The TASSIT Project Report

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Abbreviations

BITS	The Swedish Board for Investments and Technical Support
CT	Computer Tomography
DRG	Diagnostic Related Groups
EU	European Union
HHS	Stockholm School of Economics
HMD	Health Manpower Development
HPSR	Health Policy and Systems Research
HSD	Health Systems Development
HSRI	Health Systems Research Institute
HTA	Health Technology Assessment (sometimes Health Care Technology Assessment)
IHCAR	Division of International Health, Department of Public Health Sciences, Karolinska Institutet
INEC	Department for Infrastructure and Economic Co-operation, Sida
MRI	Magnetic Resonance Imaging
LFA	Logical Framework Analysis
LSHTM	London School of Hygiene and Tropical Medicine
MOPH	Ministry of Public Health, Thailand
PBRI	Praboromrajchanok Institute
SBU	The Swedish Council on Technology Assessment in Health Care
SEK	Swedish Crowns
Sida	The Swedish International Development Co-operation Agency
Sipu	Swedish Institute for Public Administration
Spri	Swedish Institute for Health Service Development
SSO	Social Security Office

Executive summary

The project on "*Technology Assessment and Social Security in Thailand*" (TASSIT) started in 1993. After the first phase it expanded into a variety of Health System Development (HSD) projects dealing with health technologies, equity issues in financing and delivery of health care services, manpower development, hospital management and the social security system.

The TASSIT project has been a collaboration with the Health Systems Research Institute (HSRI) as Thai co-ordinator and the Division of International Health (IHCAR), Karolinska Institutet in Sweden as overall co-ordinator, aiming at developing the health system of Thailand. The success of TASSIT has much been dependent on different expertise both in-house and external to HSRI and IHCAR. On the Swedish side in addition to IHCAR, especially the Swedish Council on Technology Assessment in Health Care (SBU) and the Swedish Institute for Health Services Development (Spri) have been essential.

In the project on Capacity Building for **Health Technology Assessment** (HTA), a proposal for establishing an independent, national mechanism for HTA has been proposed and necessary mechanisms have been worked on and discussed at a regional meeting. A method for measuring **Equity in Health Care Delivery and Financing** has been further developed within the TASSIT project, and the results are presented in this report. The method and the findings have gained international attention. A project proposal for **Health Manpower Development** has been developed and contacts with possible Swedish institutions for future research and exchange of students and teachers have been established. A proposal for an independent research unit for analysis, evaluation and academic research to be set up within the **Social Security Office** (SSO) in Thailand has been developed. The information gained from this unit should be used to improve the social security system in Thailand. A training program for cost analysis at all levels of the health care system has been developed in Thailand as a step in the **Hospital Management** project and different models for improving efficiency in hospitals (including Diagnostic Related Groups (DRG's), internal marketing and self governing hospitals) will be experimented with in different hospitals in Thailand.

The positive development of TASSIT is shown in the international recognition that several of the sub-projects have gained and the interest shown by the Thai side to expand the project into other elements of HSD. Ideas resulting from the collaboration within the TASSIT project have been discussed and presented at international meetings in the region but also outside of Asia. TASSIT has positively capitalised on Swedish experience, encouraged north-south collaboration and provided experience relevant for work in other countries in the Asia region and elsewhere. It is our hope and belief that this development will continue, as more activities are included in any future collaboration.

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ANNEXES:

Annex 1

Program for the International Seminar on Health Care Financing Reform, Bangkok, Thailand. March 15-17, 1998.

ANNEX 1

Program
International seminar on health care financing reform
Path to achieve universal coverage for health care through health insurance : experiences from middle and upper-income countries
15-17 March 1998
Garden Ballroom, Rama Garden Hotel
Vibhavadi Rangsit Road, Bangkok, Thailand

March 15, 1998

08.00 - 09.00	Registration at Garden Ballroom
09.00 - 09.30	**Opening address** by ***Dr. Prakrom Vuthipongse*** Permanent Secretary MOPH, Thailand **Welcome address** by ***Dr. E. B Doberstyn*** WR to Thailand **Welcome address** by ***Dr. Marc De Bruycker*** European Commission
09.30-09.45	Coffee Break
Chair-person:	Dr. Prakrom Vuthiphongse/Prof Goran Sterky
Rapporteur	Dr Viroj Tangcharoensathien
09.45 - 10.30	Background Concept Paper : ***'Enhancing the Insurance Function of Health Systems: A Proposed Conceptual Framwork'*** by ***Dr. Joe Kutzin*** World Health Organization
10.30 - 11.30	**Country Presentation** ***Germany*** by ***Mr. Jergen Hohman*** Health Insurance Project, Germany ***Mr. Franz Knieps*** The Federal Association of Health Funds. Germany ***Japan*** by ***Associate Professor Yoshinori Hiroi*** University of Chiba, Japan
11.30 - 12.00	**Discussion**
12.00 - 13.00	Lunch
Chair-person:	Dr. Marc De Bruycker — Br Laos project
Rapporteur:	Dr Viroj Tangcharoensathien
13.00 - 13.45	**Issue Paper :** ***'History development of health insurance : experiences form OECD countries'*** by ***Dr. Alex Preker*** World Bank

Program (Continue)

13.45 - 14.45	**Country Presentation** ***Argentina*** by ***Dr. Peter Lloyd-Sherlock*** London School of Hygiene and Tropical Medicine ***Turkey*** by ***Dr Ahmet Emin Muderrisoglu*** Ministry of Public Health, Turkey
14.45 - 15.00	**Discussion**
15.00 - 15.15	Coffee Break
15.15 - 16.00	**Issue Paper :** ***'Strategies to achieve universal coverage of health care : lessons learned from Latin American countries'*** by **Dr. *Daniel Lopez Acuna*,** World Health Organization - PAHO
16.00 - 16.30	**Discussion**
March 16, 1998	
Chair-person:	Prof. Anne Mills
Rapporteur	Dr Prathom Sawanpanyalert
09.00 - 09.30	**Country Presentation** ***Korea*** by **Dr Ok Ryun Moon** Seoul National University, Korea
09.30 - 10.15	**Issue Paper :** **'Coverage and ownership. Balancing people's and technocratic expectations in social health insurance'** by **Dr.Bart Criel** Institute of Tropical Medicine Antwerp, Belgium
10.15 - 10.30	Coffee Break
10.30 - 11.30	**Country Presentation** ***Philippine*** by ***Dr. Jimme Galvez Tan*** ***Thailand*** by ***Dr. Supasit Phunnarunothai*** Ministry of Public Health
11.30 - 12.00	**Discussion**
12.00 - 13.00	Lunch

Program (Continue)

Chair-person:	Prof. Wim Van Lerbergh — Conceptual framework Th
Rapporteur:	Dr Supasit Punnarunothai
13.00 - 13.45	**Issue Paper :** **'Achieving Universal Coverage of Health Care through Appropriate Use of Insurance and Other Health Care Financing Methods'** by ***Dr. Phua Kai Hong*** University of Singapore ***Dr. Nick Prescott*** World Bank
13.45 - 15.00	**Group Work**
15.00 - 15.15	Coffee Break
15.15 - 17.00	**Group Work**

March 17, 1998

Chair-person:	Prof. Rainer Sauerborn — Th-BH
Rapporteur:	Dr Sumrit Srithamrongsawat
09.00 - 10.00	**Comparative paper :** ***'Comparative analysis of health insurance in participating countries'*** by ***Prof. Dr. Anne Mills,*** London School of Hygiene and Tropical Medicine
10.00 - 10.15	Coffee Break
10.15 - 12.00	**Presentation of Working Group**
12.00 - 13.00	Lunch
Chair-person:	Dr. Than Sein
Rapporteur:	Ms. Emiko Masaki
13.00 - 15.00	**Discussion**
15.00 - 15.15	Coffee Break
15.15 - 16.30	**Discussion**

Annex 2

Appointment of the Working Committee on Thai - Swedish Co-operation.

ANNEX 2

The Committee on Policy for International Health Cooperation's Order

No.1/ B.E. 2542 (1999)

Subject: Appointment of the Working Committee on

Thai – Swedish Cooperation

In connection with the Ministerial order no. 27/ B.E. 2541 (1998) dated January 12, B.E. 2541 (1998) appointing the Committee on Policy for International Health Cooperation ,

To achieve the full efficiency and development of the on – going and future projects between Thai – Swedish Cooperation , it is deemed appropriate to appoint the following individual as the member of the Working Committee on Thai - Swedish Cooperation , namely

1. Dr. Pakdee Pothisiri Deputy Permanent Secretary	Chairman
2. Dr. Suwit Wibulpolprasert Assistant Permanent Secretary	Vice Chairman
3. Representative from Department of Health	Member
4. Representative from Food and Drug Administration	Member
5. Representative from Praboromarajchanok Institute	Member
6. Representative from Bureau of Health Policy and Planning	Member
7. Representative from Health System Research Institute	Member
8. Representative from Department of Medical Services	Member
9. Dr. Sopida Chavanichkul	Secretary
10. Ms. Mayuree Vinothai	Assistant Secretary

effective forthwith.

Order on May 17, 1999

(Sign) Dr. Pakdee Pothisiri

Deputy Permanent Secretary

Acting Permanent Secretary

Annex 3

PM from a meeting with Dr Somsak Chunharas, HSRI, March 19, 1998.

PM from a meeting with Dr Somsak Chunharas, HSRI, Bangkok, March 19, 1998

Caroline Cederlöf and Dr Somsak Chunharas discussed the progress of the TASSIT collaborative project. We mainly discussed three points:

1. co-ordination between sub projects
2. the form for future collaboration
3. the bi-annual TASSIT report

1. Co-ordination between sub-projects

Caroline briefed Dr Somsak about how we work with linking the different sub projects in Sweden, through regular meetings with all people involved in all sub projects. The TASSIT project is quite broad, including projects in technology assessment, equity, hospital management, manpower development and social security. In Sweden, we have found linkages between the different sub projects, such as for example between the equity study and hospital management project. We have also found it very useful to exchange experiences and ideas between the different components and people, and we feel that we've been able to create a "team feeling" within the group. This has contributed to develop the project and the sub-components further. We agreed that this concept would be tried by Dr Somsak with his TASSIT team in Thailand.

2. The form for future collaboration

We agreed that we should focus on including projects which have clear links to each other in order to get the most out of the project. We also discussed the possibilities to work together with other institutions such as for example LSHTM, in areas where projects (planned or ongoing) have clear links, rather than running parallel activities. This we expect, would be highly beneficial for all parties as well as for the projects. We also agreed that additional activities that have clear links to projects within the TASSIT project could be included in the future, whereas projects that are found to be more in the periphery of the overall TASSIT project could be excluded in the next phase of the project.

3. The bi-annual report

The TASSIT group in Sweden has produced a first draft of a bi-annual TASSIT report. This could serve as a tool for marketing the TASSIT project and to share with other potential projects to be included under the TASSIT umbrella. The draft was given to Dr Somsak to be shared with his TASSIT colleagues in Thailand. In Sweden we would be grateful for comments as soon as possible, and we will thereafter finalise the report.

Caroline Cederlöf

Annex 4

Prioritised project proposals and presentation of the HTA project proposal.

