. The reader, however, is urged to think of it as a long-term evolution.

## Definition

The definition of an urban population as used here is based on the ***Final Report*** of the National Urban Development Policy Framework (Ashakul et al., 1992:8-9).[1] The Final Report

[1]This project of the National Economic and Social Development Board (NESDB) was funded by UNDP and comprised research components carried out by the Thailand Development Research Institute (TDRI). The project, consisting of seven interrelated areas, entails the description and analysis of rapid

provides two basic definitions of 'urban.' The first relies on administrative boundaries and the type of local government, whereas the second is derived from physical land use and the geographic expansion of densely built-up areas.

The revised administrative definition[2] designates 'urban' to cover municipalities and large sanitary districts with populations of 5,000 or more. However, administrative boundary adjustments occur so infrequently that the administrative area becomes under-bounded, especially when the area is growing rapidly. To overcome this shortcoming, 'urban' is classified geographically[3] to include residential and/or industrial areas with a mass of over 5,000 persons and a minimum average density of 1,000 persons per square kilometer. Unless the distinction represents a significant implication, this report uses the two definitions interchangeably.

## Population Trends and Forecasts

The geographical definition points out that at present 32 percent (about 17 million) of the Thai population are considered urbanites. In 1975, only 24 percent of the total population lived in urban communities. Between 1986 and 1990, however, the urban population grew by over six percent a year. Future changes in population size and spatial distribution will profoundly affect the urban situation over the next fifteen to twenty years. During the 1990s, the country is forecasted to undergo a major demographic turning point.

Based on the 1980 and 1990 Population Censuses, the Final Report presents a projection that by 2010, the country will become 46 percent urbanized. The Thai population will increase by about 15 million (26 percent) over the next twenty years, from 56.1 million in 1990 to 71.1 million by the year 2010.[4] Expectedly, 14.8 million will be added to the present urban population, while the rural sector will increase by only 0.3 million (Table 1). By the end of this century, the Thai's rural population is expected to decline in absolute number (Ashakul et al, 1992).

The population of the Bangkok Metropolitan Region (BMR), which includes the Bangkok Metropolitan Administration (BMA) and five neighboring provinces,[5] is projected to increase from 8.9 million to 12.6 million (42 percent) over the next two decades. Approximately, 1.8 million will be added to the BMA and another 1.8 million to the Five Provinces. Equally striking are projected increases for the Extended BMR,[6] which will grow from 12 million to 17 million (about 42 percent), increasing its share of the total population from 21.5 percent of the total population in 1990 to 24.3 percent by 2010. Urbanization in those areas tends to take place along major highways and roads leading from the central core towards a variety of other major urban centers.

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changes occurring in the Thai economy and their impacts on urbanization patterns and urban development issues.

[2]The traditional definition classifies only municipalities as 'urban.' Nevertheless, in 1988 the population living in urban sanitary districts amounted to 4.1 million or approximately 26.2% of the total urban population.

[3]This is conducted normally using geographic technology such as satellite images.

[4]The predicted average growth rate is 1.42% per year during 1990-1995 and 1.19% per year during 1995-2010.

[5]The five Provinces include Nakhon Pathom, Samut Sakhon, Nonthaburi, Pathum Thani, and Samut Prakarn.

[6]The Extended BMR is comprised of the BMR and the five adjoining provinces including Ayutthaya, Saraburi, Chachoengsao, Chon Buri, and Rayong.

Table 1
Projection of Urban and Rural Population Changes
in Selected Regions/Provinces, 1990-2010

| Region/province | Population Change | | |
|---|---|---|---|
| | Urban | Rural | Total |
| *Administrative Definition* | | | |
| BMA | 1,815,710 | - | 1,815,710 |
| Five Provinces | 1,577,421 | 189,411 | 1,766,832 |
| ESB | 782,781 | 285,253 | 1,068,034 |
| Saraburi | 207,388 | (13,652) | 193,736 |
| Ayutthaya | 141,638 | 100,819 | 242,457 |
| Nakhon Ratchasima | 673,571 | 127,640 | 801,212 |
| Khon Kaen | 371,203 | 48,494 | 419,697 |
| Udon Thani | 526,904 | 18,202 | 545,106 |
| Chiengmai | 389,077 | (11,695) | 377,382 |
| Songkhla | 420,901 | 188,490 | 609,391 |
| Thailand (million) | 11.6 | 3.4 | 15.1 |
| *Geographical Definition* | | | |
| BMA | 1,815,710 | - | 1,815,710 |
| Five Provinces | 1,961,973 | (195,140) | 1,766,832 |
| ESB | 1,196,231 | (128,197) | 1,068,034 |
| Saraburi | 242,441 | (48,705) | 193,736 |
| Ayutthaya | 259,395 | (16,939) | 242,457 |
| Nakhon Ratchasima | 901,353 | (100,141) | 801,212 |
| Khon Kaen | 483,649 | (63,953) | 419,697 |
| Udon Thani | 660,548 | (115,441) | 545,106 |
| Chiengmai | 517,671 | (140,289) | 377,382 |
| Songkhla | 555,496 | 53,895 | 609,391 |
| Thailand (million) | 14.8 | 0.3 | 15.1 |

*Source*: Modified from Ashakul et al. (1992), Table 4.8.

*Note*: (1) Five Provinces include Nonthaburi, Samut Prakarn, Nakhon Pathom, Pathum Thani and Samut Sakhon.
(2) Eastern Seaboard (ESB) includes Chon Buri, Rayong and Chachoengsao.

Finally, a bulk of urbanized communities will emerge outside of the current administrative boundaries (Ashakul et al., 1992). Under the administrative definition, Thailand's urbanization is estimated to increase from 30 percent in 1990 to 40 percent in 2010. On the other hand, under geographical definition the change represents a more astounding increase from 32 percent to 46 percent during the same period (Table 1). This divergence indicates a need for infrastructure assessment (including that for health facilities) beyond municipality areas. The local administrative body just outside of the municipal fringe is normally too small for such a large-scale planning.

## Projections for Economic Activities and Employment

Economic changes bring about an alteration in people's lifestyles. Changes in production mix of the region would influence both illness patterns of the community and health-seeking

behavior of its inhabitants. Such a development would inevitably modify the demand for social services and, in turn, affect their supplies both within and between the regions. Together with the population trends and distribution, one should thus acknowledge the effects of urbanization including increasing demand, changing personal economic lives and institutional support, as well as major economic externalities.

The recent economic boom is expected to moderate to about eight percent per year during the Seventh Plan period. In 1991 the total work force amounted to approximately 34 million. Employment growth is estimated to average about 1.7 percent (almost 600,000 persons) annually. Overall, an increasing percentage of the labor force will be employed in service and manufacturing. The share of the labor force in agriculture will fall from 65 percent to 60 percent between the same period (Ashakul et al., 1992; Table 2).

Agriculture's share in the GDP has decreased so rapidly that in 1989 its GDP share was only 15 percent, despite over 60 percent of the work force being in the agricultural sector (Table 2). The average earning of agriculturalists is almost four times less than persons employed in industry and services (Sussangkarn and Daniere, 1992).[7] Further, during 1986-87, on average agricultural households acquired about 42 percent of the total income from non-agricultural pursuits from which the earning share showed a rising trend (Chalamwong and Kittiprapas, 1990). This trend suggests that even in rural communities urban-like economic activity is becoming a more significant source of income than in the past.[8]

Regarding non-agricultural domains, tourism and transportation have been the fastest-growing sectors.[9] This progress has expedited the growth of several tourist-attracting towns. Expectedly, both items will continue to grow. In addition, during the Seventh Plan, manufacturing, construction and merchandise exports are estimated to increase by 9.5, 8.9 and 14.7 percent, respectively (Sussangkarn and Daniere, 1992).

Table 2
Employment and Share of GDP by Major Sector

| Sector | Percent of Total Employment | | | Percent of GDP |
|---|---|---|---|---|
| | 1990 | 1996 | 2000 | 1989 |
| Agriculture | 65.1 | 59.2 | 55.1 | 15.2 |
| Manufacturing | 11.5 | 12.8 | 13.8 | 37.8 |
| Service | 23.4 | 28.0 | 31.0 | 47.0 |

*Source*: Modified from Ashakul et al. (1992), Table 7.2.

[7]The Bank of Thailand (1991) reported the average monthly income of 7,128 and 6,377 baht for industry and service workers in Bangkok and the central region, respectively.

[8]This phenomenon is even more striking in the Northeast which is 84% rural. In 1980/81, about 61% of income came from agriculture but this proportion reduced to only 49% in 1986/87.

[9]Tourism accounted for 40% (about 100 billion baht a year) of the country's income from major exports in 1989, representing over half of total services income. The second-fastest growing service item is income from transportation, contributing approximately 10% of the total income from services in 1989.

During 1988-89, the gross production of Bangkok contributed to about 35 percent of the GDP, though its growth rate was only about the national average. Provinces that showed the highest economic growth rates included those around the BMA, Phuket, and those in the central plain (Table 3). The East is expected to be the only other region where the contribution to GDP will continue to rise. The rapid growth here will be the result of large volumes of public and private investment in the Eastern Seaboard (ESB) development project.

Table 3
The Ten Provinces with Highest Gross Provincial Product (GPP) Per Capita, 1989

| Rank | Province | Monthly GRP per Capita | | |
|---|---|---|---|---|
| | | Baht | Times of GDP | Growth rate[a] |
| 1 | Samut Prakarn[c] | 9,942 | 3.7 | 20.5 |
| 2 | Bangkok[c] | 8,780 | 3.3 | 15.9 |
| 3 | Pathum Thani[c] | 8,358 | 3.1 | 24.6 |
| 4 | Chon Buri[d] | 7,315 | 2.7 | 39.9 |
| 5 | Samut Sakhon[c] | 5,753 | 2.2 | 12.9 |
| 6 | Phuket | 5,531 | 2.1 | 27.8 |
| 7 | Saraburi | 5,409 | 2.0 | 23.5 |
| 8 | Nonthaburi[c] | 4,899 | 1.8 | 22.4 |
| 9 | Chachoengsao[d] | 4,634 | 1.7 | 22.6 |
| 10 | Rayong[d] | 3,510 | 1.3 | 10.5 |
| | Thailand | 2,669[b] | | 15.9 |

*Source*: Modified from Alpha Research, Co. (1992). *Thailand in Figures—1992-1993*, Section 3, Table C., p. 300.

*Note*: [a] Rate of increase between 1988 and 1989. Other fast-growing provinces (among the "top-tens") included Phetchaburi (24.9 percent), Ratchaburi (24.8 percent), and Suphan Buri (22.5 percent).
[b] GDP per capita
[c] BMR provinces
[d] ESB provinces

Generally, the cities experiencing highest rate of population increase are the ones benefitting from growing economic industries and/or services including tourism. Indeed, several regional cities have apparently been emerging as significant population centers. Among the fastest-growing are Chiengmai, Phuket, and Surat Thani. This striking relationship implies a need for rigorous addressing of the role of urban centers on economic development.

Apart from the type of production and growth centers, the labor force also deserves the planner's attention. Owing to the structural change of the population, the country's labor force is shifting towards the use of more mature workers. Economic activities will gradually rely less on child labor. This suggests a need for more relevant and comprehensive system of services and pension schemes to cater for an older work force. Old-age dependency will likely become more significant in the central region. On the other hand, the southern and northeastern regions, where fertility rates have remained high, will still experience relatively high degrees of youth dependency.

