

Thailand's Country paper

Abundant for the few , shortage for the majority :

The inequitable distribution of doctors in Thailand

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Abstract

This paper reviews the situation and trend on the Human Resources for Health and its priority problems in Thailand. It also highlights the issue of the inequitable distribution of doctors. Through several brainstorming sessions among stakeholders, it summarizes a package of recommendations for the future continuous and sustainable knowledge-based Human Resources for Health Development.

The priority HRH problems in Thailand are the inequitable distribution, the shortages, the provider-patient relationship, and the inadequate morale and productivity. Inequitable distribution of doctors is considered the most serious problem. The study shows a more than 23 times differences in the density of doctors in the capital city and the lowest density province. Several factors contribute to this problems, including the rapid capitalistic economic growth with rapid expansion of the urban private hospitals, the opportunity for continuing education, the urban origin of the graduates, and the influx of foreign patients. Many strategies, both supply and demand sides, were used to solve these problems. However because they are implemented in a fragmented, uncoordinated sometimes conflicting manners, and rarely evaluated systematically, the successes are not so much.

The package of recommendations for continuous and sustainable HRH development include the knowledge generation and management, the continuously verified and updated HRH information and the sustainable capacity development for HRH management.

1. Health situation and trend

Over the past four decades, the Thai population has experienced a promising health improvement. Between 1964- 2000, the life expectancy at birth had increased from 55.9 to 69.4 years in male and from 62.0 to 74.9 years in female. The infant mortality rate had declined from 84.3 to 27.1 per 1,000 live birth, and the maternal mortality ratio had also declined from 317.3 to 13.2 per 100,000 live births in the same period. (Table 1)

The epidemiological transition started in the early 1970s, with a decreasing of the poverty – stricken and vaccine preventable diseases to those of the non – communicable diseases [1]. In the 1999 Burden of Disease Study, HIV/AIDS was the top burden, followed by the traffic accidents, stroke and cancer. The top five risk factors were unsafe sex, alcohol consumption, smoking, high blood pressure and non-use of helmets [2]. From Population and Household censuses, the demographic changes are also remarkable with the proportion of the elderly increased from 4.8 percent in 1937 to 9.5 percent in 2000 [3].

2. Health Service Systems in Thailand

The Thai health service systems are pluralistic and dominated more by the public sector. It has evolved from a system of self-reliance based on local wisdom, to the system of modern professional services. Thai people more and more depend on health facility based services. The proportion of using facility based health services has increased from 38.5 percent in 1970 to 77.5 percent in 2004, while those of self medication decreased from 51.4 percent to 20.9 percent in the same period [3].

Table 1 : Life expectancy , infant mortality rate and maternal mortality ratio 1964 , 1996, 2000.

	<i>Life expectancy at birth⁽¹⁾</i>		<i>Infant</i>	<i>Maternal</i>
	<i>(years)</i>		<i>mortality rate⁽¹⁾</i>	<i>mortality ratio⁽²⁾</i>
	<i>Male</i>	<i>Female</i>	<i>(per 1,000 live births)</i>	<i>(per 100,000 live births)</i>
1964	55.90	62.00	84.3	317.3
1996	69.97	74.99	26.1	15.6
2000	69.4	74.9	27.1	13.2

Source: (1) The Survey of Population Change, National statistical Office

(2) Bureau of Health Policy and Plan , Ministry of Public Health

Structurally, the Ministry of Public Health is the main national health agency. It owns the majority of health resources, particularly in the rural areas. (table 2) The private health facilities are operated under supervision of the Medical Registration Division, Department of Health Service Support, Ministry of Public Health. The private hospital has grown rapidly from around 10 percent of total beds in 1985 to 21 percent in 2002 (3) . This was in response to the rapid double digit economic growth, and the influx of low interest foreign loans. After the 1997 economic crisis, many private hospitals were closed down or reduced in size. Recently some started the campaign to attract more foreign patients into the country. They have been so successful that in 2001, it was estimated that there were 1 million foreign patients in Thailand at the rate of 38 percent increase from 2000 [4].

For health care financing , during the last 2 decades (1983 – 2002) Thailand's annual health expenditure has risen from 4.47 percent of GPD to 6.12 percent. The per capita health spending has risen 6.41 fold from 20 USD to 134 USD. There was also a trend of increase in the proportion of public spending from 31.5 percent in 1983 to 34.09 percent in 2002 [3] . The Ministry of Public Health shares more than two thirds of the public spending on health.

Before October 2001, 75 percent of Thai people were insured under important health insurance schemes, including the Civil Servant Medical Benefit Scheme, the Social Security Scheme, and the scheme for the poor, the children, the elderly and the disabled. In October 2001, the government started to implement the universal coverage of health care (30 Baht scheme), which covers the population who were previously uninsured. The health insurance coverage was raised up to 95 percent in 2004 [5]. Besides, since October 2003, the Antiretroviral therapy program are included in the core benefit package with the target to cover 50,000 people living with HIV/AIDS in the first year and 120,000 people in 3 years. As of March 2005, there were almost 60,000 patient recipients.