ANNEX 4

โครงการความร่วมมือด้านสาธารณสุขระหว่างประเทศกับสวีเดน (จัดลำดับความสำคัญแล้ว)

	ชื่อโครงการ	หน่วยงานรับผิดชอบ
1.	Health Technology Assessment	กรมการแพทย์
2.	Improving Regulation and Strengthening Officer's Potential for Controlling/Monitoring System on Pharmaceutical Product	กองควบคุมยา สำนักงานคณะกรรมการอาหารและยา
3.	Reorientation of Public Health Administrator Development	สถาบันพระบรมราชชนก
4.	Model Development for Ambulance Service in Nakhonrajsrima, Nakornsawan and Khonkaen Province	กองโรงพยาบาลภูมิภาค สำนักงานปลัดกระทรวงสาธารณสุข
5.	Emergency Medical Service (EMS)	สถาบันการแพทย์ด้านอุบัติเหตุและสาธารณภัย กรมการแพทย์
6.	On the Job Training for Thai Paramedic Nurses in Sweden	ศูนย์นเรนทร โรงพยาบาลราชวิถี กรมการแพทย์
7.	Reorganization of Praboromarajchanok Institute : Facing New Millennium	สถาบันพระบรมราชชนก
8.	Toxicological Evaluation of Hazardous Substance Products Used in Household and Public Health	กองควบคุมวัตถุมีพิษ สำนักงานคณะกรรมการอาหารและยา
9.	Appropriate Management System Medical Waste in Hospital	สำนักอนามัยสิ่งแวดล้อม กรมอนามัย
10.	Strengthening Import-Export Inspection	กองสารวัตร สำนักงานคณะกรรมการอาหารและยา
11.	Decentralization of Tambon Health Center	สำนักนโยบายและแผนสาธารณสุข
12.	Building Learning Organizations	สถาบันพระบรมราชชนก

	ชื่อโครงการ	หน่วยงานรับผิดชอบ
13.	Training Knowledge Saves Lives for Rescue Staffs	กองโรงพยาบาลภูมิภาค สำนักงานปลัดกระทรวงสาธารณสุข
14.	Local Environmental Management : Sustainable Development Approach	สำนักอนามัยสิ่งแวดล้อม กรมอนามัย
15.	Risk Management in Industrial Estates : Petrochemical Group	สำนักอนามัยสิ่งแวดล้อม กรมอนามัย
16.	Indoor Air Quality Management in Hospital	สำนักอนามัยสิ่งแวดล้อม กรมอนามัย
17.	Health Futures Studies Training	สำนักนโยบายและแผนสาธารณสุข

DRAFT

Summary of Project Proposal under Thai-Sweden Technical Cooperation

1. Title of the Project:

Health Technology Assessment

2. Responsible unit:

Department of Medical Services

3. Duration:

2000-2001

4. Objective:

To improve efficiency and quality of health care delivery system through collecting the knowledge and promoting the activities that will lead to appropriate management of health technology

5. Justification of this project:

Two of people from Department of Medical Service, MoPH was invited to train in SBU (The Swedish Council on Technology Assessment in HEALTH care), Sweden in 1999 under the TASSIT project which collaboration between the Health System Research Institute (HSRI) in Thailand and the Division of International Health Care Research (IHCAR) in Sweden. Prof. Egon Jonsson, director of SBU suggest to train more people to understand the Health Technology Assessment Process.

6. Proposed Activities and Timeframe:

Year	Activities
2000	- Workshop on " Essential tools for Health Technology Assessment" in Thailand by - Site visit in Sweden Health Technology Assessment office by Thai delegation.
2001	- same as year 2000 and follow-up the projects that start from the workshop on year 2000

7. Expected Outcomes:

The people who responsible to Health Technology Assessment was understanding to use the essential tools for Health Technology Assessment and start to assess the particular health technologies.

8. Estimated Budget:

600,000 baht/year

(The workshop arrangement costs in Thailand and workshop trainee expenses are belong to Thai government)

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Annex 5

Report on Equity in the Financing of Health Care in Thailand.

ANNEX 5

EQUITY IN FINANCING OF HEALTH CARE IN THAILAND

by

Clas Rehnberg* and Supasit Pannarunathai#

Under the Swedish-Thai Collaboration for Health Services Development
with support of the Health System Research Institute (HSRI), Bangkok, Thailand

Feb. 1999

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1. BACKGROUND AND PURPOSE OF THE STUDY

Thailand has been transformed from a subsistence agrarian society into a rapidly industrialized market economy. The average annual economic growth from 1965 to 1990 was around 4 per cent. At the same time health indicators such as infant mortality rate shows an improvement of public health and the absolute poverty has also decreased. However, the development of the income distribution shows a tendency towards increasing income inequality, indicating that the wealthy groups have gained relatively more of the economic growth. The income differences as measured by the Gini coefficient has increased during the 1970s and 1980s (NSO 1986).

The recent economic growth has been accompanied by increasing demand on health services. The health care expenditures have grown with an increasing gross domestic product (GDP). The health care spending as a share of GDP was around 6 % in 1992. Public sources play a minor role in financing health services and comprise about 25% of the total health expenditure. Hence, private household expenditures (or out-of-pocket payment) constitute the major part of health financing. This has caused major concerns about the equity health service finance and delivery.

The purpose of this project is to analyze the financing system in Thailand with respect to coverage and equity. The methodology used is based on earlier applied works on equity in the finance of health care (van Doorslaer & Wagstaff 1994). The equity implication for delivery, utilization and health is presented in a separate report (Pannarunathai & Rehnberg 1998).

2. THE HEALTH CARE FINANCING IN THAILAND

The organization and financing of the health care system in Thailand has undergone several changes during recent years. Historically the government, through the Ministry of Public Health (MOPH), has been the major provider of hospital care and health centers, especially in the rural areas outside the Bangkok Metropolis. Since the 1970s the private hospital sector has expanded extensively, especially in the Bangkok area. Overall about 80 per cent of all hospital beds are public.

However, it is important to distinguish between public financing and public provision.. The financing of health care show a complete different picture where the public hospitals receive the major part of their revenues through patients fees, i.e. private financing. The official figures concerning health care financing show a very low share of third party financing. The major part comes from private payment as out-of-pocket fees. As shown in table 1 the public financing comprise around a fourth of the total expenditures and private insurance is almost nonexistent.

Table 1. Distribution of health care financing, percentage, 1987 prices

Sources of finance	**1984**	**1986**	**1987**	**1994**
Public sources:	27,9	26,0	24,2	22,9
• MOPH	17,4	15,3	14,1	17,1
• Other ministries	6,9	6,5	6,0	1,4
• Public employee medical benefits	3,6	4,2	4,1	4,4
Workmen's compensation fund	0,5	0,4	0,4	0,2
State enterprise employee benefit	0,8	0,9	0,8	1,1
Foreign aid	0,8	0,7	0,7	--
Private insurance	0,8	0,8	0,7	0,3
Out-of-pocket payments	69,3	71,2	73,2	75,5
Total: percent	**100,0**	**100,0**	**100,0**	**100**
Million Bath	**53032,9**	**62099,9**	**67771,3**	*208548*[1]

The public financing consist of different schemes for the indigence (the poor, elderly and children) and health benefits for government employees. The government also subsidies some health insurance schemes (the Health Card and Public employees). There are also other indigent groups who receive free care after interviews with social workers at the hospitals. Still, around half of the population have no insurance coverage at all for health services. Those citizens eligible for public insurance coverage do also pay patient fees for pharmaceuticals and for use of private providers. The health benefit coverage is presented in table 2.

Table 2. Health benefit coverage in 1992

Type of scheme	**Million covered**	**Percentage**
1. Health welfare for general population	**20,3**	**35,9**
1.1 Low income	11,7	20,7
1.1 The elderly	3,5	6,2
1.3 Primary school children under M. education	5,1	9,0
2. Health welfare for government employees	**6,4**	**11,3**
2.1 Civil Servant Medical Benefit Scheme	5,6	9,9
2.2 Public enterprises	0,8	1,4
3. Compulsory health insurance	**2,5**	**4,4**
3.1 Social Security Scheme s	2,5	4,4
3.2 Workmen Compensation Schemes	1,8	3,2
4. Voluntary health insurance	**2,2**	**3,9**
4.1 Health Card project	1,3	2,3
4.2 Private insurance	0,9	1,6
Covered	**31,4**	**55,6**
Uncovered	**25,1**	**44,4**

Source: Supachutikul (1992)

[1] 1994 prices

Giving the structure of the financing system, there are concerns regarding the accessibility and equity of the system. As nearly 50% of the population is not covered by any public or private scheme for health services, the ability to pay for health services is largely a function of people's income.

3. METHODOLOGY

In this study the equity issue is handled separately for financing and delivery of health care. The analysis of equity in the finance of health care starts from the premise that payments for health care ought to be positively related to ability to pay. The financing of a health care system is progressive if the rich pay a larger proportion of their income on health that the poor. The most common index of progressivity is Kakwani's index (Kakwani 1977). This index measures the extent to which a financing system departs from proportionality (see figure 1). The cumulative proportion of the population, ranked according to pre-tax income, is plotted against the cumulative proportion of tax payments in order to obtain a tax concentration curve. If the financing system is proportional the Lorenz curve[2] and the tax concentration curve will coincide, and if the system is progressive the tax concentration curve will lie outside the Lorenz curve. The tax concentration index for n people may be formalized to

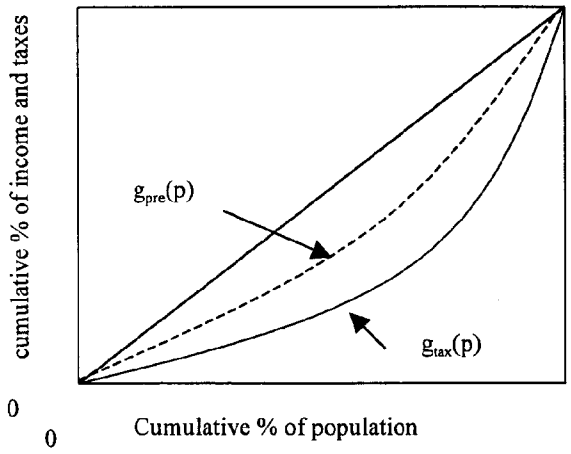
$C_{tax} = 1-(2/n^2Tx) * (t_1x_1+2t_2x_2+....+nt_xx_n) + 1/n$

where Tx=average tax; t=tax rate; x=pre-tax income

where and $x_1+>x_2>....>x_n$ equals pre-tax income, t_1 to t_n tax rates,

$T_x = t_1x_1+t_2x_2+....+t_nx_n$ and $Tx = Tx/n$

Figure 1. Kakwani index of progressivity



If G_x is the Gini coefficient[3] for pre-tax income then Kakwani's index of progressivity, K_T is defined as $K_T = C_{tax}-Gx$. Since $-1< C_{tax} <1$ and $0< G_x <1$ the lowest value for K_T is -2. This is a situation

[2] If all households are ranked by income from the lowest to the highest along the bottom axis as in figure 1, and along vertical axis by percentage of income received, a Lorenz curve is traced out.

[3] $G_x = 1-(2/n^2y) * (y_1+2y_2+3y_3+.....ny_n) + 1/n$

where y=average income; y=income

where the richest person receives all incomes so that G_X is 1, and the poorest person pays all taxes, so that C_{tax} is -1. The highest value for K_T is 1. Then one person pays all taxes, so that C_{tax} is 1, and incomes before tax are distributed so that G_x is zero. Kakwani states that if K_T is positive (negative) the tax system is progressive (regressive). Kakwani's index is defined as twice the difference of the area below the tax concentration curve and the Lorenz curve (figure 1).

4. PROGRESSIVITY OF HEALTH CARE FINANCE IN THAILAND

Data

Initially the empirical base was reviewed in order to judge the feasibility of the study. Two sets of household surveys are used: i) The National Socioeconomic survey (SES) for 1986 and 1992 (including 15 900 households), ii) The Health and Welfare survey (HWS) for 1986 and 1991 (including about 20 000 households). The review of the two data-sets and additional economic measures regarding health care financing and expenditures was collected from the Ministry of Health and the National Statistics Office. Additional information concerns statistics of health care expenditures, the government revenues and public expenditures and taxation rules for Thailand. The distribution of the governments tax revenues was divided into direct and indirect (table 3).