Finally, the growth of the economy has been propelled by a human resource pool that shows peculiar characteristics including: (1) a sizable supply of low-wage labor, (2) good quality of the work force, (3) extensive on-the-job-training, and (4) high quality of female workers and their participation rates (Sussangkarn and Daniere, 1992). Therefore, an economic position suggests that future direction of human resources development should be geared towards complimenting those comparative advantages and strengthening the capacity of the labor force to adjust and upgrade its productivity in response to technological changes. Social program planning including health care should also address this challenge.

## The Urban Poor

Recent economic growth has been accompanied by greater employment opportunities. Consequently, a large number of migrants have been drawn into the cities. Coupled with inadequate working skills, inadequate provision of basic social services, a higher consumer price index, and rapidly increasing prices of land, urban poverty has been inevitably enlarging. Pertinent questions should be: How many urban poor people are there? How serious is their poverty? How do the poor live their lives? Answers to these questions would lead to planning for providing the support that poor urbanites need.

Nationwide, poverty incidence in municipalities rose from about 5.9 to 6.7 percent of the population between 1986 and 1989. An analysis of national survey data shows small differences in the severity of urban poverty among regions between 1985/86 and 1988/89. Poverty incidence in the Northeast was almost four times that of the nation and the incidence tended to rise in the North, South and the Five Provinces (Table 5). However, distribution of the urban poor across regions indicates that the largest percentage[10] live in the BMR (Hutaserani, 1992). Further, population projections suggest a rapid influx of people from the hinterland to the BMR over the next decade. This implies that the BMR should be given priority in the formulation of policies and programs to ameliorate urban poverty.

Although only a small proportion of urban dwellers were below the poverty line, a sizable number would have pursued their earnings just above this arbitrary demarcation.[11] Given a shallow income distribution curve, a sensitivity analysis would reveal a large proportion of the population earning around the poverty line (Chalamwong and Douglas, 1992). Further, provided migration rather than natural increase is the primary propelling force for future urbanization, a progressively increasing number of relatively poor people from the hinterland will be moving to the BMR and other urban centers seeking job opportunities.

Generally, a large number of the urban poor reside in slums and squatter communities. Regional micro-comparison of selected sites reveals a better status for Eastern slums in almost all aspects with respect to Basic Minimum Needs (BMNs). Northern, Northeastern and Southern dwellers showed inadequate access to infrastructural supports including electricity and piped water. The latter suggests an increased risk of developing infectious diseases. Southern dwellers, in particular, were found to have the least access to health care. On average, however, the BMR slums were considered better off than regional ones (Hutaserani, 1992).

Among the BMR slums, small slums are considered better off than medium, large, and construction-site slums. Large slums feature the poorest status in almost all aspects with respect to the BMNs. People in large, medium and small slums appeared to have similar access to health care services whereas workers living in construction sites were found to have less access, particularly among children. Rates of using the BMA health centers are considered low (Hutaserani, 1992).

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[10]about 31 percent or 380,000 persons in 1989.

[11]The poverty line implies only whether or not a household fall below the standard needed to sustain barely adequate nutritional needs.

Table 4
Projection of Population and Dependency Ratios, Thailand, 1980-2010

| Region | 1980 | 1990 | 2000 | 2010 |
|---|---|---|---|---|
| Total Population ('000) | 46,718 | 56,082 | 64,110 | 71,118 |
| 15-59 (percent) | 54.6 | 61.1 | 65.6 | 67.2 |
| Total Dependency Ratio | 83.2 | 63.6 | 52.6 | 48.7 |
| Youth Dependency Ratio | 73.3 | 53.5 | 40.7 | 34.4 |
| Old-age Dependency Ratio | 9.9 | 10.1 | 11.9 | 14.3 |

*Source*: Modified from Ashakul et al. (1992), Table 4.3.

Table 5
Poverty Incidence and Severity for Urban Areas, 1985/86-1988/89

| Region | 1985/86 | | 1988/89 | |
|---|---|---|---|---|
| | Headcount Ratio | Income Shortfall Index | Headcount Ratio | Income Shortfall Index |
| Whole Kingdom | 5.9 | 0.27 | 5.7 | 0.28 |
| North | 6.9 | 0.31 | 11.3 | 0.29 |
| Northeast | 18.7 | 0.24 | 19.0 | 0.27 |
| Central | 8.9 | 0.32 | 8.4 | 0.27 |
| South | 8.6 | 0.27 | 11.8 | 0.28 |
| BMR | 3.5 | 0.26 | 3.4 | 0.29 |
| BMA | 3.1 | 0.31 | 3.3 | 0.29 |
| 5 provinces | 6.1 | 0.27 | 10.8 | 0.27 |

*Source*: Modified from Hutaserani S. (1992), Table 5.4.
*Note*: (1) Poverty incidence as measured by headcount ratio[12]
(2) Severity of poverty as measured by relative income shortfall index[13]

Further, Hutaserani (1992) note that the informal economic sector played a more significant role than the formal sector in providing jobs to the urban poor.[14] A large number of the poor earned their living through street vending and a variety of petty trade endeavors. Further, the informal sector exhibited relatively free entry with respect to gender, age and educational attainment. Despite this important role, by 1988 both the share and growth rate of the informal sector had declined. This fact indicates that programs for the urban poor which are channeled through their employment would likely fail to reach a sizable number of the informally employed.

Among the BMR slums, small slums are considered better off than medium, large, and

[12]the proportion of households living below the poverty line

[13]the proportion of the poverty income needed by a poor household to escape from poverty

[14]Between 1984 and 1988, the share went down from 59 to 56%.

construction-site slums. Large slums feature the poorest status in almost all aspects with respect to the BMNs. People in large, medium and small slums appeared to have similar access to health care services whereas workers living in construction sites were found to have less access, particularly among children. Rates of using the BMA health centers are considered low (Hutaserani, 1992).

Further, Hutaserani (1992) note that the informal economic sector played a more significant role than the formal sector in providing jobs to the urban poor.[15] A large number of the poor earned their living through street vending and a variety of petty trade endeavors. Further, the informal sector exhibited relatively free entry with respect to gender, age and educational attainment. Despite this important role, by 1988 both the share and growth rate of the informal sector had declined. This fact indicates that programs for the urban poor which are channeled through their employment would likely fail to reach a sizable number of the informally employed.

## Health Effects of Urbanization

Cities are complex and heterogenous entities within which health and health-related conditions vary widely between geographical areas and socioeconomic groups. Usually, information supplied to policy makers are inadequate thus failing to reflect the actual effects of urbanization on the health of those diversified categories.[16] In Thailand, health data about urban inhabitants are primarily processed by the Ministries of Public Health and Interior. While the former has a strong health concern, it lacks the administrative authority within the city area and the reverse is true of the other.

Further, the community-based data system extensively used in the rural sector is considered problematic and rarely implemented in urban communities. As a result, routinely collected data are far from meeting what is needed for adequate assessment. However, Thailand has a wealth of household surveys which have mapped utilization and expenditure patterns with regards to health. Such surveys manage to trace general trends but they hardly provide adequate data for detailed analysis (Tangcharoensathien et al., 1992).

Although it is difficult to describe poor urban populations with a sufficient degree of statistical reliability, accelerated urbanization typically generates a situation interface between underdevelopment and modernization and their disease patterns reflect the problems of both (WHO, 1991b). Children, women, adolescents, workers and the elderly are considered vulnerable, high-risk groups. Typical conditions associated with life in poor urban areas include:

(1) being forced to live on land that is environmentally hazardous;
(2) the extended family with its protective structure is replaced by the nuclear family; the social structure available in the rural areas is destroyed in the migration process and difficult to rebuild in the city;
(3) the higher vulnerability of the urban immigrant and slum dweller;
(4) the higher proportion of single-parent households, often headed by women, and the consequent need for women to work with the risk of children being neglected;
(5) the need for children to contribute to the family income and thus be exposed to accidents, maltreatment and abuse (WHO, 1991b).

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[14]Between 1984 and 1988, the share went down from 59 to 56%.

[15]Basta (1977) pointed out that among reasons why city health statistics tend to look better than rural ones is that squatter or slum inhabitants do not appear in the statistics (they are not 'official' residents of the city in many cases), or their inclusion is obscured by the enormous difference existing between their status and that of the middle- and high-income parts of the city.

On this grounds, three groups of health hazards are identified. The *first* involves low income and low education, overcrowding, under-protection and an inadequate diet which leads to communicable diseases and malnutrition. The *second* includes man-made conditions (e.g., stress, pollution, traffic, noise, alienation and unhealthy behaviors) which predispose people to cardiovascular, neoplastic and mental diseases as well as accidents in the home, at work or on the road. The *third* group is related to social instability, promiscuity and prostitution which, coupled with poverty and low education, can lead to alcohol and drug abuse, crime, child abuse and sexually transmitted diseases (Tabibzadeh, 1989). This picture suggests that planning only for health services would be far from adequate for both effective prevention and cure of those illnesses.

## Health Care Utilization

In 1990, the average monthly income of a Thai household was 5,621 baht, of which about 3 percent (171 baht) went to medical care. Approximately, 21.1 percent of this amount was spent on self-prescribed drugs. An average household thus spent about 135 baht each month for institutional care. Between 1981 and 1990 the proportion of medical expenses for institutional care shows an increasing trend (Table 6). The share of expenses going to private institutions also rose from 29.5 percent of the overall medical expense in 1986 to 35.7 percent in 1988.[17] Services delivered at public institutions accounted for 36.4 percent of the overall medical expense during the two years. Tangcharoensathien et al (1992) point out a trend indicating a decreasing share of self-prescription and a waxing share of private hospitals.[18]

The 1988 SES suggests that medical expenditure among urbanites differed from those in the rural sector. On average, although they spent in absolute number on medical care per person more than the national figure by 73 percent, this amounted to only 2.8 percent of the household expenditure which is less than the national average of 3.4 percent. The expense for institutional services accounted for more both in absolute and relative amounts (Table 7).

Sources of financing health care is another point reflecting the relative decision-making power of concerned parties. In 1987, about 73 percent of services financing came directly from private households. The government had only a 24.2 percent share of which 58.3 percent was supplied by the Ministry of Public Health (MOPH). Further, the trend is that the public share is decreasing (Tangcharoensathien et at, 1992). By 1987, third-party payments occupied only a marginal share.

Access to health care varies with the definition of basic health services that people should be provided. Taking insurance coverage as the classification basis, three separate studies suggest sizable differences between the rural, general urban and urban slum locales (Table 8). The figures, albeit limited in generalization, suggest that on becoming ill more than 40 percent of the urban population had to pay for their own risks. On the other hand, 57 percent of rural inhabitants were not covered by any insurance scheme. WHile this suggests a better condition for the former, a sizable proportion among urbanites are yet uninsured.

Household surveys reveal the existence of informal providers. Together with drug dispensaries, they were used particularly by the poor population sectors. Tangcharoensathien (1990) found that 31 percent of the population in an urban slum in Chiengmai province used drug stores when ill, making it the most common resort. Further, 24 percent of dwellers in this community seek health care from indigenous providers.

The utilization data above suggests that the consumer likely changes his/her preference pattern over time and when urban characteristics becomes more intensified. The utilization pattern drifts from indigenous healers to self-prescription to institutional care. Regardless of

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[16]Data for 1981 and 1990 are not available.

[17]It is recommended that the reader finds further detail in this subject as reported by several studies including some excellent ones by Tangcharoensathien and Honvivatana.

this pattern shift, the aforementioned trends also point out that institutional services would become an increasingly significant form of health care in urban areas.