All these changes greatly affected the health systems and human resources for health. This paper aims at briefly discussing the human resources for health development in Thailand. It also highlights one of the most important concerns, i.e., the severe shortage of doctors in the rural areas. It also proposes further actions for better management.

3. Situation and trend of Human resource for health in Thailand

Multiple cadres of HRH are produced in Thailand. As the country develops , more professionals and less paramedics are produced. In addition, village health volunteers have been extensively trained since the primary health care's era in the 1980s' (Table 3)

Table 2 : Health care infrastructures in 2003 : Pleuralistic nature

	<i>Bangkok</i>	<i>Provinces (urban)</i>	<i>Districts (rural)</i>	<i>Tambons (rural)</i>	<i>Villages (rural)</i>
Medical schools					
<i>Public</i>	6	5	-	-	-
<i>Private</i>	1	-	-	-	-
Specialized Hospitals	19	40	-	-	-
Regional Hospitals	-	25			
General Hospitals					
<i>Public</i>	29	70	-	-	-
<i>Private</i>	100	246	-	-	-
Community Hospitals	5	-	725	-	-
Private Clinics	3,100	11,853	-	-	-
Health Centers	61/82	-	214	9,765	-
PHC Centers	-	-	-	-	66,223
1 st class drug stores	3,393	4,832	NA and include in province	-	-
2 nd class drug stores	985	5,774	NA and include in province	-	-
Groceries that sell medicines	-	-	-	-	400,000

Source : Thailand Health Profile 2001-2004.

Table 3 : Distribution of main cadres of HRH by region , 2000

	<i>Doctors</i>		<i>Dentists</i>		<i>Pharmacists</i>		<i>Nurses</i>		<i>Health Center Staff *</i>	
	<i>Number</i>	<i>Pop ratio</i>	<i>Number</i>	<i>Pop ratio</i>	<i>Number</i>	<i>Pop ratio</i>	<i>Number</i>	<i>Pop ratio</i>	<i>Number</i>	<i>Pop ratio</i>
<i>Bangkok</i>	9,504	668	2,720	2,336	2,764	2,299	17,389	365	-	-
<i>Central</i>	4,973	2,850	1,481	9,598	2,464	5,769	33,474	424	8,769	1,059
<i>North</i>	2,774	4,121	956	11,959	1,864	6,133	23,034	496	7,068	1,292
<i>Northeast</i>	3,294	6,322	1,136	18,332	1,916	10,869	28,887	720	10,248	1,666
<i>South</i>	1,890	4,279	673	12,017	1,346	6,008	16,867	479	5,146	1,141
<i>Whole country</i>	22,435	2,758	6,966	8,882	10,354	5,976	119,651	517	31,231	1,324
<i>Discrepanc ratio between Northeast : Bangkok</i>		9.46		7.84		4.72		1.97		-

Source : The Population and Housing Census 2000 , National Statistical Office
* Rural Health Division ,Office of Permanent Secretary , MoPH

3.1 HRH requirement and supply

From the past projection, it is quite clear that although there will still be some shortage (Table 4, 5), the shortage is not that severe. However, the number will not be enough to alleviate the problem of maldistribution, according to the “trigger down” theory. Furthermore, these attempts of projection were carried out before the intensive movement on the trade in health services and the universal coverage of health insurance and ARVs. These movements greatly increase the requirement for HRH. Thus there has been evidence of some increasing shortages in the HRH in the past few years [6] .

Table 4 : Projection of supply and requirement of main cadres in 2015

	<i>Doctors</i> [7]	<i>Dentists</i> [8]	<i>Pharmacists</i> [9]	<i>Nurses</i> [10]
Supply	38,217 – 41,282	10,323	25,124	120,197-173,321
Requirement	40,633 – 46,015	8,924 – 9,768	32,761 – 33,698	137,997-142,366
Shortage	2,416 – 4,733	(537 - 1,399)*	7,637 - 8,574	(30,955)* - 17,800

Source : (1) Nichakorn Sirikanokwilai , 1998 What are [6] [7] [8] [9]?
 (2) Duangjai Lexoomboon , 2000
 (3) Nipa Panyanantana , 1998
 (4) Dr.Vijit Srisuwan, 1998
 () * : Oversupply

Table 5 : Annual production capacity of main cadre (public and private) , 1997 – 2015

	<i>Doctors</i> ⁽¹⁾	<i>Dentists</i> ⁽²⁾	<i>Pharmacists</i> ⁽³⁾	<i>Nurses</i> ⁽⁴⁾
1997	914	318	763	4,200
1998	1,178	358	876	4,740
1999	1,235	332	947	6,458
2000	1,262	349	1,027	6,741
2001	1,338	383	1,221	5,902
2002	1,583	420	1,164	4,319
2003	1,478	423	960	4,730
2004	1,407	437	1,412	4,207
2005	1,471	479	1,434	4,161
2006	1,515	462	1,499	4,180
2007	1,499	462	1,498	4,180
2008	1,346	477	1,607	4,279
2009	1,305	501	1,711	5,590
2010	1,919	501	1,711	5,590
2011	2,032	677	1,711	5,590
2014	2,070	677	1,711	5,619
2015	2,134	677	1,711	5,619