Table 3. Government income 1986 and 1992

Government revenues	**1986**	**1992**
• Direct taxes	26%	32%
• Indirect taxes	74%	68%

Source: Budget Bureau, Ministry of Finance 1997

Direct taxes are only paid by the richest households, whereas indirect taxes such as VAT, are paid by all consumers. As shown in table 3 the direct taxes increases as a share of government income. This indicates that more households are reaching the income for paying income tax. The indirect tax has a broader base and are paid by all citizens depending on their purchase of goods and services. To calculate each households contribution to indirect taxes, information of consumer expenditures was used. It was also considered that consumers of alcohol and tobacco paid a higher percentage of indirect taxes.

Empirical results - Equity in financing of health care

The results for the financing study shows that the Thai health financing system is highly regressive, i.e. the poor pay a higher percentage for health services of their income than the rich. The distribution of the financial burden and the calculation of the Kakwani index has been performed for 1986 and 1992. The results for 1986 is presented in table 4, where the households have been grouped and ranked in ten deciles according to their income. All incomes and payments have been adjusted by the same equivalent scale in order to adjust for family size and age[4].

Their share of income, different taxes for health care and out-of-pocket payments are calculated. From the table we can observe that direct taxes are highly progressive, but as they only represent 7

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and $y_1+>y_2>\ldots>y_n$

[4] A equivalent scale based on earlier studies in Thailand was used: First adult=1.0,, other adults =0.7 each and for each child 0.5.

per cent of total financing its impact on the total financing is small. Indirect taxes and private payment are regressive as is the total financing system. The results is in line with international observations given the financing sources for health care. The Kakwani index is also negative indicating regressivity.

Table 4. Distribution of health care financing (percentage 1986)

Income decile	Pre-tax income	Direct tax	Indirect tax	Private payment	Total payment
Bottom	1,61	0	4,61	5,75	5,12
2nd	2,61	0	5,45	6,74	6,01
3rd	3,46	0	6,31	7,37	6,64
4th	4,43	0	6,76	7,09	6,53
5th	5,59	0	7,98	8,27	7,63
6th	7,06	0,10	9,13	8,71	8,19
7th	9,11	0,44	11,06	10,00	9,54
8th	12,06	1,65	12,82	14,38	13,18
9th	17,07	9,82	14,84	12,92	13,09
top	37,01	87,99	21,03	18,76	24,06
total revenue	--	7%	20%	73%	100%
Index					
Gini/Conc	0,4915	0,9240	0,2657	0,2116	0,2723
Kakwani		**0,4325**	**-0,2258**	**-2799**	**-0,2192**

The proportion of total payments for health care by the lowest decile is substantially higher than the proportion of their income it receives. At the other extreme, the highest decile pays a lower percentage to health care compared with their income.

In order to analyze the trend and compare the effects of changes of the health financing system the calculation was repeated for 1992 (table 5).

Table 5. Distribution of health care financing (percentage 1992)

Income decile	Pre-tax income	Direct tax	Indirect tax	Private payment	Total payment
Bottom	1,45	0	3,88	4,94	4,36
2nd	2,36	0	4,40	4,44	4,08
3rd	3,17	0	5,09	5,10	4,69
4th	4,12	0	5,92	5,78	5,34
5th	5,29	0	6,85	6,55	6,08
6th	6,75	0,01	8,18	7,85	7,28
7th	8,68	0,04	9,26	9,53	8,72
8th	11,45	0,96	11,41	8,71	8,55
9th	16,16	2,98	15,46	15,66	14,61
top	40,58	96,01	29,33	31,44	36,25
total revenue	--	8%	17%	75%	100%
Index					
Gini/Conc	0,5217	0,9618	0,3582	0,3614	0,4089
Kakwani		**0,4401**	**-0,1635**	**-0,1603**	**-0,1128**

The result from 1992 is similar to the ones from 1986, although the regressivity is reduced. However, it is difficult to interpret this development, as the main change is less regressivity for the private payments. This could indicate that the rich pay more for health care but also increase their own utilization of health services. Our results also supports previous studies about increasing income differences in Thailand as the Gini-coefficient has increased.

5. CONCLUSION AND DISCUSSION

This study has been based on two household surveys where the expenditures per household is reported. The main uncertainty in the study is the proportion of the out-of-pocket spending for health services. There is no good information to validate this proportion by using official data. Hence, the reported expenditures in the household surveys are related to official data for other sources of finance. These sources are direct taxes from citizens and corporation and indirect taxes such as different sales taxes and VAT.

The overall income distribution shows that the gap between high and low income groups has been widening. The Gini-coefficient increased from 1986 to 1992. Of the total cost of health care 75 per cent was financed through private payment. The Kakwani index shows a negative value indicating that the overall financing system of health care is regressive for both years. As direct taxes are only paid by high income people it shows a high progressivity, whereas indirect taxes and out-of-pocket payment is regressive.

Progressivity index values confirm that income taxes are the most progressive source of financing health care. There seems to be mixed experience for indirect taxes and private payment for the two study years. In 1986 indirect taxes were less regressive than private payments, whereas there is hardly no difference in 1992. These differences are difficult to explain as it reflects both total

consumption pattern and the payment for health services. A central question is, of course, to what extent the private payments reflects the utilization of health services. One possible explanation of the change of private payments from 1986 to 1992is that the rich people have increased their use of health services. Another explanation is that some providers, mainly public ones, do not charge all poor people for their use of services. However, it is obvious that, if the share of private payments was reduced or changed to an income-conditioned payment scheme, the progressivity of the financing system would be increased.

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THE PROCESS

The work with reviewing the two data-sets and additional economic measures regarding health care financing and expenditures started during the visit by Dr. Supasit Pannarunathai in Stockholm December 1995 together with Clas Rehnberg The work continued in 1996 with exchange of information and preliminary results for the financing study were presented at several seminars in Bangkok during Clas Rehnberg's visit in 1996. Representatives from the Ministry of Health, HSRI, different social insurance institutions and the Chulalongkorn University attended the seminars. During the seminars there were several valuable suggestions and proposals that come up and which we have considered in the following work to finalize the results. Discussion about further work of the project was also held with Dr. Anuwat Supachutikul. The preliminary results have also been presented by Clas Rehnberg at a SIDA seminar about health care financing in developing countries (at Norra Latin May 23, 1996) and at IHCAR in spring 1997.

The revision of the financing-study has been done parallel to the study concerning equity in utilization of health care. There are several links between the two studies that must be clarified. In December 1996 Dr. Supasit visited Stockholm for further work with the study. After further revision and exchange of data and analysis the final results of the financing study was presented together with some preliminary results of the delivery study when Clas Rehnberg visited Thailand in July 1997. Several seminars and meetings were held at the Ministry of Health, HSRI, the Department of Finance and the National Statistic Office. The methodology and the results of the financing study was confirmed by involving parties. Training modules were also performed during Clas Rehnberg's visit in April 1998 (during presentation of final delivery-study) with participants from Departments of Health and Finance and the National Statistics Office.

Annex 6

Report on Equity in the Delivery of Health Care in Thailand.

ANNEX 6

Equity in the Delivery of Health Care in Thailand

By

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1. Introduction

The Thai national health objectives have never been pronounced in equity objective as observed in the new 1997 constitution. It is mentioned in the constitution, Act 52 that ".. all Thai citizens have equal right to use good quality health care, and the poor have right to use health services at government health facility free of charge as to be mentioned in the organic laws ...". And in Act 81, "the government must provide and promote the people's health through good quality and efficient health care to all". These statements are philosophical rather than operational objectives because the targets to achieve have never been set out. Therefore, there is a need to measure inequity to help set the national health objective and monitor the situation as mention in the constitution.

The index to measure equity must portray these characteristics (van Doorslaer et al 1997). First, the index has to stratify population by income to reflect socio-economic dimension in health inequity. Secondly, the index must reflect experiences of the entire population. Thirdly, the index must be sensitive to changes in the distribution of population across socio-economic groups. These requirements lead to the need to use concentration index to measure inequity patterns. Furthermore, concentration index satisfies three basic requirements: it relates to relative index of inequality, it has more visual appeal, and it is calculated from a concentration curve (van Doorslaer et al 1997).

Concentration index has been used to measure inequity in health care financing in Thailand using the socioeconomic surveys (SES) of 1986 and 1992 (Rehnberg and Pannarunothai 1998). Kakwani index was calculated by subtracting concentration index of taxation with concentration index of income distribution to reflect progressivity or regressivity of health care finance. The results of Kakwani index call for the second phase of research which focus on developing indices for health care delivery.

The objective of this study is to investigate to what extent health care is distributed according to need, rather than according to ability to pay. Detailed objectives can be elaborated as follows:

- To measure equality of health care utilisation for equal need.
- To measure equality of health utilisation with respect to geographical areas and socioeconomic variables.

2. The Thai health care system

This chapter briefly explains health care delivery system in Thailand, **especially during 1986 and 1991** because we use data from that period to calculate inequity indices. Health seeking behaviour will be described first and then followed by description of health care providers.

Health seeking behaviour

The health care system in Thailand has been described as pluralistic. People seek care from both formal and informal health sectors, and from public and private health facilities. Table 2.1 shows health seeking behaviours of the Thai people over a 20 year period based on various surveys. A trend can be observed, though caution must be made for different data definitions of different surveys, that traditional medicine stayed at an endemic level of 5%, drug stores reduced the share while private sector expanded (Pannarunothai 1996). Unfortunately, health seeking behaviours from the 1985 survey were quite different from others, thus, difficult to compare.

Table 2.1 Health seeking behaviours by various surveys

Health facilities	1970	1979	1985 IPSR		1991 NSO	
	MOPH	MOPH	All	Urban	All	Urban
Do nothing	2.7	4.2	-	-	15.9	17.9
Traditional medicine	7.7	6.3	2.4	1.1	5.7	4.7
Drug store	51.4	42.3	28.6	13.6	38.3	36.9
Health centre	4.4	16.8	14.7	0.7	14.8	2.7
Government hospital	11.1	10.0	32.5	41.2	12.9	13.1
Private clinic and hospital	22.7	20.4	21.8	38.3	12.4	24.7

Note: MOPH - Ministry of Public Health
IPSR - Institute for Population and Social Research, Mahidol University
NSO - National Statistical Office

Supply of the health care system

Important factors influencing the patterns of health seeking behaviour were both income and the supply of health care. From 1986 to 1990 by the NSO SES, household income had increased (a 36% rise per year by current price), then people spent more on health services in private health sectors (a 30% rise per year by current price). The increases of income and spending for private health were much larger for people in urban area than in rural area. So we can see a sharp increase in private hospital beds as compared to the growth of public hospital beds during this period (see table 2.2). The average annual growth of private hospital beds increased from 10% during 1978 to 1987 to 14% during 1987 to 1992. This increase occurred in other big cities (a 21% increase per year) faster than in Bangkok (an 11% increase per year). The average annual growth for private clinics all over the country was about 16% during 1987 to 1992.

Table 2.2 The growth of hospital beds in public and private hospitals

	All	Hospital		Private hosp beds	
	beds	Public	Private	Bangkok	Others
1978	57,542	52,014	5,528	3,041	2,487
1987	87,905	77,580	10,325	5,935	4,390
	(5.86)	(5.46)	(9.64)	(10.57)	(8.50)
1992	103,712	85,920	17,792	9,074	8,898
	(3.60)	(2.15)	(14.46)	(10.58)	(20.54)

Numbers in ( ) are the average % annual growth

Distribution of health resources has always been a big problem. Hospital beds are usually concentrated in Bangkok, the beds to population ratio in 1993 was 4.1 beds for 1,000 population, four times higher than the ratio of the northeast (see table 2.3). The concentration of private hospital beds in Bangkok was higher than the concentration of public hospital beds in any other regions.