Table 6
Trends in Household Expenditure on Medical Care (current price)

| | 1981 | | 1986 | | 1988 | | 1990 | |
|---|---|---|---|---|---|---|---|---|
| | Baht | % | Baht | % | Baht | % | Baht | % |
| Income | 3,378 | | 3,631 | | 4,106 | | 5,621 | |
| Expenses | 3,374 | | 3,783 | | 4,161 | | 5,521 | |
| Medical Care | 113 | 100 | 132 | 100 | 143 | 100 | 171 | 100 |
| Self-prescription | 36 | 32 | 35 | 27 | 31 | 22 | 36 | 21 |
| Institutional | 77 | 68 | 97 | 73 | 112 | 78 | 135 | 79 |
| Public | na | | 48 | 36 | 52 | 36 | na | |
| Private | na | | 39 | 30 | 51 | 36 | na | |
| Others | na | | 10 | 8 | 9 | 6 | na | |

*Source*: Modified from Tangcharoensathien et al. (1992), originally from SES 1981, 1986, 1988 and 1990 (preliminary report).
*Note*: All the percentages are that of the total expense on medical care.

Table 7
Household Expenditure on Medical Care by Region, 1988

| Expenditure | Greater Bangkok[a] | | Municipalities ex. Greater Bangkok | | Thailand | |
|---|---|---|---|---|---|---|
| | Baht | % | Baht | % | Baht | % |
| Medical Care | 217 | 100 | 178 | 100 | 143 | 100 |
| Self-prescription | 33 | 15 | 30 | 17 | 31 | 22 |
| Institutional | 184 | 85 | 148 | 83 | 112 | 78 |
| Percentage Households | 16.2 | | 7.9 | | 100.0 | |
| Size (persons) | 3.5 | | 3.5 | | 4.0 | |

*Source*: Household Socio-economic Survey (SES), 1988.
*Note*: [a] Greater Bangkok includes the BMA and three neighboring provinces.

Table 8
Insurance Coverage from Three Household Surveys

| Type of Insurance | Rural* | Urban Slum** | General Urban*** |
|---|---|---|---|
| Free medical care | 17.2 | 20.0 | 2.4 |
| Government medical benefit | 12.2 | 15.0 | - |
| Other employment benefits | 5.1 | 10.0 | 35.8 |
| Private insurance | 0.4 | - | 5.2 |
| Multiple Scheme | 1.6 | 6.0 | - |
| Others | 6.5 | 6.0 | 2.9 |
| None | 57.0 | 43.0 | 48.3 |
| Sample size | 4,870 | 721 | 4,425 |

*Source*: * Hongvivatana, (1990)
** Tangcharoensathien, (1990)
*** Panarunothai, (1992)

Table 9
Average Size, Number and Share of Hospitals by Types, 1990

| Hospitals | Average Size (beds) | Total | | Share | |
|---|---|---|---|---|---|
| | | Number | Beds | Number | Beds |
| Public | | | | | |
| MOPH | 85 | 736 | 62,165 | 67.5 | 66.4 |
| Other ministries | 226 | 88 | 19,916 | 8.1 | 21.3 |
| Private | 43 | 266 | 11,499 | 24.4 | 12.3 |
| Overall | 86 | 1,090 | 93,580 | 100.0 | 100.0 |

*Source*: Calculation derived from data of the 1991 Health Resources Survey, MOPH, and 1991 Population Registry, MOI.

On the supply side, existing data are considered inadequate to portray the whole picture, particularly about non-institutional providers. Alternatively, institutional services are delivered by three principal parties: the Ministry of Public Health (MOPH), other ministries and public agencies, and the private sector (Table 9). The characteristics of facilities are explicit to their respective interests. MOPH hospitals are typically hierarchical and well distributed across the country. The Ministry of University Affairs (MUA) has established large teaching hospitals in the BMA and a few regional cities, whereas the Ministry of the Interior (MOI) assumes the local administrative authority over all municipal activities but only a marginal share of health facilities.

The private sector, which has recently featured a rapid proliferation, occupied about 24 and 12 percent of the 'market share' with respect to hospital numbers and beds, indicating relatively small-size facilities. A closer look discloses that private hospitals have flocked in

urban communities, and the BMA in particular (Tangcharoensathien et al., 1992). Mapping reveals further that their distribution is considered responsive to the growth of urban communities. In the BMA, for example, while forty public hospitals, among which a few are very large teaching hospitals, are clustered within the inner city center, almost seventy small- and medium-sized private hospitals are spread out across this megalopolis.[19] Given the crowdedness at public facilities and the worsening traffic congestion, the non-financial accessibility barrier is much less to private services.

## Approaches to Urban-Rural Development

Given health as a component of the larger social and economic system, health planners ought to identify its position related to the environment. On this ground, a general development framework would serve as a foundation for strategic planning for health. While history could provide a variety of precautions, the contemporary development approach constitutes opportunities and threats to pursue.

Formerly, Rostow's (1956, 1960) stage system of development was held as a dominant development approach (and a subject of substantial professional debate). Later the core-periphery model of regional development became another renowned theory explaining the nature and types of rural and urban relations (Friedman, 1973; Friedman and Weaver, 1979). This model describes four stages which trace the evolution of a spatial framework from a sparsely populated agrarian country to developed country.

Some development scholars often argue that economic development would first bring about disparities between urban and rural areas as well as among regions. The final phase of development, however, is believed to lead to what Richardson (1973) termed a "reversal of polarization" where urban-rural and interregional disparities converge. During this final phase, a fully integrated space economy would emerge, resulting in the balance of development through a functionally interdependent system of cities.

Several development approaches or principles have been developed during the past three decades based on empirical evidence in developing countries of the world. One early (and still influential) approach is the Perroux's ***growth pole*** concept (Parr, 1973; Polenske, 1988). Heavily dependent on large-scale industry, this concept argues for an urban-industrial development at a single locus that features a comparative advantage.[20] However, from experiences gain in it applications, the development gap usually widened rather than becoming bridged (Parr, 1973; Friedmann and Weaver 1979; Polenske, 1988). Since the earliest national development plan, Thailand has adopted this development approach which has promoted polarized growth in Bangkok, and since recently, utilized the growing Bangkok area as the industrial base for exports. Yet no sign of polarization reversal has either emerged or is foreseeable (Sussangkarn and Daniere, 1992).

Alternatively, Friedman and Douglas (1978) argue for the ***agropolitan approach***. They contend that to create balanced development, urban and rural localities should develop a linkage on a symbiotic, equal basis at lower territorial scales of interactions.[21] Other

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[18]Still, the more numerous private clinics and poly-clinics, for which the data is unreliable, should be considered. Taking those clinics into account, the share of the private sector would become even more dominant than the apparent 62% of the total hospital number in 1990.

[19]Besides the well-known economy of scale, Parr (1973) describes three more advantages that industrialization in a single location creates, namely the economies of urbanization, localization, and industrial linkages.

[20]Friedmann and Douglas (1978) suggest a territorial unit called an 'agropolitan district,' encompassing a rural-urban population from 50,000 to 150,000 within a one-hour commuting range by generally available transportation. Essential features of this unit include: (1) a high degree of self-sufficiency and self-reliance in decision-making, based on popular participation at local levels; (2) diversification of

distinguished development approaches include market towns (Johnson, 1970), China's selective closure communalization approach (Friedman and Douglas 1978; Friedman and Weaver; 1979; Ertur, 1984), and the urban function in rural development (UFRD) approach (Rondinelli and Evans, 1983; Rondinelli, 1985). These contributions all provide strong arguments, but all in general are subject to the problem of wide variations with respect to geographical, socio-economic and political settings.

Recently, a growing number of governments in developing countries have been exploring ways of expanding the capabilities of ***secondary cities*** to contribute to rural development and to a more diffuse pattern of urbanization (Rondinelli, 1983, 1985). A strong emphasis on secondary cities is given to multiple development objectives by means of strengthening existing secondary cities in fulfilling functional gaps and upgrading smaller towns to intermediate size. Further emphasis is placed on diversifying the economic base of rural service centers and market towns. This strategy (the application of which needs careful examination) combines the concept of growth pole, Johnson's market centers and also the UFRD approach in linking service centers for rural development.

For the regional development of Thailand, the NUDPF Final Report argues for the ***regional network strategy*** (Chalamwong and Douglas, 1992). This strategy contends that urban and regional policies follow a two-track approach combining export-oriented manufacturing with a rural-based agricultural and agro-industry trajectory. The central core of this strategy is to link several regional settlements into a tight network of interaction which, as a totality, has a greater potential to prosper than focusing on a single major growth center in each region. This design calls for a broadening of urban planning practices, which are now primarily focused on developing urban infrastructure for urban populations, to more explicitly include region-serving development functions, such as agro-processing services, regional marketing and communications functions, agriculture technology support activities and area-wide planning functions. Importantly, the determination of a regional combination of those roles should be analytical and region-specific.

Nevertheless, strong indications (e.g., labor scarcities pushing wages up) suggest that the Thai economy should move very quickly into higher technology industries. The regional network approach allows for targeting corridors between major urban centers as sites for industrial parks that would include the provisioning of higher-order services—hospitals, universities, recreation—in nearby towns to provide the type of living environment needed to attract skilled labor personnel (including physicians and other health-related ones). Finally, the regional network approach calls for some modifications in the existing institutional structure related to decentralization of local planning and infrastructure investment.

## Policy on Urban Health Improvement

In response to the growing health hazards of urbanization, the World Health Organization (WHO) has advocated for the ***Healthy Cities*** project (Tsouros, 1991). Since 1985, the project has grown to include 30 project cities in Europe and 17 networks. Presently, it has become an international movement involving more than 400 cities in Europe, North America and Australia.

The Healthy Cities project strives to realize the vision of a healthy city.[22] Unlike most other WHO activities, this project has aimed to champion movements at the local rather than national level. Recognizing the complexity of the urban development process, the project's primary pursuit is to place health high on the strategic political agenda of cities and

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employment; (3) urban-rural industrial functions and their linkages to local economic structures; and, (4) utilization and evaluation of local resources and technologies.

[21]The project stresses four major strategies: visibility for health, political commitment and leadership, institutional change, and innovative activities.

concurrently carry out technical and operational measures. The project is oriented towards health promotion and environmental concerns.

In Thailand, the Seventh Plan (1992-1996) has placed a greater emphasis on urban health compared to its two predecessors. The policy under this Plan is aimed at improving the health of the *unserved* and underserved segments of the urban population as well as high-risk groups including children and the elderly. The BMNs are adopted as the basic quality of life that the population deserve to meet. The Plan underscores a need for working out a more relevant data system to better addressing urban health problems (MOPH, 1992).

Primarily, two major Ministries are assigned to implement the Seventh Plan's strategies. The Ministry of Interior (MOI)[23] is required to provide urban-health basic structure such as satellite health centers and implement community-based, and in particular environmentally-oriented, programs. The Ministry of Public Health (MOPH) is to supply more sophisticated health services through its general and specialized hospitals.[24] The Plan suggests a modification of organizational structure that enhances this inter-agency collaboration.

Finally, the Seventh Plan describes the possibility of institution-based programs such as that in schools, factories and businesses as well as some multi-party insurance schemes. This Plan, however, fails to address succinctly the roles of the private health sector despite its fast growing.

## Discussion and Recommendations

The demographic and economic projections and the development approaches as presented above point to the following trends:[25]

(1) Rapid expansion of urban communities, especially in the Extended BMR and several regional cities;
(2) Diversification of economic activities and supports among urban dwellers;
(3) Decentralization of local planning and administrative authority;
(4) Shared investment on infrastructure between the public and private sectors;
(5) Proliferation of private medical facilities in response to the increasing local demand.