Source : (1) , (2) , (3) , (4) from each professional councils
 Data 1997 – 2003 : new graduates register at each professional councils
 Data 2004 – 2015 : estimated graduates from 95 % of the enrolment annually

3.2 Major HRH Problems in Thailand

1) Maldistribution

HRH concentrate mainly in the capital and the big cities .(Table 3) The situation of maldistribution is much more severe in the medical profession than in nurses [11]. Furthermore there is a trend towards more specializations and increasing proportion of HRH in the private sectors

2) Shortages

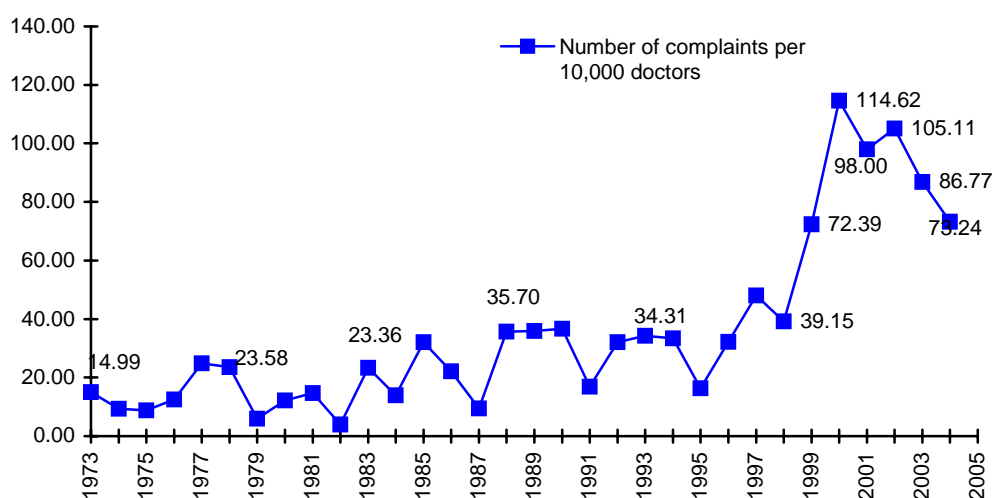
The increasing demand of health care due to high economic growth, higher education, more urbanization, more elderly people, more chronic diseases, universal coverage of access to essential health care and higher consumption of services by foreign patients has resulted in the increasing demand and the shortage of HRH, particularly in the rural public health facilities.

This problem of selective increase in shortages, often co-exists with high workload and wastage resulting from low motivation, ineffective utilization and hence low productivity. The rapid development of the private sector and international trade add more complexity to the situation.

3) Providers and patients relationship

In the past, HRH were accepted with high respect from the society. This kind of patron-client relationship has been changing to more of a contractual based relationship, since around two decades ago. This is due to the rapid economic growth, the increasing coverage of health insurance, and the changing social and political environment. This changing relationship has resulted in the increasing rate of malpractice complaints as shown in Figure 1 for the case of medical doctors [12]. The malpractice law suits in the court also increased and there has been some insurance companies that sell "malpractice insurance" particularly to doctors in the private sector.

Figure 1 : Rate of medical malpractice filled at medical council , 1973 – 2004



Source : Thai Medical Council

4) Moral and productivity

The main causes of low productivity are ineffective use of staff , centralization , bureaucratization , low salaries , inadequate logistic support and low motivation. A study in 1987 revealed that nurses and midwives in the health center used only 33 % of total working time on the direct health services [13].

Dual practice also has many effects in productivity in public work. Its implications range from public time corruption, neglecting patients in public service and poor performance from exhaustion [14].

Several health sector reform strategies have been implemented to increase productivity, solve the shortage problem, contain costs and increase efficiency.

4. Inequitable distribution of doctors in Thailand

4.1 Situation of geographical distribution of doctors

The analysis of the Population and Household Census in 2000 indicated that there were geographical maldistribution of all major cadres of HRH [11]. (Table 3) It is clear that the maldistribution is highest for doctors , followed by dentists , pharmacists and nurses , respectively.

Provincial mapping indicated that high density of doctors were in the capital and periphery , the central region and the big cities particularly those with medical schools and regional hospitals. In remote provinces , particularly in northeastern region and small cities and the newly established provinces , the density was low. (Figure 2) . The difference of population to doctors ratio between Bangkok to the less dense province was 23.0 fold.

The distribution of doctors was influenced by multiple factors. The democracy movement with a strong social call for high public spirit among university graduates in early 1970s , the worldwide movement of primary health care and the rural health development policy during 1977 –1987 were the positive factors toward more equitable distribution. The improved distribution of doctors during that period was quite evident. (Figure 3)

On the other hand , the rapid economic growth in 1987 – 1997 and increase of the international health service trade in late 1990s, resulted in increased private hospital demand , which were negative factors contributing to the increasing maldistribution

The 1997 economic crisis resulted in a decline in private hospital demand. The distribution of doctors became more equitable. (Figure 3)

Overspecializations also contributed to the maldistribution (Figure 4) The most important factor of the resigned general practitioners of MoPH in 2003 was the opportunity for further training [15]. After the training they tended to stay in the provincial hospital and the big cities.