Table 2.3 Hospital beds per 1,000 population by region in 1993

Region	*Public*	*Private*	*Total*
Bangkok	2.4	1.7	4.1
Central	1.6	0.4	2.1
North	1.3	0.2	1.5
Northeast	0.9	0.1	1.0
South	1.5	0.2	1.7

Source: Ministry of Public Health

3. Equity in the delivery of health care

This section discusses the methods used to measure equity in the delivery of health care. It starts with measuring health status, to take account of the needs for health care, and followed by health utilisation. Health status will be used as a measure of health need to judge for inequality in health care utilisation for equal need. In other words, vertical equity is first considered, as people's health status may not be equally distributed amongst different income level. Measuring health status also allows for considering horizontal equity when comparing utilisation after standardising for equal health status or equal needs. Data manipulation techniques are discussed in details because of the lack of income data in the national Health and Welfare surveys (HWS).

The Health and Welfare survey

The HWS is the survey on health status and health service delivery conducted once every 5 years by the National Statistical Office (NSO). The survey has been established since 1974 as demanded by public and private organisations. The 1986 survey asked the household member's state of well-being in terms of physical health (disability), acute illness, injury; and health service utilisation in terms of consultation to any kinds of health services (public and private) and hospitalisation. This survey interviewed 19,323 households, 3,780 in Bangkok and 4,068 in other municipal areas (NSO 1988).

The 1991 survey had almost the same information to evaluate people's health status and health service delivery, except some dissimilarities in details discussed later in this chapter. This year, it covered 27,780 households, of which 5,040 were in Bangkok and 5,880 in other municipal areas (NSO 1993).

Methods

This section describes methods used for measuring vertical and horizontal equity in this study. The author aware that there are better methods developed recently by van Doorslaer and Wagstaff (1997), but not applied here, because of time lag period.

Vertical equity

Few literature has pursued to measure vertical equity in the delivery of health care (Cullis and West 1979). It is difficult to judge how much unequal treatments should be given to different groups who need health care unequally. Culyer (1989) pointed out that some severely ill patients may need fewer medical treatments than the marginally ill because treatments made little improvement to the former, while preventive medical care could improve the latter's future health. However, this study persues vertical equity at a simplest form, whether ill health is distributed equally amongst the poor and the rich.

Concentration indices for self-assessed acute illness, chronic illness, disability, will be calculated to reflect equality patterns. Figure 3.1 plots the cumulative proportion of the population ranked by household income against the accumulative proportion of ill health.

The concentration index, C_{ill}, is calculated as the area of how far the curve deviates from the diagonal (equality) line. The formula to calculate is as follows:

$$C_{ill} = 1-(2/n^2H) * (h_1+2h_2+3h_3.....+ nh_n) + 1/n$$

n = number of individuals
h = individual's health state: 0 means good health, 1 means ill
H = average health state

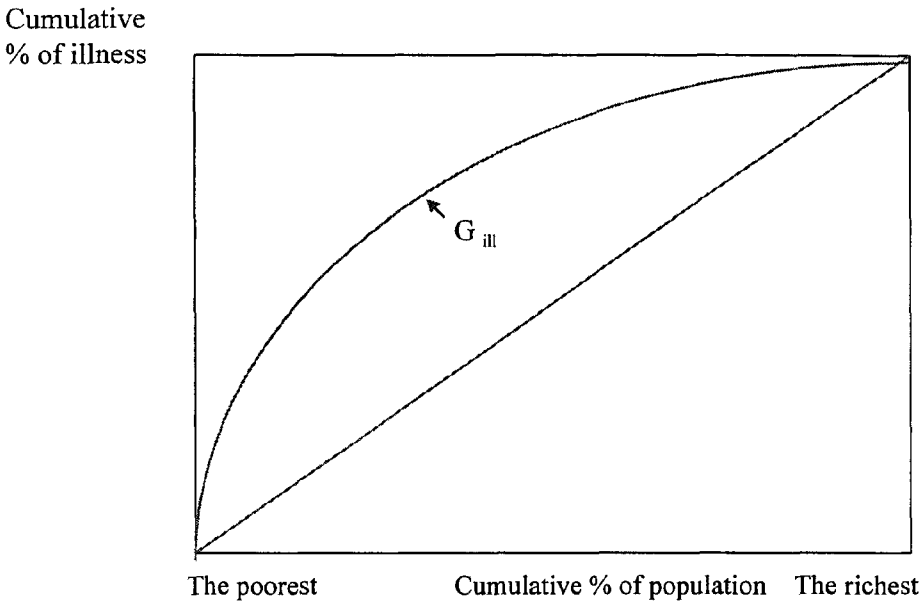

Figure 3.1 Concentration curve of ill health

The value of C_{ill} varies from +1 to -1. The value of negative sign (regressive to income) means that the area is above the diagonal line, if it is positive (progressive to income) the area is below the diagonal line. If the index is 0, it may be that the curve and the diagonal line coincide, or the areas above and under the diagonal line are equal. If concentration index for ill health is negative, it means that the poor are proportionately sicker than the rich. So the condition favours the rich.

Horizontal equity

The concept of horizontal equity in health care delivery has been widely operationalised across the European countries van Doorslaer, Wagstaff and Rutten (1993). This concept tries to avoid the trap found in the vertical equity. Assumptions are made that within the same group classified as chronically sick need more medical treatments than those who care acutely sick. However in the analysis, the groups classified as having the same need should have the same treatment concentration regardless of 'ability to pay', geographical areas, or other socioeconomic variables.

Two indices of equity of health delivery for equal need will be calculated for the whole country and also for subgroups of population, e.g. rural-urban disparity, socioeconomic

groups. This part of the study will complement the first phase of equity in health care financing, where it has been proved that health consumption has been regressive to income (Rehnberg and Pannarunothai 1998).

The first index is to measure the horizontal equity of health delivery developed by Le Grand:

(1) $HI_{LG} = C_{exp} - C_{ill}$

where HI_{LG} is a Le Grand type index of horizontal equity[1]
C_{exp} is a consumption concentration index, this report will later called it The concentration index for consumption of health care[2]
C_{ill} is an illness concentration index

The concentration index for consumption is estimated from

- quantifying the use of health services (different levels of health care) for each group of households.
- estimating the total consumptions by multiplying the frequency of uses with price or average cost for each level of care[3].

If the concentration index for consumption (C_{exp}) is positive (progressive to income), it means that the rich utilise health care at a higher rate than the poor.

If the concentration index for illness (C_{ill})is positive (progressive to income), it means that the rich fall ill at a higher rate than the poor.

And if concentration index of health care consumption is larger than the index of illness, the horizontal index for health care delivery (HI_{LG}) will be positive (progressive to income), it means that the rich utilise health care at a higher rate than the poor.

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[1] The requirement that persons in equal need will be treated equally.

[2] Consumption of health care is more understandable than expenditure, because expenditure conveys the sense that who pays for the care consumed.

[3] The average costs used in this study adapted from Pannarunothai and Mills (1998) as follows:

Health facilities	Charge (baht)
Drug store	45
Outpatient services at	
Mobile clinic	80
Health centre	80
Municipal clinic	120
Public hospital	349
Private clinic	167
Private hospital	575
Others	100
Inpatient services per day at	
Public hospital	450
Private hospital	1,397

The second index is calculated by standardisation methods, of which there are 2 techniques:

(2.1) HI_{WVP} = C_{exp}' (van Doorslaer, Wagstaff and Rutten 1993)

where HI_{WVP} is a standardised index of horizontal equity
C_{exp}' is the standardised consumption concentration index

(2.2) HI_{WV} = $C_M - C_N$ (van Doorslaer and Wagstaff 1997)

where HI_{WV} is a standardised index of horizontal equity
C_M is concentration index for medical care
C_N is the indirect standardisation concentration index for need, or expected medical care consumption

interpretation of the index + inequity favouring the rich
- inequity favouring the poor
0 proporationality is the same, regardless of income.

The difference between the two indices (Le Grand's approach and the standardised approach) is that HI_{WVP}, or HI_{WV} takes account of the differences in age-sex structure of each subgroup of population and severity of illnesses which intervene illness experiences, uses of services and consumption. In this study, we present both Le Grand and the standardised approaches.

Data

In studying equity of health care delivery, it is inevitable that the data from the NSO SES be linked to the NSO Health and Welfare Survey (HWS). This study explored the use of link variables between SES 1986 and HWS 1986, and SES 1992 and HWS 1991 (the SES is only available on the even year while the HWS is available every 5 years). The SES 1992 was selected to match with the HWS 1991 because in the first phase of equity study, we compared equity in health care financing between 1986 and 1992. The possible variables to be used are listed in table 3.1. Education and occupational groups of household heads existed in both surveys, but not the socioeconomic class. In occupational groups, the two surveys used different coding systems. The 1986 HWS used one-digit coding, while 1991 HWS used 2-digit, but the SES used 3-digit. A conversion table between these two codes had to be mapped before we could link the 2 surveys.

Table 3.1 Data variables in the health and welfare and socioeconomic surveys

	HWS 1986	**SES 1986**	**HWS 1991**	**SES 1992**
Household head	Education	Education	Education	Education
Household head	Occupation (1)	Occupation (3)	Occupation (2)	Occupation (3)
Household head	-	Socioeconomic class	-	Socioeconomic class

The number in ( ) is the digit codes used in the surveys.

Variables on health status and uses of health services

There were variations in the questions asked in the HWS of 1986 and 1991. There were more acute conditions in 1991 than in 1986 because in 1991, each individual could report up to 3 acute conditions during the past two weeks. Furthermore, each individual could up to three chronic conditions in 1991, while there was no question on chronic condition in 1986. The biggest mistake in 1991 was that there were no questions related to hospitalisation (see table 3.2).

Table 3.2 Questions asked in the health and welfare surveys in 1986 and 1991

Data items	*HWS 1986*	*HWS 1991*
Acute illness	• Questions asked on experiences within the past 2 weeks, only one condition/illness was allowed. • Number of days absent from work. • Use of health services, (this question was set rather later after asking on injuries).	• Three entries are allowed for each individual. • Number of days absent from work are linked to each acute illness. • Use of health services were are asked by two questions: the first day of seeking care and the last treatment used.
Injury/accident	• Not specify the period of asking, presumed two weeks. • One entry for type of injuries and the cause. • One question on where treated for injury and another on why used self-treatment.	• Injuries within 2 weeks were asked. Three entries are allowed of type of injuries and place of accident. • No questions on use of health services.
Chronic condition	• No questions asked.	• Three entries were allowed for taking chronic conditions. • The second question asked how did they know of that condition. • What was the most common mode of treatment.
Hospitalisation	• Three questions were asked: whether being hospitalised, where and how long.	• No questions asked.
Disability	• Two conditions of disabilities could be noted, with the causes and diseases.	• Three conditions of disabilities were allowed, with the causes of each condition. • If the disable did not work, a question was asked on why.
Use of herbal medicine	Several questions were asked: • whether they used any herbs as medicine, • for what conditions, • how much they cost, and • what the results were.	• No specific questions asked on herbal medicine. • Questions asked on use of general drugs within 2 weeks, and the purposes. • No costs were estimated.