The first trend suggests an urgent need for reorienting the country's health system and the urban component in particular. A point which needs addressed before looking for a relevant urban health system is the meaning of 'relevance,' which should be represented by the system's objective. The Seventh Plan asserts that a primary role of urban health activities is to serve the urban poor. A second objective recognized by the MOPH, though somewhat implicitly, is

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[22]Administratively, the MOI has an authority over the local governance, namely the municipality. Nonetheless, the MOI's primary interest does not emphasize public health. In 1991, only 17 of the 132 municipalities across the country had physicians, who altogether amounted to twenty-three. In all, those MOI agencies had 576 unfilled positions including that for 80 physicians, 149 nurses and 165 other health officers plus 200 more planned positions (MOPH, 1992).

[23]By 1992, public medical services in urban areas were primarily provided by MOPH provincial hospitals. Community-based programs were usually delivered through provincial and 'Muang' district health offices, both of which are under the MOPH.

[24]From a global vantage point, Roemer (1991) has examined health systems in 68 countries and identified common rising trends including: urbanization, industrialization, education, democracy, international trade, and demographic changes. Regarding the national health system *per se*, he points out the trends to include: more organization, resource expansion, increased utilization of services, rising expenditures, collectivized financing, more cost-containing strategies, improving efficiency, higher technology, integration of prevention and primary health care, broadened scope of public responsibilities, and popular participation in policy determination.

to compromise the dualism between the rural and urban health systems.[26] However, as an element[27] of regional development, urban health development should take part and contribute to such a process. Unless the health system establishes itself as an active component of the development process, it would experience increasing conflict both among its own subsystems and with the environment leading to disintegration. On the other hand, as an active element of the overall movement, the planning thereof would mediate with a position to influence the development impetus so the two other objectives could be brought up in the regional development agenda. Therefore, this should be considered a third challenge of the urban health planning.

Roemer (1991) has analyzed data of 142 countries and found that the factors of strongest association with health outcomes (as measured by the life expectancy at birth) are female literacy and access to safe water. Both factors are considered attributes of the national society and not that of the national health system. When controlled for societal characteristics, however, he found a general superiority of strongly organized health systems to weakly organized ones. He also points out a trend of increasing public intervention in the market in most health systems. The findings suggest an implication supporting the third challenge of the urban health planning. If population improvement is the main objective, social policy calls for strategies to strengthening both the operation of national health systems and people's overall standards of living. It also implies that health promotion and environmental protection programs are of no less importance than the delivery of health services.

First, a strategy needed to pursue the three objectives is a national planning position. As urban centers proliferate and their interlinkages become more complex, urban planning thus needs to be addressed in a national context. A national framework (e.g., the Final Report) should be formulated so every participating party looks to a common set of development goals. Health agenda should be brought to a national-level board[28] with an emphasis on visibility. A health subcommittee should also be established. Moreover, the decentralization trend suggests that planning at the local level would take an increasing role and some institutional changes are not beyond anticipation. Furthermore, the regional network approach calls for more territorially-oriented planning, so strengthening local planners is indicated.[29] In addition, for technical planning, the health region should superimpose on the socio-economic development region.

Second, coming to the health services system, because medical care is so unique, reliance solely on the 'invisible hand' would be subject to market failure and ethical clashes. The diversification and decentralization trends suggest a low possibility of a single 'all-purpose' model. Since the government provides only about a quarter of the total health care expenditure and about three-quarters come from the consumers' pockets, the decision-making power inevitably should rely on the consumer. Moreover, the shared-investment trend and the current emergence of private institutions and third-party insurance business all point to a

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[25]Reports including those by the Health Planning Division suggest an increasing competition for health resources between the two systems and between the public and private sectors. Often moral hazards are reported by the media. Furthermore, recent legislation suggest a trend favoring medical insurance about which Friedman (1986) describes as a tendency towards over-consumption and moral hazards.

[26]Roemer (1991) contends that the health system is always being modified through pressure from the larger society (i.e., the system to which it belongs) as well as from within the dynamics of the system itself.

[27]The Final Report recommends that a national board on urban development be chaired by the Prime Minister.

[28]Friedman and Weaver (1979) describe two approaches of regional planning: functional and territorial. The former is the dominant method in the growth pole concept, while the latter is used in the agropolitan and selective closure ideologies.

multiparty decision-making in the near future. A most essential element for such a process is a reliable data system. Data are also needed for instigating accountability and quality control mechanisms.

Third, within the public sector, a more cooperative planning process between the MUA, MOPH and MOI is needed especially to ameliorate the extreme concentration of hospital beds at the inner city core. Rather than congregating at a single site, the university may consider establishing satellite campuses within the Extended BMR and at emerging regional urban centers. The satellite hospitals could be of medium-size so that the case mix for teaching would not be compromised. Furthermore, such satellite campuses, which are located either in campus towns or newly urbanizing zones, would also provide the health and educational infrastructure needed for regional development. This approach would also extend the geographical market share of the public sector without compromising the training capability of the university and living conditions of teaching staff.

Fourth, the services delivery system to the urban poor should be formulated. Currently this is an ongoing process with participation from both the MOI and MOPH Alternatives may include physical and transactional provision (or their combination).

Fifth, another subject the MOPH should consider is the provision of health services to emerging communities outside of municipality boundaries. A second-order satellite network is a possibility in response to emerging new communities. Likely, those communities are comprised of factory workers who, albeit earning above the poverty line, are considered low-income. Since those communities tend to emerge along highways and connecting roads, increasing incidence of traffic and occupational accidents are anticipated. Nonetheless, not only physical services but also a transfer system and financing support to those groups should be thought of.

Finally, to deal with the public-private mix issue, health planners should consider managing the underlying threats resulting from urbanization. The issue of public-private mix, albeit the various symptoms, has a root stemming from a defective market. On the consumer side, information about services is inadequate and could be corrected. On the supplier side, regardless of who the provider is, the dominant incentive has been fee-for-service, and, more recently, full-coverage insurance. Thus, it is the rule rather than competition that generates adverse symptoms. Furthermore, inefficiency has been ingrained in the public sector. Thus, strategic steps should be taken to improve the management of public hospitals. Policy tools such as the health maintenance organization model, co-payments, user fees, deductibles, conditional licensure, strategic recruitment, etc, are all available.

## Conclusion

Thailand is projected to undergo a major population change over the next 15 to 20 years. About 14.8 million people will be added to the present urban population whereas only 0.3 million will make up the net rural increase. Expectedly, almost a half of the total population will become urbanites by 2010. Areas that are expected to become more densely populated include Bangkok and its peripheral provinces (known as the BMR), provinces in the central plain, the East, the South and some regional cities. Urban-like economic activities including employment in industrial and service sectors will be more predominant as income sources both in urban and rural areas. Still, under the current trend, regional inequality will be more pronounced without any emerging sign of a polarization reversal. Currently, the urban poor amount to about 1.2 million people and about one-third live in the BMR. Urbanization, moreover, is believed to have an indirect bearing upon community illness patterns and health-seeking behavior. The urban health system is also affecting that of the rural sector.

Development of the urban health system depends upon governmental approaches to socio-economic development. The regional network approach is presently advocated to bring about both economic success and regional balance. This approach calls for development planning focusing on regional potential and a symbiotic relationship between the urban area and its hinterland. It also calls for designing social services to meet region-supporting functions of

the urban element.

This report presents background information for analyzing urbanization and the health service system at the macro-level. Further, it argues for three mandates that urban health planning should adopt: (1) providing services to needy groups; (2) harmonizing the urban-rural dualism; and, (3) fulfilling region-supporting functions. It is recommended that development planning take part in the national arena while the local planning capacity be strengthened at the local level. Effective data bases and information systems are also urgently needed. In addition, cooperative planning should be considered among the Ministries of University Affairs, Interior and Public Health. Steps should be taken to handle each of those forces resulting from progressive urbanization. Finally, the public-private dilemma should be counteracted by built-in mechanisms that counter the fee-for-service and full-coverage insurance.

Appendix 1
Projection of Urban Population (thousand)
and Percent Urbanized by Region

| Region | 1990 | | 1995 | | 2000 | | 2005 | |
|---|---|---|---|---|---|---|---|---|
| | ('000) | % | ('000) | % | ('000) | % | ('000) | % |
| BMA | 6,162 | 100 | 6,679 | 100 | 7,149 | 100 | 7,577 | 100 |
| 5 provinces | 1,551 | 55 | 1,981 | 62 | 2,459 | 67 | 2,971 | 72 |
| Upper central | 759 | 27 | 889 | 31 | 1,037 | 34 | 1,119 | 38 |
| East | 1,161 | 33 | 1,467 | 38 | 1,819 | 44 | 2,209 | 49 |
| West | 951 | 29 | 1,115 | 33 | 1,295 | 36 | 1,488 | 39 |
| Northwest | 3,463 | 18 | 4,330 | 21 | 5,342 | 25 | 6,490 | 29 |
| North | 2,567 | 24 | 3,051 | 27 | 3,575 | 30 | 4,132 | 34 |
| South | 1,513 | 20 | 1,891 | 23 | 2,314 | 26 | 2,798 | 29 |
| Thailand | 18,123 | 32 | 21,430 | 36 | 24,989 | 39 | 28,359 | 43 |

*Source*: Sussangkarn C, Daniere A. (1992). Global and National Issues in Thailand's Development. *National Urban Development Policy Framework Final Report*, Joint Report by NESDB, UNDP and TDRI, Bangkok, Table 3-2.

Appendix 2
Projection of Total Employment by Sector, 1991-2000

| Sector | 1991 | 1996 | 2000 |
|---|---|---|---|
| ***Manufacturing*** | | | |
| Employment ('000) | 3,949 | 4,683 | 5,294 |
| Share (percent) | 11.7 | 12.8 | 13.8 |
| Rate of Growth (percent) | 4.0 | 3.4 | 3.0 |
| ***Services*** | | | |
| Employment ('000) | 8,156 | 10,204 | 11,869 |
| Share (percent) | 24.2 | 28.0 | 31.1 |
| Rate of Growth (percent) | 5.4 | 4.4 | 3.6 |
| ***Agriculture*** | | | |
| Employment ('000) | 21,632 | 21,621 | 21,069 |
| Share (percent) | 64.1 | 59.2 | 55.1 |
| Rate of Growth (percent) | 0.7 | (0.2) | (0.8) |
| ***Total*** | | | |
| Employment ('000) | 33,737 | 36,508 | 38,232 |
| Share (percent) | 100.0 | 100.0 | 100.0 |
| Rate of Growth (percent) | 2.2 | 1.5 | 1.0 |

*Source*: Modified from Ashakul et al. (1992), Table 7.2.