4.2 Strategies used in solving inequitable distribution of doctors in Thailand

4.2.1 Supply side strategies

1) Educational strategies

- *Local recruitment strategy*

Rural recruitment , training in rural health facilities and hometown placement after graduation were factors of the successful distribution of nurses and other paramedics in Thailand [16] . In 1974, These strategies started to be applied in some medical schools. The students were recruited from rural areas by provincial committee and sent back to their provinces after graduation. Evidence suggested that they had higher continuity in working in rural areas after the compulsory 3 years public work

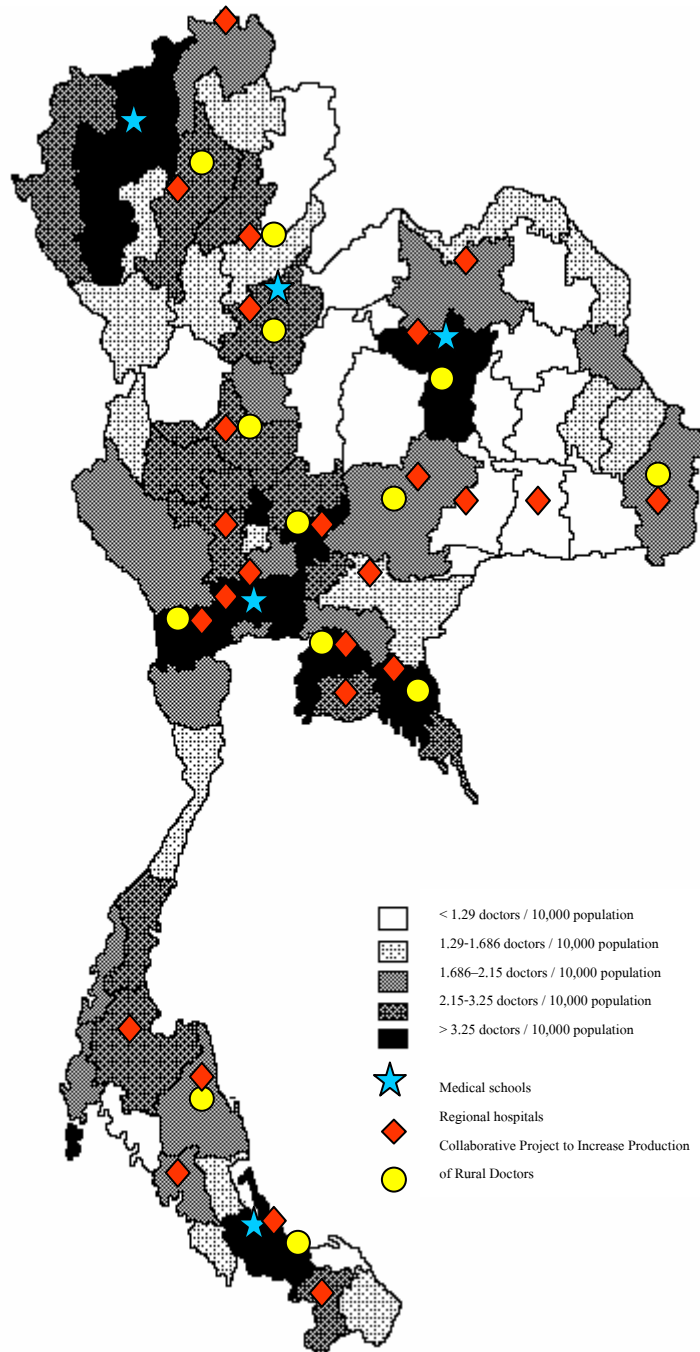
In 1995, in respond to the severe shortage of medical doctors in the rural areas, a “ **Collaborative Project to Increase Production of Rural Doctors (CPIRD)**” was started based on this strategy. This CPIRD increased the proportion of rural medical students. (Figure 5). It is producing 300 graduates now and is increasing to 500 in the next few years. Since 2004, the government move further to establish a “One rural district one doctor” project, aims at recruiting from the rural districts, not only from the provincial level. The application of this concept has proved quite effective in distributing HRH to the rural areas [11]. (Table 3)

- *Increase production*

There were four major increases in the production of doctors in Thailand. The first was in 1979 , with an increase of 200 enrolled medical students. The second was in 1993 , the additional production were 340 enrolled medical students annually. In 1995 , *the collaborative Project to Increase Production of Rural Doctors (CPIRD)* was proposed to enroll 300 medical students annually to respond to the shortage of doctors in rural areas [17]. It is now accepting 500 students annually. The last big increase was in