So the total illness and total consumption/utilisation for 1986 and 1991 cannot be directly compared. Illness and the use of ambulatory care in 1986 include data items on acute illness, injury and may or may not include herbal medicine. While in 1991, they include chronic condition but not the use of herbal medicine. The missing data on hospitalisation in 1991 had to be estimated from a logistic regression from another study which focused on people in an urban area (Pannarunothai and Mills 1997). The equation looks like this:

$$\text{Probability (hospitalisation)} = \frac{1}{1 + e^{-Z}}.$$

where Z is the linear combination of

$$Z = 0.0008\,\text{Age} - 0.0365\,\text{Sex} + 0.1436\,\text{QHin1} - 0.0477\,\text{QHin2} - 0.0503\,\text{QHin3} + 0.230\,\text{QHin4} - 0.2929\,\text{Ed} - 0.9607\,\text{Tcover0} + 0.8684\,\text{Acute} + 1.1609\,\text{Chronic} + 0.7426\,\text{Disable} - 2.1982 \quad \ldots\ldots\ldots^{4}$$

Assumptions

Assumptions to be made: due to the lack of income data in the HWS, assumptions have to be made to rank individuals and households. Families with the same ranks of socioeconomic groups (based on education, occupation and age of household heads and region and area of the house) will have the same level of income based on the SES.

Reliability of data: any household surveys tend to report lower income level in each household. Representativeness of sample (refusal and replacement) may be a problem. However, in general, the same method has been implemented and large samples are interviewed. There are a set of questions to ask for acute illness within the past two weeks, chronic conditions and disabilities. This contributes to the strengths of the existing surveys.

Validity of data: due to large scale survey, the tool used to collect data has to be standardised so that it interprets the same for interviewers, interviewees and field supervisor. Conducting own survey needs a huge investment to ensure data validity.

4

Variables	Description	Value
Age	Age	Real value
Sex	Sex	0 = female, 1 = male
Ed	Education of individual	0 = no education and primary, 1 = higher
QHin1	Income quintile 1	0 = others, 1 = quintile 1
QHin2	Income quintile 2	0 = others, 1 = quintile 2
QHin3	Income quintile 3	0 = others, 1 = quintile 3
QHin4	Income quintile 4	0 = others, 1 = quintile 4
Tcover0	Type of health benefit	0 = Others, 1 = not covered
Acute	Acute illness	0 = none, 1 = ever had illness within the past 2 weeks
Chronic	Chronic illness	0 = none, 1 = with one or more chronic illnesses
Disable	Disability	0 = none, 1 = with one or more disabilities

Because this study used the existing data set, then checks for representativeness of data had to be made against other official statistical publications or other pieces of research that relied on their own household surveys. Parameters for comparison are: age, sex, education, number of children in the family, income, taxation, consumption on goods and indirect taxes, etc.

Standardisation

Because age and sex are strong confounding factors of health status, health care delivery and health consumption, so standardisation of the concentration index for age and sex is necessary to allow us compare like with like. There were two methods of standardisation: direct and indirect. Direct method was done by grouping the population into 5 age groups (0-4, 5-14, 15-44, 45-59 and 60+), and each age group into male and female. Average experiences (on ill health, use and consumption) of each age-sex group were used to estimate expected events for each age-sex group of each decile.

Indirect standardisation employed regression analysis to estimate the expected experiences for each individual. In van Doorslaer, Wagstaff and Rutten (1993), they used 2 step-estimation on probability of consumption (probit model) and the size of consumption (ordinary least square) to standardise consumption. In their recent study, van Doorslaer and Wagstaff (1997) run a regression of medical care utilisation on a set of need indicator variables to estimate need-expected utilisation.

4. Results

This chapter presents the calculations of concentration indices (CI) as discussed in chapter 3. The results show some degrees of vertical and horizontal inequities comparing the situation in 1986 and 1991. The chapter starts with clarification on representativeness of the data and the manipulation of socio-economic ranking.

Representativeness of data

To verify the representativeness of data, the two surveys (SES and HWS) were checked for important socio-economic variables of household head; ie. education and occupational groups. Tables in annex show that household heads of the two surveys were predominated with the primary education and farmers, for 1986 and 1991/92. After fulfilling the assumption, the next important step was to add income variable to the HWS, using household income from the SES.

Adding income ranks to the HWS

Instead of using a regression model from the SES to predict household income of the HWS, the authors inclined to rank households by income ranks (not by absolute values of income) because more than 25% of the samples shared the same education and occupational groups. The steps used were listed as follows:

- Categorise households in the SES in to small groups by education level and occupational group. The 1986 SES provided 635 small groups, and the 1992 SES provided 752 groups by 2-digit education and 2-digit occupational coding.
- Calculate the average income for each group in the SES.
- Rank the households by income in the SES.
- Give the ranks to the HWS for households with the same education and occupational groups as the SES.
- Randomly allocate households within the same income ranks of the HWS to have new rankings. This step is to make household with the same income ranks redistribute at random, and it is useful especially for households with primary education and farmers.

Vertical Inequity

Inequity in health

Concentration indices to measure equity in health are reported in table 4.1. In 1986, about 6% of the population reported acute illness, the concentration index was -0.06 (regressive to income), which meant that there was inequity favouring the rich (see figure 4.1). The inequity in health measuring against acute illness was higher for 1991 because the index was -0.15[5]. If number of days ill was used instead of acute

[5] In 1991, the prevalence of self-reported acute illness was as high as 23% because it used looser definition of being ill. Then, we selected only acute illness with at least one day of absenteeism to be comparable with the 1986 HWS, which reduced the prevalence rate to only 7% of the population.

illness, inequity still favoured the rich in 1986 (-0.09), and higher in 1991 (-0.19), though number of day ill per person was less in 1991 (0.55 day in 1991 but 0.81 in 1986). The same pattern is true when inequity for disability was measured, but not for injury, because inequity for injury in 1991 favoured the poor (0.02).

Table 4.1 Prevalence rates and health concentration indices for 1986 and 1991

	Rate	1986 CI	Rate	1991 CI
Acute	0.0641	-0.0573	0.0722	-0.1504
Days ill	0.8124	-0.0876	0.5493	-0.1882
Injury	0.0138	-0.0079	0.0283	0.0193
Disability	0.0076	-0.0626	0.0190	-0.1385
Chronic (1 only)	-	-	0.2746	-0.5134
Chronic (all)	-	-	0.3552	-0.0567
Days in hosp	0.4715	0.0312	-	-

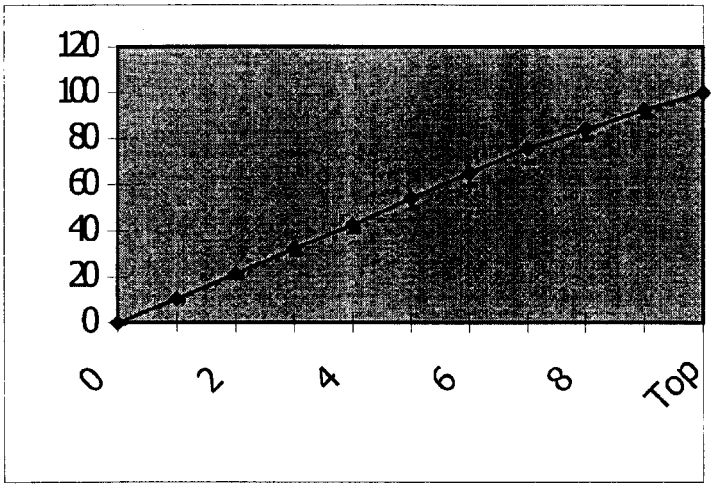


Figure 4.1 Lorenz curve for acute illness in 1986 (CI = -0.0573)

In 1991, the HWS asked questions on chronic illness and allowed an individual to report up to 3 chronic conditions. As high as 27% of the population reported at least 1 chronic condition. If we take all chronic conditions, the prevalence rate was 36%. The concentration index for one chronic condition (-0.51) favoured the rich more than the index for all chronic conditions (-0.06). This means that the rich were more likely to report more than one chronic conditions. However, if number of days admitted in the hospital was used as an indicator for health status[6], there was inequity favouring the poor. It may be explained that the rich were more likely to be admitted more, or stay in hospital longer than the poor.

[6] There was an evidence that hospitalisation was influenced by medical benefit (Pannarunothai and Mills 1997), but some may argue that patients cannot stay in the hospital longer if doctors do not agree.

Inequity in utilisation and consumption of health care

Using concentration index to estimate inequity of the use of health services in 1986, the results are reported in table 4.2. The indices for uses were almost all positive, except for the use at health centre, mobile unit, drug store and admission to public hospital. The results are plausible because the poor tended to use services from health centre, mobile unit, drug store and hospitalisation in public hospital more often than the rich. Services that favoured the rich were ambulatory care at public hospital (0.06), at private hospital (0.44), private clinic (0.35), municipal clinic (0.26), and admission to private hospital (0.27). The index for overall use of health services was 0.10 that means the overall use favoured the rich. In terms of consumption (i.e., expenses at all levels of care were summed up), the concentration index was also positive (0.08) for all consumption. That is, overall consumption favoured the rich in 1986. The index of consumption for ambulatory services favoured the rich (0.14) more than consumption for hospitalisation (0.07).

Table 4.2 Prevalence rates and concentration indices for uses in 1986

	Rate 1986	CI
Use	0.3779	0.0988
Pub hosp	0.1606	0.0621
Priv hosp	0.0168	0.4364
Clinic	0.1070	0.3542
Hlth Centre	0.0808	-0.1989
Municipal	0.0002	0.2640
Mobile	0.0106	-0.1738
Drug	0.3709	-0.0737
Hosp	0.0470	0.0182
Pub	0.0412	-0.0168
Priv	0.0059	0.2688
Exp	360.4591	0.0822
Ambu (EXP)	91.0520	0.1382
Hosp (EXP)	252.7179	0.0724

Calculating concentration index for 1991 was problematic because of the changes of questionnaires as described above. Table 4.3 shows detailed concentration indices for the uses at different levels of health care for the first and second episodes of diseases within the last two weeks and for the first and second uses of each episode. It is acceptable that all levels of health care favoured the poor (with negative signs), except private sectors (clinic and hospital) favoured the rich (positive signs).

Table 4.3 Prevalence rates and concentration indices for uses in 1991

	Prev 1st use, D1		Prev last use, D1		Prev 1st use, D2		Prev last use, D2	
All	0.1925	-0.0845	0.2128	-0.0811	0.0248	-0.1267	0.0273	-0.1244
Herb	0.0040	-0.1595	0.0049	-0.1920	0.0006	-0.0829	0.0007	-0.2601
Healer	0.0019	-0.2235	0.0024	-0.1943	0.0004	-0.1488	0.0004	-0.3014
VHV	0.0016	-0.3314	0.0017	-0.3223	0.0002	-0.2795	0.0002	-0.3015
Drug	0.0872	-0.1143	0.0876	-0.1013	0.0106	-0.1687	0.0110	-0.1784
Hlth Centre	0.0246	-0.3394	0.0283	-0.3486	0.0028	-0.3236	0.0030	-0.3126
Pub hosp	0.0341	-0.0521	0.0408	-0.0652	0.0049	-0.0449	0.0057	-0.0286
Priv sector	0.0349	0.1490	0.0422	0.1417	0.0040	0.0292	0.0049	0.0284
Others	0.0037	0.0469	0.0045	0.0265	0.0008	-0.0835	0.0009	-0.0513

Note: Prev = prevalence, D1 = disease 1, D2 = disease 2, VHV = village health volunteer

In terms of consumption, concentration index for consumption at ambulatory care, taking into account all three reported illness episodes, was -0.46, and favoured the poor (see table 4.4. If taking into account only the use of services for the first illness, the index was -0.45, and increased to -0.52 for the second disease, and -0.53 for the third. Increasing the cost of services for private sector (twice the previous cost as a sensitivity test) did not change much of the index (from -0.46 to -0.42). However, if hospitalisation was included in the analysis, by adding hospitalisation experience estimated from logistic regression to each individual (see the logistic model in chapter 3), the concentration index for consumption was much reduced to -0.16, still favoured the poor.