Appendix 3
Number of BOI-privileged Projects, 1979-May 1990

| | Thai - Local | | Foreign | |
|---|---|---|---|---|
| | # | Percent | # | Percent |
| Northeast | 21 | 3.7 | 8 | 3.8 |
| North | 19 | 3.4 | 5 | 2.4 |
| South | 58 | 10.3 | 18 | 8.5 |
| East-central | 7 | 1.2 | 1 | 0.5 |
| West-central | 30 | 5.3 | 7 | 3.3 |
| Upper-central | 36 | 6.4 | 13 | 6.1 |
| 5 provinces (Inner ring) | 226 | 40.3 | 146 | 69.9 |
| Bangkok | 110 | 19.6 | 44 | 20.8 |
| ESB | 54 | 9.6 | 38 | 18.0 |
| Total | 561 | 100.0 | 212 | 100.0 |

*Source*: Board of Investment, *Active Report.*

Appendix 4
Distribution of Public and Private Hospitals by Region

| Region | Ministry of Public Health | | Other Ministries | | Private Hospitals | |
|---|---|---|---|---|---|---|
| | Number | Beds | Number | Beds | Number | Beds |
| BMA | 12 | 5,127 | 28 | 11,123 | 65 | 4,891 |
| Five Provinces | 33 | 7,245 | 3 | 481 | 11 | 752 |
| Samut Prakarn | 7 | 1,807 | 1 | 30 | 5 | 516 |
| Samut Sakhon | 3 | 360 | - | - | 1 | 10 |
| Nonthaburi | 9 | 3,609 | - | - | 2 | 151 |
| Pathum Thani | 6 | 809 | 1 | 101 | 2 | 50 |
| Nakhon Pathom | 8 | 660 | 1 | 350 | 1 | 25 |
| ESB | 24 | 2,096 | 8 | 995 | 21 | 424 |
| Chon Buri | 11 | 1,087 | 7 | 965 | 12 | 337 |
| Rayong | 6 | 520 | 1 | 30 | 3 | 45 |
| Chachoengsao | 7 | 489 | - | - | 6 | 42 |
| North | 161 | 11,792 | 14 | 2,452 | 45 | 1,911 |
| Northeast | 248 | 15,668 | 9 | 1,743 | 35 | 1,149 |
| South | 114 | 9,502 | 9 | 1,223 | 39 | 1,064 |
| Central | 174 | 20,076 | 28 | 2,894 | 82 | 2,484 |
| Saraburi | 8 | 1,233 | 1 | 60 | 1 | 103 |
| Ayutthaya | 12 | 590 | 1 | 10 | 2 | 16 |
| Extended BMR | 65 | 6,968 | 33 | 11,123 | 79 | 5,762 |
| Thailand | 736 | 62,165 | 88 | 19,916 | 266 | 11,499 |

*Source*: Health Resources Survey, 1991, MOPH.

Appendix 5
Density of Hospitals, Hospital Beds, and Physicians by Region

| Region | Population | Hospitals (per million) | | | | Beds per 1,000 | Physicians per million |
|---|---|---|---|---|---|---|---|
| | | Public | Private | Total | Public/Private | | |
| BMA | 5,588,000 | 7.2 | 11.6 | 18.8 | 0.6 | 2.91 | 1,044 |
| Five Provinces | 2,883,913 | 12.5 | 3.8 | 16.3 | 3.3 | 2.68 | 124 |
| Samut Prakarn | 868,400 | 9.2 | 5.8 | 15.0 | 1.6 | 2.12 | 86 |
| Samut Sakhon | 206,238 | 14.5 | 4.8 | 19.4 | 3.0 | 1.75 | 136 |
| Nonthaburi | 678,738 | 13.1 | 2.9 | 16.0 | 4.5 | 5.25 | 199 |
| Pathum Thani | 460,055 | 15.2 | 4.3 | 19.6 | 3.5 | 1.98 | 96 |
| Nakhon Pathom | 661,482 | 13.6 | 1.5 | 15.1 | 9.0 | 1.53 | 113 |
| ESB | 1,961,194 | 16.3 | 10.7 | 27.0 | 1.5 | 1.58 | 120 |
| Chon Buri | 917,263 | 19.6 | 13.1 | 32.7 | 1.5 | 2.24 | 133 |
| Rayong | 456,714 | 15.3 | 6.6 | 21.9 | 2.3 | 1.20 | 127 |
| Chachoengsao | 587,217 | 11.9 | 10.2 | 22.1 | 1.2 | 0.83 | 94 |
| North | 11,651,824 | 15.0 | 3.9 | 18.9 | 3.9 | 1.22 | 89 |
| Northeast | 19,943,885 | 12.9 | 1.8 | 14.6 | 7.3 | 0.87 | 66 |
| South | 7,342,223 | 16.8 | 5.3 | 22.1 | 3.2 | 1.46 | 107 |
| Central | 12,927,313 | 15.6 | 6.3 | 22.0 | 2.5 | 1.78 | 106 |
| Saraburi | 537,774 | 16.7 | 1.9 | 18.6 | 9.0 | 2.40 | 169 |
| Ayutthaya | 688,887 | 18.9 | 2.9 | 21.8 | 6.5 | 0.87 | 107 |
| Extended BMR | 8,775,855 | 10.7 | 10.1 | 20.9 | 1.1 | 2.42 | 710 |
| Thailand | 57,453,245 | 13.9 | 4.6 | 18.5 | 3.0 | 1.42 | 180 |

**Source:** Calculations derived from data of the 1991 Health Resources Survey, MOPH, and 1991 Population Registry, MOI.

Appendix 6
Growth Pole and Regional Network Models Compared

| Component | Growth Pole Model | Regional Network Model |
|---|---|---|
| Basic Sector | Urban-based manufacturing; usually focuses on large-scale 'propulsive' industries and 'footloose' production units headquartered outside the region. | All sectors depending on local regional endowments and conditions; emphasis on local small-medium size regionally-based enterprises |
| Urban System | Hierachical, centered on a single dominant center, usually identified by population size and associated with the assumptions of central place theory. | Horizontal, composed of a number of centers and their hinterlands, each with own specializations and comparative advantages. |
| Rural-urban Relations | Images of diffusion processes moving down the urban hierarchy and outward from the city/town to its rural periphery. Rural areas as passive beneficiaries of 'trickle-down' from urban growth. | Image of complex rural- urban field of activities, with growth stimuli emanating from both rural and urban areas and with the intensity increasing along regional inter-settlement transportation corridors. |
| Planning Style | Usually top-down via sectoral planning agencies and thier field offices. Regions have 'misty' boundaries determined by econmic interaction. | Implies the need for decentralized planning systems, with integration and coordination of multi-sectoral and rural and urban activities at the local level. |
| Major Policy Areas | Industrial decentralization incentives: tax holidays, industrial estates, national transportation trunk roads. | Agriculture diversification, agro-industry, resource-based manufacturing, urban services, manpower training, local inter-settlement transportation networks. |

*Source*: Douglas, C. M. "Urban and Regional Development Policy for the Seventh Five-Year Plan in Thailand," paper prepared for the National Urban Development Policy Framework Project NESDB/TDRI, October, 1990, Table 2.

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# Quality Assurance of Medical Care in Thailand

**Anuwat Supachutikul**

## Introduction

Changes in the socioeconomic status of the country is believed to have indirect effects upon the health service delivery system. As people become better off they tend to have higher expectations of the health services and the private sector often takes this opportunity to increase its role in providing care. Various studies have revealed that people are more satisfied with the private health service than with the public one. The public sector has been found to have weaknesses in the areas of interpersonal relationships and the quality of amenities. However the technical competence of the private sector, especially smaller hospitals, remains doubtful.

Attempts to improve quality of care have ranged from setting standards, exercising control by government and professional organizations, improvement of hospital information systems, experiments of various quality assurance techniques and staff training to produce changes in behavior.

## Development of Rural Health Service System Project

This project was launched by the Ministry of Public Health (MOPH) in 1986 with the ultimate goal that every Thai citizen, regardless of socioeconomic status, should have equal access to standard health services. The strategy was to set up a number of networks of health facilities in rural areas for self improvement based on helping each other. A regional hospital functioned at the center of the network. All health facilities, i.e., general hospitals, community hospitals and health centers in each respective region would be included in the network. Following this approach, all health facilities within the network should help each other improve their service capabilities up to a standard level. Those patients requiring services beyond the capacity of the primary level health facility would be referred onwards in the system. The grouping of health facilities to form networks was based upon the existing referral pattern. Nine groups of experts were recruited at the national level to develop standards and guidelines for implementation, monitoring and evaluation in each program area. These areas were clinical services, nursing services, dental services, social medicine, administrative support, other support services, technical and resource coordination, laboratory services and building construction. Project administrative bodies were set up at regional, network, provincial and district levels. Local working groups were formed at the network and provincial levels.

At the beginning of the project, major activities concentrated on evaluating existing institutional capability and needs for improvement as assessed in comparison with the standards established by the national and local experts. The project facilitated the prioritization of capital investment within a network. However, there were certain limitations as decisions were not always based on sound and consistent criteria or adequate information. Training lectures and training programs which were formerly done at the hospital level or provincial level were transferred to be undertaken at the network level.

Later the project focussed more on the promotion of research carried out by the networks. The nature of the research is multidisciplinary and emphasises feasible improvements in health service delivery systems. A very good example has been, "The Integrated Provincial Trauma Service in Khon Kaen Province". This project analyzed problems in organizing services for trauma patients and it was found that the mortality rate of patients with head injuries from

surrounding districts was higher than that of the patients in Amphur Muang. A number of inappropriate aspects of care and management at community hospitals were identified and corrective actions were recommended.

To sum up, the benefits of this project were: 1) strengthening effective teamwork within a network; 2) promoting regional planning as a basis for decentralization; 3) improvement of the health service delivery system; and 4) technology transfer between and within networks.

However, problems with the assessment of quality presented limitations to the project. The standard set for measurement of institutional capacity covered only the performance capabilities of selected activities. Processes identifying problems in quality of care and the process of solving those problems were not recognized. Most health managers at the provincial level believed that all improvements needed money. If the project could not mobilize more resources, then the province was not in the position to improve itself to meet the standard. Very few people realized that quality improvement could be achieved with less money than expected, and could save money in the long run. An interesting observation was that project managers at the central level overly emphasized to a great extent the monitoring of the process. Extreme caution might have the drawback of limiting the vision of people at the local level.

It would be a good outcome of the project if it could introduce the concept of sustaining quality improvement through problem solving processes. This could be done by selecting some hospitals as pilot studies and demonstration sites for quality assurance programs while providing them technical support. The measures to achieve essential adaptation or reorientation of Thai culture could be refined during the pilot studies. The Health Service Network Project has rendered ample opportunity for technology transfer and will facilitate rapid expansion of the program.

## The Role of the Medical Council

The Thai Medical Council was established under the Medical Profession Act of 1982. Its major functions are to maintain standards and ethics of medical practice and to promote continuing education for physicians. As stipulated in the Act, either a physician or patients can forward a complaint of medical malpractice to the Medical Council. The Thai Medical Council Committee has two sub-committees namely the Ethical Subcommittee and Investigation Subcommittee. These sub-committees investigate and pass a resolution as to whether the complaint is upheld and if so the nature of punishment. Punishment ranges from sending a notice of threat to suspend the doctor's license to withdrawal of license. This type of control is passive and is generally considered the last resort for control of quality of care by physicians. The number of complaints has been so small that this mechanism cannot be adequate to ensure overall quality (Table 1).

**Table 1** Resolutions of the Thai Medical Council during 1987-1992

| Actions | Number |
|---|---|
| Admonish | 14 |
| Notice | 14 |
| Warning | 18 |
| Suspend license | 13 |
| Withdrawal of license | 1 |

In recent years, the Thai Medical Council has been contemplating additional measures for quality improvement. The first which has been deemed appropriate is an accreditation process while the second is a period of training to be added to the first year of compulsory work.

In 1992, the Thai Medical Council printed the first draft of an accreditation manual for general hospitals which have at least 100 beds. The reorientation and adaptation of hospitals contracted with the Social Security Office is being undertaken.

All physicians graduating in Thailand have to take up compulsory service in the public sector for three years. Most are assigned work in community hospitals in rural areas. This is one of the factors causing a rapid turnover rate of physicians in community hospitals. Competency of physicians working in community hospitals is also considered a problem. A pre-service training program for newly qualified physicians in hospitals with highly skilled staff is being planned. This approach should help improve their competency to the level required for working on their own in community hospitals or elsewhere in the subsequent years. At the same time, senior physicians in training hospitals will have to improve their academic and technical capabilities.