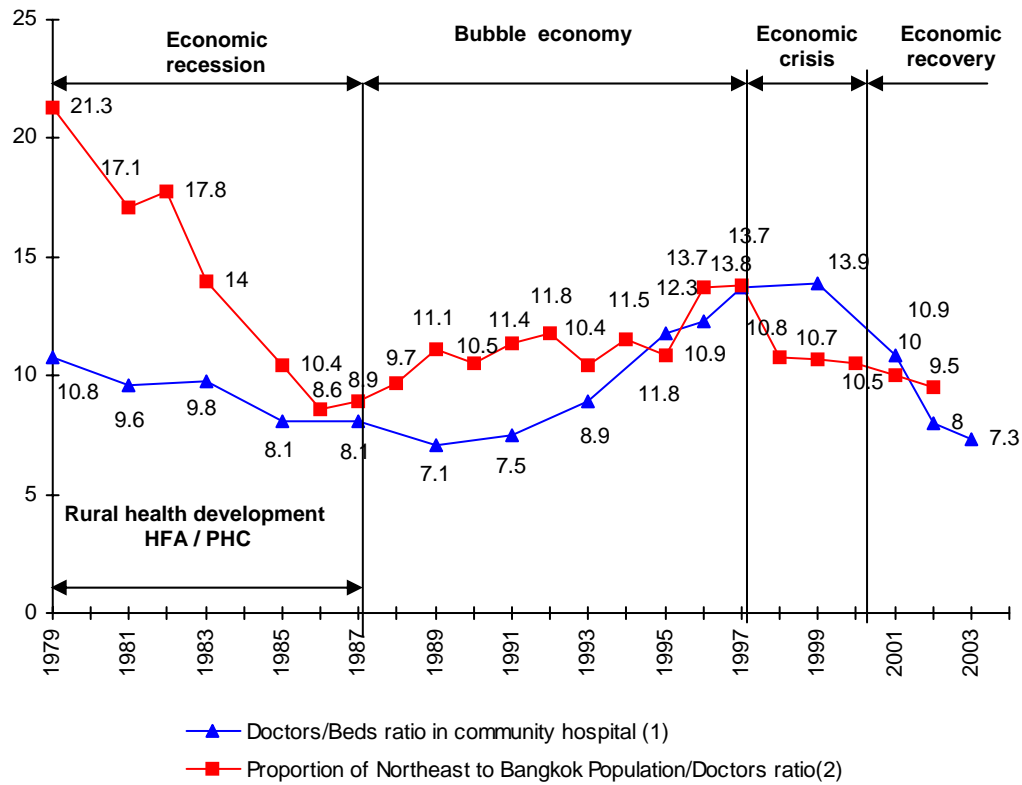
2004, in response to severe shortage in the rural areas, the government decided to support an increase production of 700 students annually to achieve an additional 10,000 medical doctors in the next 15 years.

Figure 2 : Density of physicians by province in 2000



Source : : The Population and Housing Census 2000 , National Statistical Office
As quoted in Thaksapholn Thamarangsi , Analysis of Human Resource for Health based on Population and Housing Census 1990 and 2000

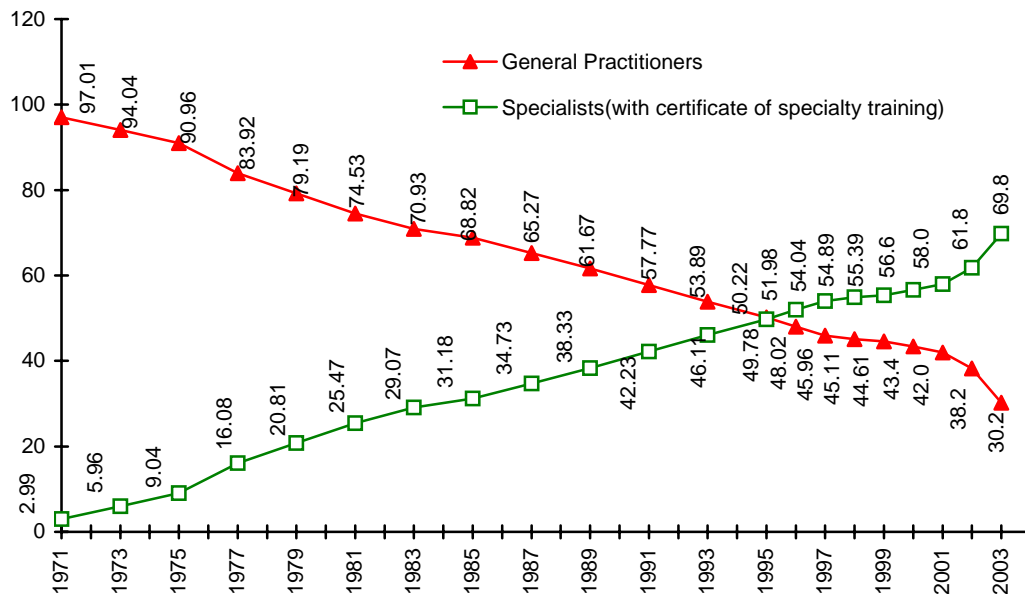
Figure 3 : Doctor to Beds ratio at Community Hospitals and Proportion of Northeast's to Bangkok's Population/Doctor Ratios in 1979-2003



Source : (1) Rural Health Division, MOPH.