Table 4.4 Prevalence rates and concentration indices for consumption in 1991

	Prevalence	CI
Exp for ambu	42.7300	-0.4617
Exp Ist disease	37.1100	-0.4523
Exp 2nd disease	4.7400	-0.5231
Exp 3rd disease	0.8800	-0.5268
Exp Increase priv	55.0400	-0.4175
Exp for all incl. hosp.	579.6400	-0.1572

Note: Exp = consumption

Horizontal inequity by Le Grand approach

Horizontal equity indices by Le Grand approach are presented in table 4.5. The indices were all positive for 1986, but almost all negative for 1991 (except number of days ill and chronic illness). The indices were calculated by subtracting concentration index for consumption, C_{exp}, with the concentration index of health, C_{ill} (see dominance curves in figure 4.2 to highlight the areas above and under the diagonal lines for illness and health care consumption). Horizontal equity in 1986 show that inequity of health care consumption after accounting for ill-health favoured the rich. In 1991, the HI favoured the rich when accounting for number of days ill (0.03) and chronic condition (0.35); and favoured the poor for acute illness (-0.01), injury (-0.17), disability (-0.02) and all chronic conditions (-0.10).

Table 4.5 Horizontal equity index by Le Grand approach for 1986 and 1991

	1986 CI	1986 HI	1991 CI	1991 HI
Consumption	0.0822	-	-0.1572	-
Acute	-0.0573	0.1396	-0.1504	-0.0068
Day ill	-0.0876	0.1698	-0.1882	0.0310
Injury	-0.0079	0.0902	0.0193	-0.1765
Disability	-0.0626	0.1449	-0.1385	-0.0187
Chronic (1 only)	-		-0.5134	0.3562
Chronic (all)	-		-0.0567	-0.1005
Days in hosp	0.0312	0.0510	-	

Horizontal equity indices by Le Grand approach increased for 1986. It means that after accounting for ill-health, the consumption for health became more inequitably favoured the rich. The indices for 1991 show the opposite directions. There are two possible explanations: whether the health system has changed to favour the poor, or the estimation of CI for consumption was not reliable.

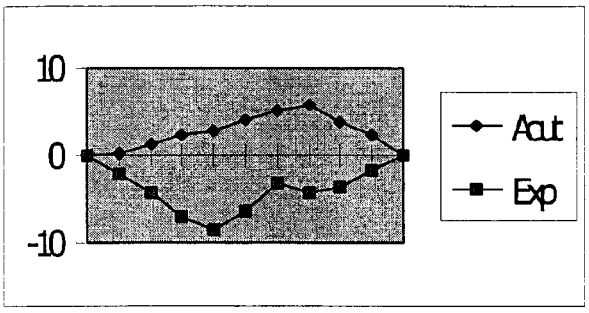


Figure 4.2 Dominance curve for horizontal inequity index by Le Grand approach (CI for Acute = -0.0573, CI for exp = 0.0822)

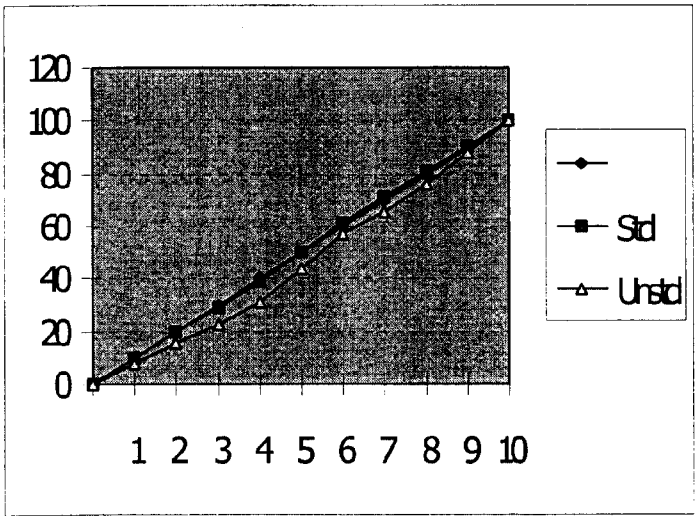
Horizontal inequity by standardisation of morbidity and delivery

Direct standardisation on health status, use and consumption made a lot of changes to the unstandardised concentration index. Standardisation is to remove confounding effects of age and sex on the index. The trends of 1986 observed from table 4.6 were as follows: inequity in health status favouring the rich was reduced, inequity of uses and consumption favouring the rich changed to favouring the poor. In terms of health status, it is confirmed that inequity favouring the rich existed. In terms of use by number of days in hospital, standardisation changed our perception that hospital care favouring the rich to favouring the poor. For overall use of health service, the standardised index was approaching zero (-0.00009), that means equity of use was almost there. However, in terms of consumption, the standardised index changed the perception to the same direction as number of days in hospital (see figures 4.3 and 4.4).

Table 4.6 Unstandardised and standardised concentration indices for 1986

	1986 CI	Standardised
Acute	-0.0573	-0.0069
Day ill	-0.0876	-0.0052
Days in hosp	0.0312	-0.0035
Use	0.0988	-0.0001
Exp	0.0822	-0.0027

Figure 4.3 Lorenz curves for standardised and unstandardised health consumption



Direct standardisation for 1991 data is presented in table 4.7. Inequity favouring the rich was confirmed by standardisation for acute illness, number of days ill, chronic condition and consumption. Standardisation changed our perception for inequity of use which looked favouring the poor to favouring the rich (but not a high magnitude, 0.0004). Furthermore, having health benefit coverage, of which before standardisation favoured the rich, but after standardisation favoured the poor. This proved that standardisation to some extent was reliable, because a larger proportion of health benefit was for the low income.

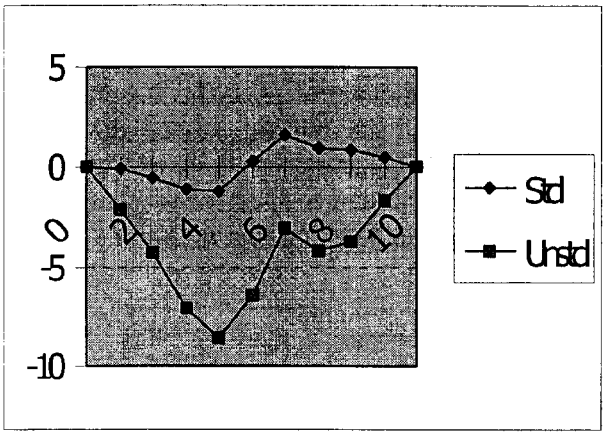


Figure 4.4 Dominance curve for standardised and unstandardised concentration index of health care consumption

Table 4.7 Unstandardised and standardised concentration indices for 1991

	CI	Standardised
Acute	-0.1504	-0.0148
Day ill	-0.1882	-0.0605
Chronic (1)	-0.5134	-0.0109
Use	-0.0811	0.0004
Exp	-0.4617	-0.0020
Exp incl. Hosp.	-0.1572	-0.0260
Hlth Benefit	0.0762	-0.0036

Inequity and geography

Rural-urban inequity

One of the purpose of analysing inequity is to find the way of correcting it. This section presents the concentration indices for the rural and urban areas. Table 4.8 shows that ill-health by acute illness was favouring the rich in urban and semi-urban areas, but not in rural area. The consumption of all health services favoured the poor in urban and semi-urban areas, but not in rural area. When taking account of acute

illness, the concentration indices for consumption by Le Grand approach favoured the rich in all three areas. The poor in the urban area were affected the least (HI 0.02).

Table 4.8 Concentration indices by urban and rural areas in 1986

	Urban		**Semi-urban**		**Rural**	
	Exp	**Acute**	**Exp**	**Acute**	**Exp**	**Acute**
CI	-0.0279	-0.0517	0.0716	-0.0296	0.1013	0.0359
HI	-	0.0238	-	0.1012	-	0.0654

Hospitalisation seems to play a major role in calculating total consumption. Table 4.9 shows the concentration indices for hospitalisation, in public and private hospitals by area. It can be concluded that hospital services only favoured the poor in urban area, especially the public hospital (CI -0.08).

Table 4.9 Concentration indices for hospitalisation by area

	Urban	Semi-urban	Rural
Hospitalisation	-0.0475	0.0220	0.0667
Public hospital	-0.0844	0.0134	0.0689
Private hospital	0.0780	0.1108	0.0296

Regional inequity

When we target for analysing inequity by region, the results are presented in table 4.10. The poor in all regions were disproportionately reported acute illness more than the rich. Health services in nearly all regions favours the rich, except for Bangkok, that favoured the poor (-0.02). Public hospitals in all regions also favoured the rich, except Bangkok, that favoured the poor (-0.09). Private hospitals in all regions favoured the rich.

Table 4.10 Concentration indices by region for 1986

Region	**Acute**	**Exp**	**Hosp**	**Pub hosp**	**Priv hosp**
North	-0.0236	0.0808	0.0381	0.0177	0.2194
Northeast	-0.0031	0.1267	0.0682	0.0622	0.2196
South	-0.0027	0.0654	0.0476	0.0195	0.2393
Central	-0.0241	0.0493	0.0126	0.0033	0.1749
Bangkok	-0.0776	-0.0225	-0.0452	-0.0858	0.0381

Gender and inequity

Table 4.11 compares concentration indices for male and female health status, use and consumption. The patterns are not different between male and female, except the indices for hospitalisation. Because the use of public hospital amongst male favoured the poor more than amongst female. The hospitalisation then favoured the poor in male, but favoured the rich in female. Whether this difference related to maternity is a question to explore further.

Table 4.11 Concentration indices by sex in 1986

Sex	Acute	Exp	Hosp	Pub hosp	Priv hosp
Male	-0.0526	0.0793	-0.0053	-0.0432	0.2624
Female	-0.0613	0.0840	0.0324	-0.0013	0.2703

4. Discussion and policy implications

Discussion

The ranking of socio-economic variables to place households from the HWS into deciles was possible, but many arguments arise. A large proportion of households (more than one quarter of total) were grouped as farmers with primary education by their household heads, these households would have the same income level which certainly were not true if income was asked. Furthermore, the group was too large to be put into one decile group, households were then randomised to get random rank and were put into subsequent deciles. Again this step faced with repeatability that the same households would not be placed in the same decile.

The concentration indices to measure equity of health delivery met the criteria that they reflect experiences of the entire population by socio-economic group. If the indices were sensitive to changes in the distribution of population by income group, the indices calculated here may not be reliable because the ranking of households into decile was doubtful as discussed above. Furthermore, in this study, we have not calculated 95% confidence intervals of the indices as shown in van Doorslaer and Wagstaff (1997), otherwise, we would be more confident about the indices.

Recent papers by van Doorslaer and Wagstaff (1997), and van Doorslaer et al (1997) present confidence intervals for concentration indices. It has been made possible because Kakwani et al (1997) computed variances from the complicated algebraic formulae. This method should be explored in further studies on equity.

Recent methods in standardisation of the indices as well as the analysis for vertical and horizontal equity (van Doorslaer and Wagstaff 1997 and Wagstaff and van Doorslaer 1998) will bring benefit to the study of equity in Thailand. Developing these skills will not put more burden to the national economy. On the contrary, if we can identify equity problems and can target for remedying them (as the part of geographical inequity), that will bring the country to the balanced social and economic development.

Consistency of questionnaires used in the surveys is also important when we want to compare the trends of changes. In 1991, many questions were introduced to reflect better pictures of illness and health utilisation. If only one condition was taken into consideration, the concentration index favoured the rich, but if all three conditions were taken into account, the index became less favoured the rich. This raises the questions rather than giving an answer to which analysis we should rely on.

Due to incompatibility of adjusting health status with the health care consumption in this study, because the questions asked in Thai surveys never reached the summative evaluation of respondents. There should be further research on the usefulness of asking 'self-assessed health' as practised in other countries (van Doorslaer et al 1993, Wagstaff and van Doorslaer 1998), whether it can reflect overall health status in the

past year in Thai context. If it is useful, this can be used as an indicator to monitor equity in health status in the future.