## Government Control

Thailand enforced the Health Facility Act in 1951 (B.E. 2504) with the main purpose of controlling private health facilities. The components being controlled are: 1) physical facilities; 2) number and quality of health personnel; 3) responsible persons; and 4) patient's record. However, physical quality may not be a good indicator of the quality of service. At present, most private hospitals have physical facilities which are far above those stated in the ministerial regulations. Control measures in the future should focus on indicators which are more relevant to quality of services such as standards for prevention of nosocomial infection, procedures for admission, use of technology, standards of treatment, etc.

## Hospital Information Systems

A continuing effort to improve health information systems had been made for more than a decade. The final outcome is a reporting system spanning hospital activities and including some clinical information requested by all relevant divisions in the MOPH. Personnel at service outlets previously did not make use of the data they collected. The clinical reports are in summarized forms, i.e., number of outpatients by 17 groups of disease, number of admissions by 65 groups of disease. The only data reported on an individual basis is mortality data.

The driving force for improving clinical information systems came from at least three sources. The first was the need of the physician for more accurate clinical information enabling them to complete the evaluation form to upgrade their status in the position classification (PC) system. The second was the need of the MOPH for more accurate clinical information to be used in planning and monitoring. The third entailed data requirements of the Social Security Office which is obliged to pay for hospitals to cover medical benefits of insured employees.

The Health Statistics Division of the MOPH is a key body responsible for running the national health information system. Every patient admitted to a public hospital has a brief medical history. A system for capturing this personal information together with billing information in an electronic form has been set up for all Social Security patients. Formulation of a set of minimal data required for strategic planning at the national level is being developed through a forum of those involved in the information systems. However, the data obtained from the existing system are of limited use for quality assessment. Only length of stay and case-fatality rate by diagnosis are available. Information on adverse events or complications are under-reported. Compliance of private hospitals and teaching hospitals is another problem.

The Provincial Hospital Division, in collaboration with the Health Statistics Division, has a plan to introduce computerized hospital information systems in 30 out of 89 general/regional hospitals. A system analysis is being done by a group of experts. However, which area of hospital information systems should be started with still remains an area of controversy. Pressure for a system of patient registration is strong. The adequacy and completeness of the patient's brief medical history has not received much attention. In the absence of any quality assurance process, no one knows which information should be collected; on the other hand, no one could start any program of quality assurance without adequate information and good medical record backup. Even incomplete clinical abstracts could enhance quality assurance process to a certain extent. The sources of information for quality assurance must come from both routine data collection and ad hoc collection.

## Accreditation Process

The Social Security Office is planning to use an accreditation process for approving hospitals that will be main contractors. Its Medical Committee has applied the relevant standards set by the Thai Medical Council. It is now under the process of refining and adapting the standards with the assistance of the Health Systems Research Institute. The standards will be tested in voluntary hospitals before submission to the Medical Committee.

## Experience of Ramathibodi Hospital

Ramathibodi has introduced programmes for improving personnel performance since 1986. The success of the private sector in this undertaking stimulated and challenged the administrators at that time. A team of external resource persons was invited to give a series of lectures on, "The Technique of Good Service". At the outset there was some opposition from personnel because of their perception that what they had been doing was not good enough. Most professionals felt that they were superior to their clients. The key to success in overcoming these feelings was: 1) utilizing group processes to build up good relationships and enjoyment within groups, 2) continuity of training, and 3) making use of an external moderator.

Later, a committee responsible for improving nonphysician performance was set up. Various courses suitable for each particular professional group were designed. Group processes and teamwork were emphasised. The most important benefit gained was effective informal relations among people in different departments. The working environment improved.

The concept of the QC circle was introduced during a course on theory of management. In the beginning people did not really understand what it was. The first group that applied the concept of the QC circle was the medical record unit. The concept of thinking and working as a team was achieved and the outcome was quite favorable. QC circles were then disseminated to other units. As a complementary activity, training courses on technical skills were arranged according to the needs of each group. After three years of trial and error, the QC circle was accepted as a useful tool for participatory management. The important factors facilitating the success were: strong policy commitment, adequate budgetary support for training and implementation, official permission for using working hours for QC group meetings and starting with good group relations.

The success of using the QC circle in Ramathibodi challenged some managers' opinions that the QC circle would not work in Thailand because Thai people are not assertive. They do not like expressing their ideas or feelings, particularly negative ones. In some instances the main obstacle is the attitude of the managers themselves. Low expectations for QC and resistance of authoritative managers are among frequent findings.

Following this approach the standard procedures set up by one group could be applied voluntarily by the others. However, the nature of the group and its culture must be carefully

taken into consideration before applying standards generated by other units. A good example was the replication of an appointment system started in Obstetric clinic in other OPDs.

Most of the issues selected for QC were related to support services rather than clinical services. This was a good starting point for gaining acceptance of the concept. One senior physician said that all physicians were familiar with problem solving principles and thus were capable of applying this principle in solving the problems in clinical service. The main constraints might be the over self-confidence and a desire for professional autonomy among physicians.

## Attempts for Quality Improvement in MOPH Hospitals

Attempts at quality improvement in hospitals under the auspices of the Ministry of Public Health (MOPH), and especially general and regional hospitals, have come from both the Ministry and the hospitals themselves. The MOPH, through its Provincial Hospital Division, has set up standard performances for certain services such as emergency services, operative services, obstetric services, etc. All provincial hospitals are evaluated against these standards. Moreover, a proposal for expanding OPD services outside regular working hours was suggested to increase accessibility for patients.

The attempts by some hospitals in the recent years have include: 1) organizational development (OD) training; 2) increasing excellence in services; and 3) environmental improvement. Attempts for improving quality of medical services have not been made.

The process of OD has been applied in at least three provincial hospitals, namely Prachuabkhirikhan, Potharam and Samutprakarn. The findings of a subjective evaluation revealed that the process brought about a better working environment and the staff became more willing to improve their performance.

Learning from the private sector makes "excellence in service" possible even in public hospitals. A strong policy commitment and arrangement of training courses are necessary. Uttaradit hospital is known for its past success in environmental improvement through community participation. Making physical changes feasible, the director then challenged his personnel whether "excellence in service" could be established. Making services far beyond peoples' expectations is a synopsis of what had to be done. A public relations nurse acting as a captain in a restaurant together with a nurse counsellor will observe problemmatic cases at the OPD. The nurse in-charge of each ward will be assigned to be a patient relations nurse on a rotating basis. The rewards are the increased respect from patients and work satisfaction. However, physicians are excluded from these programs.

## Attitudes of Physicians Towards Quality Improvement Measures

It can be stated that a systematic quality assurance program in Thailand does not exist. While many activities seem to be included in quality assurance programs for medical care, they are not organized in a systematic manner. To initiate systematic action, one should attempt to fully understand the attitude of key persons involved. A rapid survey was done among physicians who are deputy directors of general or regional hospitals. Forty-eight responses were received from 89 hospitals. They were asked whether they agree that the measures on the list might have an effect on quality improvement and at what level had actually been undertaken. The results are presented in Tables 2 and 3.

Data indicate a high degree of agreement that measures in the questionnaire affect quality improvement (range 81.3% to 97.9%). Measures with the highest agreement were: 1) participation of all parties in analyzing and solving problems of clinical services; 2) alert and cooperative team and nosocomial infection surveillance; 3) good environment; 4) efficient drug and medical supply procurement; 5) good communication within an organization; and 6) using data for problem solving. The measures with the least agreement were: 1) clinical audit; 2) using QC circle; 3) complaint system. These constituted the activities with which Thai

physicians are not familiar. It was very striking that the principles of participation, teamwork, communication and using data for problem solving were highly appreciated. Compliance with these principles would yield a successful quality assurance program.

**Table 2** Level of agreement or disagreement with measures that might affect quality improvement (in percentage)

| Activities | HD | D | N | A | HA | A+HA |
|---|---|---|---|---|---|---|
| Participation | 2.1 | | | 14.6 | 83.3 | 97.9 |
| Alert and cooperative team | 2.1 | | | 14.6 | 83.3 | 97.9 |
| Nosocomial infection surveillance | 2.1 | | | 20.8 | 77.1 | 97.9 |
| Good environment | | 2.1 | | 22.9 | 75.0 | 97.9 |
| Drug purchasing | | 2.1 | | 27.1 | 70.8 | 97.9 |
| Good communication | 2.1 | | | 33.3 | 64.6 | 97.9 |
| Use of data for problem solving | 2.1 | | | 33.3 | 64.6 | 97.9 |
| Adequate equipment | | 2.1 | 2.1 | 16.7 | 79.2 | 95.8 |
| Use data for behavior change | | 2.1 | 2.1 | 35.4 | 60.4 | 95.8 |
| Problem based training | | 2.1 | 2.1 | 45.8 | 50.0 | 95.8 |
| Drug utility review | | 4.2 | | 50.0 | 45.8 | 95.8 |
| Good medical record | 2.1 | | 4.2 | 39.6 | 54.2 | 95.8 |
| Standard setting (general) | 2.1 | | 4.2 | 50.0 | 43.8 | 93.8 |
| Standard setting (medical) | | 2.1 | 6.3 | 45.8 | 45.9 | 91.6 |
| Working manual | | 4.2 | 6.3 | 37.5 | 52.1 | 89.6 |
| Morbidity/mortality conference | | 4.2 | 6.3 | 47.9 | 41.7 | 89.6 |
| Complaint system | 2.1 | | 10.4 | 27.1 | 60.4 | 87.5 |
| Use QC circle | | 4.2 | 10.4 | 41.7 | 43.8 | 85.5 |
| Clinical audit | 4.2 | 4.2 | 10.4 | 54.2 | 27.1 | 81.3 |

**NOTE:** HD = Highly disagree; D = Disagree; N = No opinion; A = Agree; HA = Highly agree

The most highly impractical measures appeared to be: 1) clinical audit; 2) morbidity and mortality conference; 3) drug utilization review; 4) using QC circle; 5) good medical record; and 6) setting standard for medical service. Most of these activities were seen as an investigative measure for fault detection. Whatever measures to be used in quality assurance program, they should not create such negative feeling.

**Table 3** Percentage of measures actually undertaken vs. planned and impractical ones (n=48)

| Activities | I | P | F | W | F+W |
|---|---|---|---|---|---|
| Clinical audit | 27.1 | 47.9 | 12.5 | 10.4 | 22.9 |
| Morbidity/mortality conference | 20.8 | 47.9 | 22.9 | 8.3 | 31.2 |
| Drug utility review | 16.7 | 35.4 | 29.2 | 18.3 | 48.0 |
| Use QC circle | 16.7 | 62.5 | 18.8 | 2.1 | 20.9 |
| Good medical record | 10.4 | 20.8 | 58.3 | 10.4 | 68.7 |
| Standard setting (medical) | 10.4 | 51.1 | 25.0 | 12.5 | 37.5 |
| Use data for behavior change | 8.3 | 35.4 | 39.6 | 16.7 | 56.3 |
| Alert and cooperative team | 6.3 | 8.3 | 45.8 | 39.6 | 85.4 |
| Participation | 4.2 | 10.4 | 60.4 | 22.9 | 83.3 |
| Use of data for problem solving | 4.2 | 27.1 | 52.1 | 16.7 | 68.8 |
| Adequate equipment | 4.2 | 6.3 | 43.8 | 45.8 | 89.6 |
| Standard setting (general) | 4.2 | 31.3 | 37.5 | 27.1 | 64.6 |
| Good environment | 2.1 | 12.5 | 54.2 | 31.3 | 85.5 |
| Problem based training | 2.1 | 27.1 | 39.6 | 31.3 | 70.9 |
| Good communication | | 6.3 | 60.4 | 33.3 | 93.7 |
| Drug purchasing | | 8.3 | 41.7 | 50.0 | 91.7 |
| Nosocomial infection surveillance | | 6.3 | 47.9 | 45.8 | 93.7 |
| Manual | | 47.9 | 39.6 | 12.5 | 52.1 |
| Complaint system | | 8.3 | 56.3 | 35.4 | 91.7 |

**NOTE:** I = Impractical; P = Planned activities (to be implemented); F = Fairly done; W = Well done

The well done measures are: 1) drug and medical supply procurement system (50.0%); 2) adequate equipment (45.8%); 3) nosocomial infection surveillance (45.8%). It should be noted that these activities have been in place for nearly a decade.