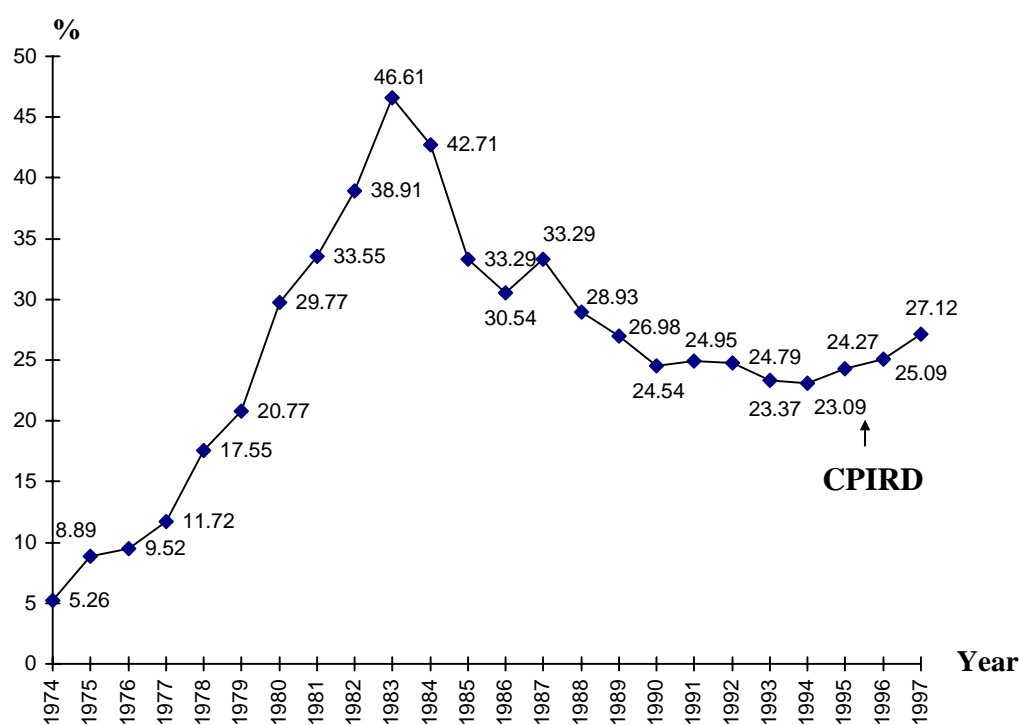
(2) Report on Health Resources Survey, Bureau of Health Policy and Plan, MOPH.

Figure 4 : Proportion of Medical Specialists and General Practitioners, 1971-2003



Source : The Medical Council. (Medical specialists include only those certified by the Medical Council).

Figure 5 : Proportion of rural medical students



CPIRD = Collaborative Project to Increase Production of Rural Doctors.
Source : Faculty of Medicine of all universities.

- **Medical education reform**

The reform of medical education resulted in suitable graduated doctors to work in rural areas [18] . In 1979 the resolution of the fourth national medical conference stated that all medical schools will reform their curriculum to produce medical graduates suitable for working in district hospitals. All medical schools sent their medical students to be trained at district and provincial hospitals for at least 3 – 6 months to allow the students to familiarize themselves with the rural life and change their attitude toward rural working.

2) Appropriate skill mix

Production of lower level professionals and strengthening their capacity were very important strategies to improve services in rural areas particularly at health center levels. Patients with simple problems should be cared for by the health centers. The intensive investment in the development of rural paramedical personnel since early 1980's has resulted in greatly reducing the proportions of outpatient visits in the hospitals and reduced the demand for doctors' services. (Figure 6)