Policy implications

The problem of placing households into different economic ranking can be solved by asking some questions on household income in the HWS. If the concentration index to measure equity in health is convincing, the NSO responsible for the HWS and SES have to re-think for more effective way of making the two surveys more useful from the step of data collection, or just improving the HWS per se.

Potential uses of the concentration indices are more receptive to the Ministry of Public Health and the Budget Bureau. Health facilities in Bangkok, especially the public, provided equitable access to the poor in 1986, while public health facilities in the urban area did the same to the poor. The poor in rural area were the least advantaged. If this situation still exist, the country need a systematic planning and monitoring with this kind of indicator.

Conclusion

This research aims to explore feasibility of using data from the national household surveys on health and socioeconomic activities to calculate indices measuring equity of health care delivery. It has been proved that concentration indices for health status and utilisation, the unstandardised and standardised indices, could be used to measure the national health care objectives of ensuring equal utilisation for equal need.

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Annex

Representativeness of the samples

Table Education level of household head, HWS and SES 1986 surveys

HWS code	SES code	HWS	SES	% HWS	% SES
01	01	2,239	1,337	13.22	12.36
02	11	1,002	711	5.92	6.57
03	14	9,808	6,027	57.92	55.73
04	15	747	706	4.41	6.53
05	20	1,127	789	6.66	7.30
06	24	323	172	1.91	1.59
07	40	2	4	0.01	0.04
08	50	429	405	2.53	3.75
09	31	400	414	2.36	3.83
10	38	166	24	0.98	0.22
11	61	422	136	2.49	1.26
13	90	115	56	0.68	0.52
14	99	154	33	0.91	0.31
		16,934	10,814	100.00	100.00

Table Occupational group of household head, HWS and SES 1986 surveys

HWS code	HWS	SES	%HWS	%SES
0	679	480	4.01	4.44
1	704	144	4.15	1.33
2	507	271	2.99	2.51
3	1,943	1,181	11.46	10.92
4	6,374	4,417	37.60	40.85
5	24	18	0.14	0.17
6	763	42	4.50	0.39
7	1,272	1,763	7.50	16.30
8	721	33	4.25	0.31
9	3,963	2,465	23.38	22.79

	16,950	10,814	100.00	100.00

Table Education level of household head, HWS 1991 and SES 1992 surveys

HWS code	HWS	SES	% HWS	% SES
0	2,359	1,250	9.95	9.29
14	13,892	7,509	58.62	55.82
17	1,719	1,298	7.25	9.65
2	2,560	1,556	10.80	11.57
3	1,000	927	4.22	6.89
4-5	684	446	2.89	3.32
6	412	-	1.74	-
7-9	780	436	3.29	3.24
X	293	29	1.24	0.22
	23,699	13,451	100	100

Table Occupational group of household head, HWS 1991 and SES 1992 surveys

HWS code	HWS	SES	% HWS	% SES
0	1,234	735	5.21	5.51
1	1,098	238	4.63	1.78
2	873	197	3.68	1.48
3	2,627	1,527	11.09	11.44
4	8,017	4,391	33.83	32.91
5	17	12	0.07	0.09
6	1,237	1,032	5.22	7.73
7	2,145	1,414	9.05	10.60
8	1,090	490	4.60	3.67
9	1,197	487	5.05	3.65
X	4,160	2,816	17.56	21.10
	23,695	13,339	100	100

Annex 7

Proposal for the Development of a National Mechanism for Health Care Technology Assessment in Thailand.

ANNEX 7

Consultancy on health care technology assessment
within the HSRI/TASSIT-collaborative project

Egon Jonsson
October 1997

PROPOSAL

FOR THE DEVELOPMENT OF A NATIONAL MECHANISM FOR HEALTH CARE TECHNOLOGY ASSESSMENT IN THAILAND

Table of contents

1 INTRODUCTION

Current concerns

The health care system of Thailand is in a process of change. Some of the major concerns in current health policy making seems to be the following:

-health care financing and issues of reimbursement
-the increasing fraction of privately delivered health services,
-increasing costs of health care,
-effectiveness and efficiency in the delivery of health care,
-quality of care,
-accessibility and trust.

In addition to these there are serious concerns also about:

-the rapid introduction, diffusion and use of sophisticated, and particularly expensive although effective, medical technology throughout the country.

This has been approached by several means; increased attention in general to the matter, investment in health services research, the development of a system of hospital accreditation, the development of guidelines and other systems of quality assurance, and to the development of a national mechanism for technology assessment in health care.

Health care technology is an undismissible part of any nations health care system. During the last decades Thailand has increased its technological base for health care substantially by investments in knowledge transfer and the importation of equipment, devices and pharmaceuticals. This process has basically gone well, however, there are several emerging problems related to the acquisition, diffusion and use of modern medical technology, as well as concerns about the effectiveness and efficiency of established procedures in health care.

Some of these matters will briefly be dealt with here, namely;

the fact that an increasing amount of difficult choices will appear, as more medical technologies become available in Thailand. This will call for priorities to be made, which in turn will require information about not only safety and efficacy but also about effectiveness and costs of different technological options in health care,

the questions of appropriate diffusion of technology throughout the country, which is related both to the needs of the population, and to the availability of financial and other resources and to alternative options,

the rapidly increasing volume of new knowledge produced primarily in applied clinical research, but also in health services research, in health economics and in the field of technology assessment with implications not only for clinical decision making and medical practices but increasingly so also for policy making in health care,

the importance of assessing both new and established technologies for health care.

Increasing choices - need of priorities

As Thailand invests more in medical technology it is obvious that more choices will be presented. The pressure of making choices will come from the outside by the multinational industry in medical care, and from the inside by pressures from medical specialists, from the media, and from the informed general public and patients.

In the long run, it does not seem possible for any country to balance the rapidly increasing technological possibilities for medical care and public and professional demand against resources available for health care. Therefore choices will undoubtedly become increasingly difficult, and as much information as possible about the relative value of investing in different technological options will be needed.

Appropriate diffusion of health care technology

When considering the placement of any high technology service in the public sector, the ministry of public health in Thailand makes use of a fairly elaborated process of discussions and negotiations, taking place at the local, regional, interregional and national level. There is no department or institution in the country which regularly could support this decision making process by data and facts about recent findings from clinical research, and the relative cost-effectiveness of proposed investments. However, common sense is used along with considerations of the needs of the population, the distribution of already existing technology, and judgements of the overall implications of specific investments are made from a societal point of view.

It is not known whether such considerations are prevalent in the private sector, however, it seems obvious that there is little or no coordination of investments in medical technology within this sector. In the long run this may well have damaging consequences for both public and private health care.

Competition for patients tempts the private sector to aquire high technology to enhance an institutions image, resulting in an oversupply of services, sometimes far beyond the true population needs. This maldistribution of technology is questionable from many points of view.

Since modern medical technology theoretically may be accompanied with a broad range of indications for its use, and since an investment must pay back, it becomes tempting to expand its medical indications for use, sometimes beyond any benefit to the patient. This phenomenon is quite visible in Thailand, for example in the frequent advertising directed towards potential patients, including offers of tests by the use of sophisticated technology, which carry no scientific evidence of good to the people these advertisements are directed at.

Another example is that the capital of Thailand reportedly is equipped with more CT-scanners than the number available in the whole country of U.K. Further, overinvestment means lower volume per service which for many clinical procedures, particularly in surgery, is associated with poor outcomes for the patients. The public needs to be protected from the inferior quality of care produced by overinvestments in medical technology. At the end, all overinvestments and maldistribution of technology are paid for by the population at large, and no country can in the long run afford to pay for escalating overinvestment in medical technology.

Increasing volume of clinical studies and assessments

In all countries the medical profession by tradition have been left free to select technologies for the diagnosing and treatment of their patients. This has often worked satisfactory, largerly due to a general sense of strong responsibility among the medical profession, indepth training and specialised skill, performed in an environment of strong social control, overseen by peers.

Nevertheless, the rapid growth of medical technology, and the increasing volume of new knowledge from basic and applied clinical research have made it virtually impossible for even specialists to keep up with the development in medicine. Many inappropriate

3 PRESENT CONCERNS ABOUT HEALTH TECHNOLOGY ASSESSMENT IN THAILAND

Summary of views expressed in meetings

During the cource of this consultancy, meetings took place with about 20 people representing different organisations and institutions. (See appendix 1). The following gives a brief description of views raised in general and on HTA in particular. It must be noted that this does not necessarily reflect respective institutions' or organisations' standpoints on the matter, but rather a blend of views expressed by the individuals interviewed.

NESDB

At the macro-economic level there are several major concerns for the country, including issues on: economic stability and attention to the balance in between the money sector and the productive part of the economy; the need to increase productivity and export and pay more attention to income distribution and thereby increase the capacity of the country; the need to reduce capital investment and focus on investment in human capital; the need to define the role of the government; the need of getting more of skilled people in the public sector; and finally the need of using existing resources within the public sector more effective.

It is foreseen by NESDB that technology assessment in health care will play a role in the process of reform by realizing pieces of its aim, particularly in the efforts to make use of existing resources more effectively, but also by broaden the competence in the public sector.

MOPH

The ministry strongly agrees on the need to do comprehensive HTA at the national level and particularly emphasized the need to create networking and a strong reputation of such an activity, which could be privately or semiprivately organized. It was stressed that a national mechanism must be unbiased, and serve the public and the society. It should also actively push for the government's policies in health care. The Medical Council composes a strong board with certain mandates touching on the issues of HTA, however, it was thought that a national HTA mechanism would need its own Board for its particular purposes.

2 HEALTH TECHNOLOGY ASSESSEMENT (HTA)

Definitions and scope

Technology means: the application of findings from research.

Health care technology is usually defined as vaccines, pharmaceuticals, equipment and devices, medical and surgical procedures as well as measures for prevention and rehabilitation of disease.

This broad definition does not mean that health care technology is everything. It is simply used to define the scope of *assessment* of health care technology.* Its scope should cover all health technology in Thailand, including both the public and the private sector.

Technology assessment in health care is a multidisciplinary field of policy analysis. It studies the medical, social, ethical, and economic implications of the development, diffusion and use of health technology. The process of technology assessment briefly includes 1) identification of technologies in need of assessment, 2) critical and systematic reviews of clinical and economic research on the subject, 3) primary studies of missing facts (usually information on cost-effectiveness), 4) synthesis of the information available, and 5) diffusion of the results. Thus, HTA is not directly aimed at, or directly involved in, aspects of regulation or decisions about financing or payment, however, it exists to assist decision makers in such areas.

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*Since this is often a source of confusion a simplified example may serve as an illustration for the need of a broad definition and at the same time make clear the difference between technology and technology assessment. An assessment of a device, for example for mammography, may be done by establishing its safety and efficacy, i.e. that the device actually is performing what it is supposed to do, namely to produce images of the breast. This is usually the responsibility of FDA. However, such an assessment does not tell anything about the value of performing mammography. In aiming at this, the assessment must proceed and include information about sensitivity and specificity, which in turn require epidemiological information about the prevalence and incidence of breast cancer. Further the assessment must include information about the outcome of different interventions, which means that the assessment must include analysis of clinical research performed in the field. In order to tell anything about the relative value of mammography vs other means of detecting breast cancer disease, cost-effectiveness analysis of alternative options have to be performed. Finally, the value of mammography is dependent on its indications for use, whether for clinical use or for screening, for different age groups, for different intervals, number of views per breast etc. In turn this means that skill in epidemiology, health economics and other disciplines needs to be brought in and thereby are also policy issues of approriate diffusion of the technology on the agenda. The concept of technology *assessment* in health care therefore needs a broad definition of technology.

practices have crept into health care and ineffective and obsolete practices may continue despite overwhelming evidence that these should be dropped.