The measures that the results were fairly good constituted the following: 1) participation of all parties in problem solving (60.4%); 2) good communication in an organization (60.4%); 3) good medical record (58.3%); 4) complaint system (56.3%) and good environment (54.2%).

## Progress of Quality Improvement Activities

The concept of Quality Improvement was reviewed by the Health Systems Research Institute. It was decided that the modern concept of Total Quality Management or Continuous Quality Improvement will be experimented in 9 public hospitals around Bangkok. The awareness sessions on TQM/CQI will be provided to all the hospital administrators. The participating hospitals are expected to appoint a study team to work on this pilot project to try

out innovative tools and techniques of quality improvement. Training for behavioral changes and "excellence in service" will be encouraged. A network of the participating hospitals will be formed and regular meetings for experience sharing will be held. Evaluation will be done on three aspects: the success of the pilot project, the expansion of TQM/CQI in the hospital, and the critical facilitating factors enhancing quality improvement.

# Rational Use of Drugs

**Suwit Vibulpolprasert**

## National Drug Policy and Essential Drug Program

### *First National Drug Policy*

In response to problems of inadequate and inequitable distribution of essential drugs to the general population, as well as insufficient local production of good quality drugs, the first National Drug Policy was developed in 1981. The policy includes:

(1) Supply of safe and good quality drugs at reasonable prices with special emphasis on primary health care. This includes improvement of the logistics of drug supply and the promotion of local drug production, both in private and public sectors;

(2) Wastage of drugs will be curbed by strict adherence to the National Formulary and Essential Drug Lists and dissemination of comprehensive information to the medical profession regarding drugs and treatment regimens;

(3) As an important component of the quality assurance scheme, strengthening drug analytical facilities, including the testing of biological and immunological products and development of a responsible organization for drug standards, drug analysis and reference substances will be carried out;

(4) A survey of the indigenous raw materials available to investigate the possibility of developing significant drug production utilizing local resources to develop the country's self-reliance; and,

(5) Intensively exploring the therapeutic potential of "Traditional Drugs" for safe and efficacious use, especially in primary health care.

### *Implementation of the Drug Policy*

#### National Drug Policy Committee

The National Drug Policy Committee was appointed by the cabinet with members comprising high-ranking officials of the Ministry of Public Health, Ministry of University Affairs, the Government Pharmaceutical Organization, National Economic and Social Development Board, Ministry of Commerce, Ministry of Industry, Ministry of Science, Technology and Environment and other relevant ministries.

This committee appointed several subcommittees to carry out certain important tasks such as:

(1) Subcommittee for development of essential drug list;
(2) Subcommittee for development of standard treatment regimens;
(3) Subcommittee for promotion of rational use of drugs;
(4) Subcommittee for development of National Formularies;
(5) Subcommittee for public relations; and
(6) Subcommittee for development of handbook for essential drugs list.

## Achievement of National Drug Policy

*Availability of Essential Drugs.* Due to the rapid development of the health service infrastructure, especially in rural areas, essential drugs are now widely available through several health service facilities due in part to widescale production. For example, by 1992 there were 650 district hospitals and 8,000 health centres which covered more than 90% of the districts and 98% of the communes. By that same year, more than 35,000 village drug funds with basic essential drugs were established covering about 60% of all rural villages. Regarding the local production of drugs, there are at present 174 local manufacturers producing good quality drugs and providing for 70% of total consumption. This figure has increased from 50% in 1978. Fifteen bulk raw materials were produced locally by six manufacturers. Estimated total drug consumption in 1992 was baht 25,000 million (whole sale price) and baht 60,000 million (retail price). Nonetheless, while there are about 30,000 registered drugs in Thailand, only one-third of these are really featured in the market place.

*Promotion of Rational Use of Drugs.* In 1981, the first National Essential Drugs List was developed and used in all health service facilities of the Ministry of Public Health. Since 1986, its usage has been expanded to cover all government institutions. It has been revised four times, most recently for the 1992 edition which contained 348 items. A survey of 1,088 physicians and pharmacists in 1992 revealed that 98.99% of the respondents possessed some knowledge of the Essential Drug List, and 91% agreed with the use of the list.

Since 1981, all hospitals of the Ministry of Public Health must use at least 80% of the government drug budget (tax revenue) for purchasing drugs from the list of essential drugs. Following a resolution made by the Cabinet in 1986, other government hospitals must spend at least 60% of their drug budget on essential drugs based on the medium price established by the Ministry of Public Health. From their own budget (through user charges), hospitals can buy drugs other than those included in the National Essential Drug List. Data shows that the proportion of essential and non-essential drugs available in hospital drug lists were between 45:55 to 76:24, respectively, depending on the size of the hospital. The smaller hospitals tend to have more essential drugs. The proportion of expenditure on essential and non-essential drugs was between 37-80% to total expenditure and also varied according to the size of hospitals.

Drug purchasing plans are prepared at each level of care in the 72 provinces, collated at provincial health offices and sent to the Ministry of Public Health in Bangkok for approval. The purchase of drugs is, however, carried out by each hospital. Provincial and hospital drug therapeutic committees have also been established or strengthened.

To support the rational use of drugs, several measures have been adopted. The National Drug Information Centre has been established to monitor adverse drug reactions. A prescribers's Journal, Data Sheets on Essential Drugs, and Drug Bulletin are published. Standard treatment guidelines for the nine major diseases were developed to be use as a tool for education and rational prescribing. In addition, several national workshops and seminars on essential drugs have been held.

*Quality Assurance.* Quality assurance activities have also been strengthened through several strategies. First, the government encourages and assists local manufacturers to upgrade their manufacturing and quality control procedures by conducting training programmes on Good Manufacturing Practices (GMP). At present, there are 109 out of 174 manufacturers with GMP certificates (62.5%). Other measures include increasing the number of samples or products designated for quality control (pharmaceutical products, raw materials, pharmaceutical aids, narcotics and psychotropic substances); development of reference substances; development of Thai Pharmacopoeia; establishing Regional Drug Laboratories in 9 out of 12 regions; increasing the number of provincial inspectors by appointing district health officers and district hospital pharmacists to be drug inspectors (1,500); increasing the number of pharmacists in provincial and community hospitals and starting a collaborative network of quality control laboratories and drug management.

*Use of Indigenous Raw Materials.* To utilize indigenous raw materials, research is being conducted for potential essential drug production, thus fostering self-reliance. The local pharmaceutical industry has been requested to invest more capital in Research and Development activities and establish close cooperation with academia.

*Use and Promotion of Herbal Medicines.* To encourage recognition among health personnel and patients on the collection and use of medicinal plants, selected herbal medicines are cultivated in the compounds of hospitals, district health offices, health centres and village recreation grounds for demonstration purposes and as propagating sources. In community hospitals, selected medicinal plants are produced in appropriate dosage forms for patient treatment. The Government Pharmaceutical Organization produces four herbal medicines for distribution to public health facilities.

### 1993 National Drug Policy

In April 1993, the Cabinet approved a revised version of the National Drug Policy proposed by the National Drug Policy Committee. In addition to the five main policies of 1981, two other policy statements were added: (1) promotion of drug research and development and drug export; and, (2) improvement of drug management and legislation to protect consumers. The role of the private sector has also been emphasized. In addition, price controls and the cost-effectiveness of drugs are considered as important new components. Development strategies and measures as well as responsible agencies are also clearly stated.

## Pharmaceutical Control

### *Historical Background*

Before 1936, there was practically no control of any aspect related to drugs, although the production of pharmacists and stipulations on their right to dispense drugs has been enforced since 1929. The problem of the extensive manufacture and sale of alcoholic preparations containing indigenous medicinal herbs attracted the attention of the Medical Association of Thailand which eventually led to the promulgation of the Sale of Drugs Act B.E. 2479 (1936). It was the first legislative measure implemented in the field of drug control which dealt only with sales practices, regardless of the formulas or the ingredients. At that time, neither the producers, importers nor retailers paid much attention to the quality or safety of drugs or even accepted that it was their responsibility.

The control of drugs was much improved following the enactment of the Sale of Drugs Act B.E. 2493 (1950) which came into force in 1951. This law encompassed many more aspects of drug control other than the control of sales practices such as production controls and registration of pharmaceutical products. Standard requirements for drug quality were also included. This made possible the elimination of substandard, deteriorated and adulterated drugs and consequently upgraded the manufacturing standard of local drug firms and dispensaries to a certain extent. The act applied not only to production, importation and sales practices but also covered product registration and labelling requirements as well as advertisement control. Revisions were made from time to time to meet the ever-changing circumstances of pharmaceutical business and to update the law.

### *Current Laws and Regulations*

After trying for several years to replace the existing law of 1950, the Drug Act B.E. 2510 (1967) was promulgated. For more than two decades this act brought quite substantial

improvements in all aspects of drug control. Nevertheless, four subsequent additions were made in order to cope with the fast growing drug industry, the developing global situation, and to a larger extent the need to facilitate pharmaceutical development. The Drug Act. B.E. 2510 (1967) and four additional acts have a score of important features to be noted.

First, drugs are classified into two major groups, i.e., modern drugs and traditional drugs. With regards to modern drugs, there are three categories, namely: ready-packed drugs, dangerous drugs and specially controlled drugs. Drugs which may possess potentially harmful effects to health, if misused, are listed in the last category, and require a prescription. Dangerous drugs can be obtained without prescription but can only be dispensed by a pharmacist. Psychotropic substances and narcotic drugs are dealt with separately by the Psychotropic Substance Act B.E. 2518 (1975) and the Narcotics Drug Act B.E. 2522 (1979).

Second, the Ministry of Public Health is authorized to publish in the Government Gazettes lists of specially-controlled drugs, dangerous drugs, and particular drugs which require additional labelling (e.g., expiration date, warning, etc.), as well as a classification of psychotropic substances and narcotic drugs.

Third, licensing of drug manufacture, importation and sale are required by law. Applications for licences and their granting is in accordance with the rules, measures and conditions prescribed in the Ministerial Regulations.

Fourth, duties of licensees and pharmacists working at places of drug production, importation or sale are determined; for example, a licensee who produces modern drugs must provide an analysis of the finished products before dispatching them from the place of production.

Fifth, registration of drugs to be manufactured or imported by any licensee is required. The details of the formulas registered cannot be altered without the approval of the drug regulatory authorities.

Sixth, advertisements of any drug cannot be done without the approval of the drug regulatory authorities. Advertisement of dangerous and specially controlled drugs to the public is prohibited.

Lastly, to safeguard the welfare of drug sellers, the Minister is empowered to suspend or revoke the licence of a violator of this act and to suspend or revoke the registration of the drug which proves to have health hazards or is substandard.