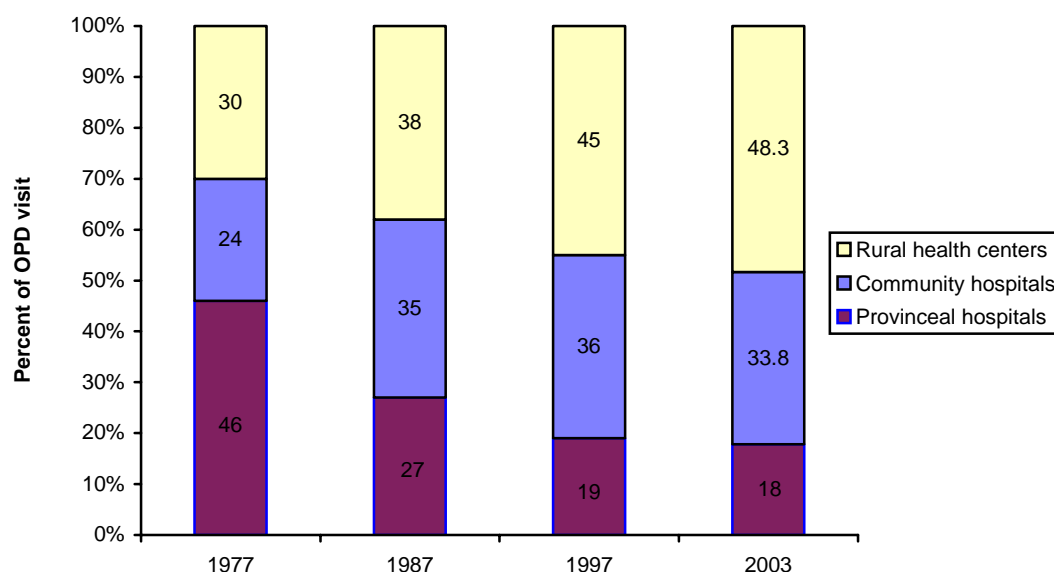
4.2.2 Demand side strategies

1) Financial strategies

- **Development of rural health infrastructure**

In 1979 the Thai government initiated rural development policy. This policy strongly supports the development of rural health facilities with an excellent supporting system , including personnel , equipment , transportation , housing and incentives.

Figure 6 : Proportion of OPD visit at public health facilities



Source : Rural health division , MoPH

- *Compulsory public services*

The compulsory 3 years of public work contract was started at 1972 , in response to severe external brain drain to the USA. All new graduated doctors must work in public hospitals , particularly in rural district hospitals , for the first 3 years. If they breach the contract, they would have to pay a fine of 10,000 USD .

- *Increase financial incentive*

Special hardship allowances , non – private practice allowances , workload related payment for non-official hour services were paid , in addition to the basic salary , to attract doctors to rural work.

In 2004 , in the response to the increasing resignation of doctors from both rural and urban public hospitals , the MoPH further developed the special incentives based on 2 objectives. One was based on the hardship of professionals and the other was based on the hardship of their workplaces. (Table 6)

Table 6 : Total income of new medical graduate (include average work – related incentive)

	1975	1985	1995	2005
Community hospital				
Non remote	150	200	735	890
Remote	170	225	755	1080-1,330
Provincial hospital	90	150	680	830