## *The Drug Committee and Its Functioning*

According to the Drug Act. B.E. 2510 (1967) and its revisions, the Drug Committee is appointed to advise the Minister of Public Health on both the regulatory and technical aspects concerning drug control administration. This committee is also responsible for accepting the registration of pharmaceutical products and the withdrawal or suspension of licences. The Committee is composed of 14 regular members who are appointed according to their posts or as representatives of organizations concerned and 5-9 expert members appointed every 2 years. The committee appoints several subcommittees to assist in the evaluation of drug registration applications, license applications and to perform other functions as requested. These subcommittees are:

(1) Subcommittee on human drug registration approval (Single drug preparation);
(2) Subcommittee on human drug registration approval (Combination drug preparation);
(3) Subcommittee on veterinary drug registration approval;
(4) Subcommittee on domestic traditional drug registration approval;
(5) Subcommittee on foreign traditional drug registration approval;
(6) Subcommittee on investigation of manufacturing premises and warehouses approval;
(7) Subcommittee on adverse drug reaction monitoring;

(8) Subcommittee on drug advertisement approval;
(9) Subcommittee on minimum requirement of biological products;
(10) Subcommittee on new drug approval;
(11) Subcommittee on drug reevaluation;
(12) Subcommittee on orphan drugs;
(13) Subcommittee on improvement of household remedies; and,
(14) Subcommittee for technical promotion of drug production standards.

## *Licensing*

By law, no person can produce, sell or import drugs in the Kingdom unless he obtains a licence from the authorities. Applications for licences are submitted to the Premise Sub-division of Drug Control Division and then inspection of the buildings and facilities required is made by the inspectors. When it has proved eligible, the application is forwarded to the subcommittee on the investigation of manufacturing premises and warehouses for approval together with comments from the provincial governor (if up-country). After achieving the subcommittee's approval, the licence is granted to the applicant. By law, there are nine different categories of licences dealing with licenses to produce modern drugs, sell modern drugs, modern drug wholesale, the sale of only ready-packed modern drugs which are neither dangerous nor specially-controlled drugs, sale of only ready-packed modern veterinary drugs, importation of modern drugs into the Kingdom, production of traditional drugs, sale of traditional drugs, and importation of traditional drugs into the Kingdom. The number of pharmaceutical firms for each category is shown in Table 1.

## *Product Registration*

Previously, only pharmaceutical preparations not listed in the official compendia announced in the Government Gazette by the Minister of Public Health had to be registered; the product registration period lasted only 5 years. According to the latest revision of the Drug Act, however, all drug preparations will hold a life-long registration approval.

In applying for product registration, the manufacturer or importer must first request permission to produce or import sample products to be registered. After this has been accepted, sufficient quantity of drug samples will be submitted together with an application for product registration. The samples will be analysed and approved by the Department of Medical Science. Submitted information pertaining to the product should include product formulation, dosage form, dosage regimens, chemical and pharmaceutical data, method of product assay, pharmacological and toxicological data, clinical trials, label claims and insert. A certificate of free sale is also needed for imported products. The number of registered products from 1990 to 1992 are shown in Table 2.

In August 1989, the Ministry of Public Health amended the registration procedure for new drugs. According to the new requirements, in addition to toxicological, pharmaceutical and clinical clearance of new drug applications, there is also a requirement for at least 2-year safety monitoring clearance prior to the unconditional registration approval. The "new drug" covers:

(1) New chemical entities or new derivatives not previously used in Thailand;
(2) New indication;
(3) New combination
    a) containing new chemical entities,
    b) comprising of at least 2 registered drug formulas but not the same as the combination already registered,
    c) same registered combination but with different strengths. Reasons for proportional difference has to be shown.

(4) New delivery system: a new and different system to deliver drugs into the body with sufficient significance to create the difference of bioavailability.

Table 1
Number of Pharmaceutical Firms in Thailand by Drug Type, Category and Location (1992)

| Drug Type | Category | Number in Bangkok | Other | Total |
|---|---|---|---|---|
| ***Modern Drugs*** | Manufacturer | 142 | 40 | 182 |
| | Importer | 395 | 27 | 422 |
| | Seller of modern drugs | 1,936 | 1,743 | 3,679 |
| | Seller of ready-packed drugs | 889 | 4,644 | 5,533 |
| | Seller of ready-packed for veterinary use | 33 | 156 | 189 |
| | | | | |
| ***Traditional Drugs*** | Manufacturer | 258 | 425 | 683 |
| | Importer | 93 | - | 93 |
| | Seller | 441 | 1,999 | 240 |
| | | | | |
| | Total | 4,187 | 9,034 | 13,221 |

**Source:** Drug Control Division, FDA

All the above mentioned categories must have novelty and be eligible for patent protection in the country of origin. These new drugs can be marketed only to health facilities manned by physicians. Generic products will be allowed to apply for registration only after unconditional registration approval with a requirement for a bioequivalence study.

## *Quality Assurance and GMP Study*

FDA's responsibilities are to ensure drug safety and efficacy by approving new drugs and reviewing older drugs already registered. A marketed drug can be deficient in many ways especially through manufacturing flaws. A drug may be substandard, contaminated with impurities or microorganisms or even made with the wrong active ingredient. In cooperation with the Drug Analysis Division of the Department of Medical Science, the FDA monitors the quality of finished products in the market through inspections and sample analysis. A quality assurance programme is undertaken by regular sampling of marketed drugs and analysis in the Drug Analysis Division laboratory. The results are compiled, analyzed and evaluated, then the recommendations are made by the authorities for actions to correct deficiencies.

Table 2
Number and Type of Registered Pharmaceutical Preparations

| Type | Human | | | Veterinary | | |
|---|---|---|---|---|---|---|
| | 1990 | 1991 | 1992 | 1990 | 1991 | 1992 |
| ***Modern Drugs*** | | | | | | |
| - Manufacture | 15,368 | 16,245 | 16,890 | 446 | 480 | 509 |
| - Import | 5,383 | 5,742 | 5,911 | 1,264 | 1,394 | 1,553 |
| ***Traditional Drugs*** | | | | | | |
| - Manufacture | 2,434 | 2,579 | 2,678 | 55 | 55 | 63 |
| - Import | 492 | 509 | 513 | - | - | - |
| **Total** | 23,677 | 25,124 | 25,992 | 1,765 | 1,929 | 2,125 |

**Source:** Drug Control Division, FDA

Development of specification and methods of analysis for finished modern pharmaceutical products and traditional medicines are also needed. At present, specifications and methods of analysis of some certain pharmaceuticals, raw materials and vaccines have already been established. The first edition of Thai Pharmacopoeia was published in 1987.

However most, if not all, of the drug quality problems can be solved by compliance with the minimum requirements of the current good manufacturing practice regulation. The manufacturers who possess and utilize good facilities, personnel and control procedures required by the regulation would certainly be able to produce quality products. Those who do not would have less ability to upgrade their products to such quality. The standards of GMP maintained by various manufacturers are obviously different. In 1987, a guideline on GMP was prepared to be used as a recommendation to manufacturers to upgrade their manufacturing standards as well as a guideline for factory inspections.

Up to 1993, 112 out of 174 drug factories complied to GMP standard. The MOPH, in 1992, enforced that public health facilities must purchase drugs only from GMP certified producers. FDA has targeted a 100% covereage of GMP certified producers in 1996.

## *Advertisement Control*

According to the most recent revision of the Drug Act, advertisement of dangerous and specially-controlled drugs is permitted only directly to medical practitioners. Over the counter (OTC) or ready-packed non-dangerous drugs and household remedies can be advertised to the public. Nevertheless, all drug advertisements must receive pre-clearance by the Subcommittee on Drug Advertisement Approval. Monitoring of drug advertisements is also performed by FDA staff as well as by provincial health officers. In 1992, about baht 600 million ($US 24 million) was spent on drug advertisement on television, newspapers, journals, and central radio stations.

## *Enforcement*

The Food and Drug Administration (FDA) is responsible for regulatory administration dealing with food, drug, cosmetics, etc. Measures for implementing regulations under its responsibilities include inspection, sampling, analysis and prosecution of offenders. Inspection aims to ensure conformity in adherence to the laws and regulations concerned and to ensure that products distributed in the market comply with official standards and/or requirements.

*Types of Inspection.* In general, there are two types of inspections. A *regular inspection* is a planned inspection to ensure that the FDA annual plan on consumer protection has been implemented successfully. Under this inspection, there are three subsidiary inspections. The plant set up inspection is a comprehensive check of newly established firms or the modified ones prior to issuing licences. A routine inspection is a periodic inspection, while a follow-up inspection is one that confirms whether or not corrections to the premises or practices by licence holders as recommended by former inspections have been achieved. The second major type of inspection is the *suspected or petition inspection.* This inspection has the specific aim of investigating and gathering necessary evidence for prosecution.

*Scope and Responsibility of Inspectors.* Inspectors are authorized by virtue of the Drug Acts to function under the responsibility of the FDA. They are empowered to visit any firms or suspected places (as necessary), take samples, detain or seize products, containers, and other relevant substances or documents which are suspected of violating the laws or regulations. In addition, primary screening tests and product sampling for assays are carried out by inspectors to monitor and ensure standards of products available in the market.

At present there are 70 centrally located inspectors under the FDA, and 1,800 health personnel appointed as food and drug inspectors up-country. Training and supervision for

these up-country inspectors are carried out by the central inspectors.

*Cooperation with Other Concerned Agencies.* Considering the broad scope and responsibilities of inspectors, some activities cannot be done alone and cooperation with other agencies is required. These include the Department of Medical Sciences, the Custom-House, the Office of Consumer Protection and the Police Department. Three main ports of entry of goods are also manned by inspectors to inspect imported food and drugs.

## National Adverse Drug Reactions Monitoring Center (NADRMC)

The Ministry of Public Health established the National Adverse Drug Reactions Monitoring Programme in 1979 under the responsible of the Food and Drug Administration. The NADRMC started to collect reports and disseminate information with technical and financial support from WHO in 1983. The Thai NADRMC is the 26$^{th}$ member of the WHO Collaborating Center for ADRM.

### *Responsibilities of the NADRMC*

The NADRMC has three main responsibilities, the first of which is to collect, analyse and consider adverse reactions and report these to the Sub-Committee on Adverse Drug Reactions and the Drug Committee. Its second function is to exchange information with domestic and international agencies, particularly with the WHO Collaborating Centre for International Drug Monitoring and the ASEAN TCDC on Pharmaceuticals. One part of its duties is to summarize and disseminate information to all concerned. The third responsibility is to encourage, promote, advise and co-ordinate with health facilities to establish the adverse reactions monitoring network. Finally, the NADRMC makes comments and recommendations on adverse drug reactions and drug hazards.

### *Strategies and Approaches*

The NADRMC created a reporting form to be used by health professionals for spontaneous reporting of ADR. This form was tested and has been in use since 1985. Several workshops have also been conducted in government hospitals, with financial support from WHO as well as from the government budget to promote and motivate health professions to participate voluntarily in ADR reporting. The number of ADR reports increase gradually from 243 in 1986 to 1,395 in 1992, 2,506 in 1993 and 3,250 in 1994.

To achieve more involvement from health professionals, 19 regional ADRMCs were established in the regional hospitals in 1992. Networking of technical activities, information and database support are actively carried out. Computer online networking is in its development phase. Drug bulletins are published bi-monthly to disseminate drug information especially on ADR to health professionals. A quarterly report containing spontaneous reports of ADR is published.

The staff of the ADRMC and the Epidemiology Division work together in investigating patterns of adverse drug reaction with respect to particular drugs.