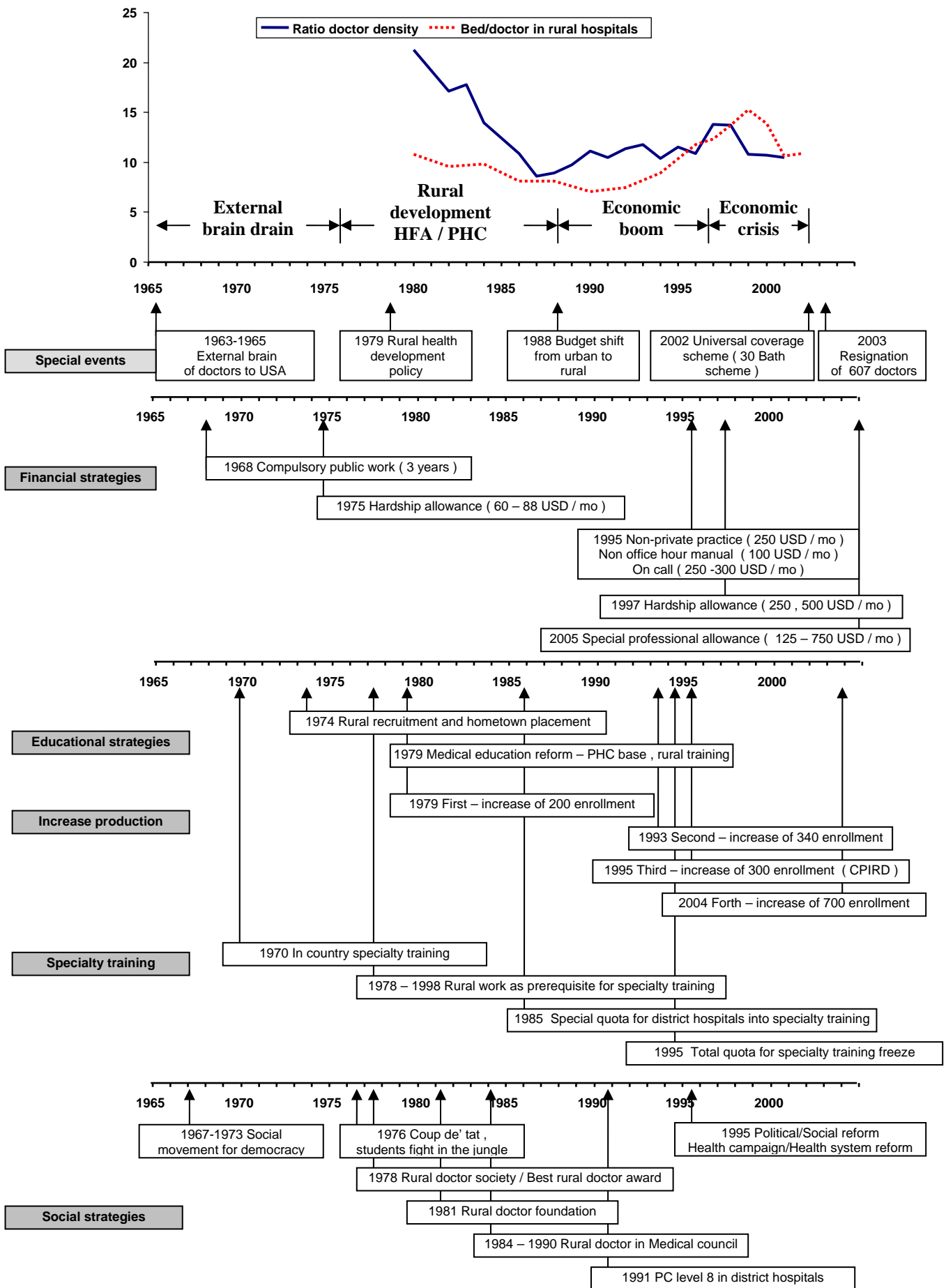
The exchange rate is 1 US\$ = 40 Baht

2) Non financial strategies

- *Social strategies*

To encourage the doctors who have worked in rural areas for a long time and devoted their life to improve the community health , many public recognition awards were established. These awardees were invited to deliver special addresses in the prestigious medical schools. All the social movements and supports improved the morale of rural doctors and encouraged them to continue their rural working.

Figure 7 : The past strategies for solving the doctor's maldistribution



- *Career development*

All doctors in rural district hospitals start their career at PC level 4 (total 11 levels) and after 7-8 years of public work they will be at level 7 and within 12 years they at level 8 , equivalent to the director of division in central MoPH office. Some of them are also promoted to level 9 which is equivalent to the deputy Director General of a Central Department or the deputy governor.

4.2.3 The effects of these strategies

In spite of all these strategies, there are the problem of inequitable distribution of doctors still exist and sometimes even become more severe. This is due to the fact that these strategies were implemented as reactionary strategies in respond to immediate serious situations, so they are fragmented, ad hoc, uncoordinated and sometimes even conflicting. For example the three years compulsory public work with fine when the contract is bleached. There has never been any increase in the amount of fine for more than 25 years. At the same time the increase financial incentive to the new graduates has allowed them to pay the fine easily and leave the rural area earlier. (Figure 7)

5. Conclusion and Recommendations for the future HRH development

In spite of the fact the importance of HRH and its problems have been recognized highly in Thailand and several successive and intensive strategies were employed to solve them, there are still some serious issues continue to occur and need to be tackles. Lessons from the previous successes and failures prompted the Health Systems Research Institute to convene several multistakeholder meetings to discuss the issue of sustainable and continuous improvement to replace the ad hoc and fragmented attempts. Through systematic analysis and several multistakeholders consultations, a package of three components are proposed for the future continuous and sustainable HRH development in Thailand.

5.1 Knowledge generation and management

5.1.1 Knowledge generation: Policy linked research package on priority areas including:

(1) *HRH distribution:* Situation and trend of HRH distribution, and evaluation of all the supply and demand side measures to achieve more equitable distribution.

(2) *Dynamics of HRH demand:* The epidemiological, demographic and socio-economic transition, including the New Public Management and the International Trade on Health Related Services, affecting the demand and distribution of health services and HRH .

(3) *Generation of basic information:* Basic researches to generate essential information for HRH planning and projection, including HRH dynamics, skill mix, productivity, and labor economics.

(4) *Research and development on innovative strategies:* The research and development for improving the efficiency, quality and morale of HRH as well as the model for the community involvement in the supply and demand side HRH development.

5.1.2 Knowledge management:

Provinces and districts with successful retention and management of HRH will be identified. Active systematic knowledge management and sharing activities will provide necessary wisdom and incentives for changes by the administrators and civil society from different areas of the country. There should also be interaction, networking, sharing and learning with global community as well.

5.2 Development of HRH Information system

Several sources of HRH information in relation to health care systems and geographical areas need to be further developed and continuously verified and updated, e.g., the annual Health Resources Survey, the licensing data bases, the production data bases, and the population census. *The national HRH information clearing house* is proposed to be the supporters and coordinator for the development and sharing of HRH information. *The minimum HRH information set* should be developed as a standard tool for the information generation and sharing. .

5.3 Development of sustainable capacity for HRH management

5.3.1 *A continuous plan for the institutionalization of an HRH development unit, independent but links to all stakeholders, should be formulated.* The initial phase will be exploratory activities and human resource capacity development, including short term and long term trainings, the linkages to the knowledge generation and management and information development activities. This unit can be assigned to be responsible for the management of this HRH development package. The funding may come from several sources, i.e., the Health Systems Research Institute, the National Health Security Office, the Thai Health Promotion Foundation, the government budget through stakeholders, and international organizations.

5.3.2 *Establishment of Multistakeholders mechanism on HRH development at the national level.* This will be a forum for knowledge sharing and knowledge-based consensus building for the integrated and comprehensive measures to ensure longer term and sustainable HRH development in relation to the health systems development. This mechanism may be part of the National Health Systems Reform Committee, chaired by the Prime Minister, or may also be part of the National Health Committee, under the new National Health Bill, or under some other multistakeholders national health mechanism. The HRH development unit in 5.3.1 should be assigned to be the secretariat of this multistakeholder mechanism.

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