Some examples of poor investments are found in Thailand as in other countries. Thus, a number of procedures, devices and equipment of no evidence of benefit to the patient are reportedly in wide use, for example in the treatment of patients with back pain by invalid physiotherapeutic and orthopaedic practices. Routine chest x-ray, electrolyte tests, and electrocardiograms are done routinely before surgery, in spite of available scientific evidence of no benefit at all for neither the surgeon nor the overwhelming majority of patients in elective surgery. Screening for prostate cancer has been scientifically shown to produce more harm than good for the patients. Ultrasound examinations lacks indication in elective toncillectomy. Annual health check ups by the use of CT-scanning is not only inappropriate but unethical in view of the potential amount of false positive findings, and its concomitant medical or surgical inverventions.

Assessment of both new and established technologies

Many innovations in medicine transform into applicable medical technology, of potential great benefits to the patients. Although the new technology could prove to be both more effective and cost-effective in comparison with established practices there may be obstacles for it to get a place in the practice of medicine, particularly if it carries high and clearly visible investment costs.

At the same time there are many established medical technologies which have never been assessed in terms of effectiveness and cost-effectiveness, and which are in a sense blocking the market for new innovations. Some estimates show that as much as 70 to 80 percent of the procedures used in health care have never been evaluated for their relative cost-effectiveness. There are also many, so called small ticket technologies in use in medicine, which do not require high costs of investment, such as new pharmaceuticals for the treatment of mild hypertension, but which are so frequently used that their added yearly costs would cause serious concern among policy makers, if they only were visible. Another concern in this respect is the common tradition in medicine of practicing new technology along with the old, although the latter was supposed to be replaced by the new. Therefore, also established technologies need to be assessed and, if proven to be less effective, should be replaced.

The overall objective of HTA is value for money, i.e. to make best use of available resources for health care. It is doing so by providing unbiased, scientifically based information about the medical, social, ethical and economic implications of specific technologies for health care.

National strategies for HTA

Formal HTA has a history of about 20 years. It is now both an established field of research and a field of assistance to health policy making in about 35 different countries around the world.

The majority of these countries have established governmentally funded agencies, with no regulatory functions, but with the mandate to produce scientific evidence of medical technology and its implications for health and quality of life of the public, including analysis of appropriate diffusion and use of technology as well as economic analysis of different policy options in health care.

At the operational level there are quite a variety of solutions between these countries, particularly in the methodology of synthesizing the evidence and in the dissemination of its findings. It seems quite obvious that the interpretation of evidence needs to be made in the light of cultural, geographical and other circumstances related to each individual country, or for that matter, related to each region of a particular country.

The bulk of the work in HTA is a systematic and critical review of the international scientific literature. This part of the work is usually done either in-house by the agency or by commissioned research performed by individual groups at other institutions, by universitites, consulting agencies etc. A minority of the established governmental agencies in the field do not do systematic reviews but use the technique of consensus conferences among experts to reach conclusions about certain technologies.

The diffusion of the results takes many forms. All agencies are publishing reports, press releases, and arrange conferences. Some develop specific means of dissemination by making use of the research community, the existing network of hospital and health centers in the country, and by appointing special agents or ambassadors throughout the country, who inform about the findings in very much the same way as the pharmaceutical industry have been successful in doing about their products.

The ministry felt there are many reasons for HTA in Thailand. In particular because of the fact that the country imports a lot of expensive technology, and because there are overinvestments in some technology.

The ministry has been using some means to control technology. Mainly by redrafting obsolete health laws, and by the use of opinions based on expert groups. Presently these activities include an effort to develop a system for accreditation of hospitals, and to introduce the DRG system. Reconsidering health care financing is likely to come in the future, as well as defined catchment areas for hospitals, which both may be reforms useful to implement the results of HTA.

A national mechanism for HTA would need an operational unit and it was thought it should include a small staff and attract the brightest and the best, who would connect with researchers from various fields. It should produce information also of technical value for the medical profession, which will increase from about 20,000 to 25,000 doctors by the turn of the century.

As to financing, the ministry does not believe that neither the medical profession nor the hospitals would be willing to pay for the kind of information that HTA-studies would produce. Instead it was elaborated that a national mechanism could be created by some fund, partly financed by the government, since it would seem possible for the government to support a non-profit organization dealing with HTA.

A good starting point would be to bring in the Royal Colleges into this activity, and to pay attention to implementation from the very beginning. For this also the medical schools must be an important target group. HTA must also be strongly linked to policy decision making. It was especially pointed out that it would be important to arrange meetings and discuss HTA also with representatives of the private sector, for example through the existing networks of the private hospitals.

The ministry maintained that HTA should become part of the curriculum of the medical schools in the future. Some aspects of HTA are already now available for medical students, and by special postgraduate training cources, including teaching in the methodology of evaluation, health economics and cost-effectiveness analysis etc.

The health care system currently has its own way of rationalizing technology. About 20 percent of all technological investments are done directly by the hospitals from their own budgets, built up by their own revenues and contributions from the government. The remaining fraction of 80 percent is referred to the Ministry as requests. The decision making process is elaborate and complicated but usually begins at the local or regional level by having the parties involved to negotiate and agree on technological investments of joint interest for several areas of the country, for example investments in high technology, dialysis centres, burn care, organ transplantation, trauma care and ambulances, etc. Further discussions, negotiations and priorities take place at the Ministry including the parties involved.

FDA

FDA believes there is a clear need to assess also other technology than pharmaceuticals, particularly from a cost effectiveness point of view. The main problem foreseen for this, however, is the skilled people needed which the country presently does not possess. Until further it was suggested that the country could deal with HTA by establishing some kind of a national committee, make use of experience from other countries, and provide training on how to assess for those who will be engaged in this activity.

FDA lacks the expertize needed to deal with the broader issues of HTA. The mandate and performance of FDA is not oriented towards questions of effectiveness, and toward issues of the clinical, ethical, social, and economic implications of medical technology but concentrated on specific technical aspects of medical products -the premarketing control of pharmaceuticals and devices. The methodology in assessing equipment and devices follows very much the model of pharmaceutical control, i.e. product safety, efficacy, and guality. FDA would welcome results from HTA-studies as a valuable contribution to its own basis for decision making, and in evaluations of both pharmaceuticals and medical devices.

University

The academic community is well aware of the importance of HTA and its potential long-run implications for medical practices and improved health services.

The present discussions on how to deal with HTA in Thailand at a practical level focus much, maybe too much, on quality of care, the development of practice guidelines and accreditation of hospitals.

One aspect of HTA is to create networking, and specifically to get the medical profession involved. The colleges of physicians are not only important but could actually also serve as a resource for the work to be done, not the least in disseminating the findings from HTA studies. By such a deliberate search for cooperation the profession will become not only interested in the matter but also fully realize the need for HTA. Furthermore, the medical societies can be used for the development of guidelines.

Another aspect on HTA is the methodological skill needed for this, i.e. the critical review of the scientific litterature, as well as the need to follow the development of the methodologies in the field. Anecdotal studies were accepted not too long ago, but methodology has improved and now this type of studies are not longer acceptable. Todays requirements of RCT´s may not be the ultimate but a development of the methodologies will take place as the information technology improves. The introduction of meta-analysis is a sign of this.

A third aspect on HTA is its broad definition. If it is going to include everything, from clinical research to organisational and managerial aspects of health care, it may be too much to undertake. Its scope needs to be defined to solid technologies, although it is realized that assessments necessarily will touch also on some of the softer aspects of medical technology.

A fourth aspect is the approach or the character of HTA in practice. Will it be sort of regulative and negative or come in as a friend trying to help? After all, the basic thinking in medicine is to do good for the patient. If one does not know how to do this HTA must be seen as something that can assist and help, not as something that is an obstacle.

A fifth aspect of HTA is the education of the public and the profession. Neither are entirely mature or trained for this new view, of assessing medical technology from a broad and societal perspective, although this can be shifted rather quickly. Once again it is important that this is handled carefully and positively. One aspect of the Thai culture to have in mind, is that people do not like to criticize other.

Finally, HTA must be done by some autonomous body with the authority of the state. It may be set up as a program, mainly on function rather than structure.

For a national mechanism to function effectively it was emphasized that this would need to be run by trusted people. Further there would be a need of a specially trained core group which would have strong links to the development in research methodology. The program could partly be supported from research funds. It would be of great value to have at least one demonstration project performed rather quickly to illustrate the importance of a national mechanism for HTA in Thailand.

CHE

The center for Health Economics could contribute much in economic analysis of the implications of both diffusion and use of medical technology, as well in analysis of reimbursement issues related to the use of technology. CHE believes that health technology assessment is very much needed in Thailand, in particular the concomitant cost-effectiveness analysis of technology.

CHE also pointed at the need to pay attention to training and skill in health economics, since it was envisioned that in the future every hospital would like to build up some capacity to interpret the findings of HTA and adapt these to local circumstances, to the need of the population, to locally available resources and other technological options.

TDRI

TDRI emphasized that technology assessment in health care must be viewed from a very broad perspective, and that many organisations and institutions, with overlapping functions, are or will somehow become involved in this. TDRI further believes that there essentially is no problem with overlapping, rather this should be viewed positively as a source for competition.

A lot must be rethinked, however, when HTA is coming up on the agenda. It's not only about health care in the past but also about its future. An important question in this respect will be how to create networking between existing organizations. It was pointed out that HTA will be a time-consuming activity, requiring sustainable resources, to change a professional culture. Skilled people who can deal with and interpret the information will be needed for this which was deemed not possible without further training of Thai people in this specific field. The skill could preferably be developed in collaboration with some internationally well recognized organization on HTA.

HTA was also seen as a potential contribution in solving a small piece of a much bigger problem, namely to reform the public organizations of Thailand, which, among other things would require new incentives to attract qualified people to the public sector.

It was further thought that the private sector must be brought into this activity, not only for their own interest but also for making clear what might be at stake when findings from HTA-studies will touch on the use of the legal framework available.

TDRI tentatively recommends that a program be established, that a board is appointed, and that several committees for different purposes are identified. Further, that this national mechanism is given independence and first of all demonstrate its value.

TDRI believes it could and would like to play a role in a national HTA-system by carrying out macro-economic and health policy research, particularly in identifying policy options for decision makers. However, presently the institute has very limited experience of projects in health care. Currently there is only one ongoing study in health care -on the technical aspects of a paging system.

HSRI

Staff members of HSRI believe strongly in the need of HTA and its importance for improved health services. There is a feeling that many people will be involved in this in the future and that HTA eventually will permeate the whole of the health care system. It is also realized that as many people as possible should be encouraged to work on this.

A common response on HTA in Thailand is that the department of medical devices at FDA take care of this. However, they are dealing only with safety and efficacy, and are neither monitoring the effective use of drugs, nor the effectiveness of equipment or devices. Their mandade and skill is in the premarketing control of safety and efficacy.

HSRI also thought initially that Thailand could approach HTA like ECRI in the U.S. is doing, namely to produce information about equipment, however, soon realized this is not enough. Needed are also analyses of effectiveness and cost-effectiveness, of diffusion and appropriate use etc., and that quite some effort must go into dissemination of information, with the ultimate objective of implementation and changing of practice.

There is currently no centralised information system on health care in Thailand. For example, data on incidence and prevalence of diseases, and data on existent technology are not at all readily available. Several institutions and departments within the ministry gather different types of data, as does the private sector, however, these are not easily accessible. This is seen as an obstacle to efficient HTA, however, a national mechanism for HTA could actually improve the situation, since it is in all parties interest to collaborate and consequently to make data accessible for all.

It is well recognized that HTA could contribute to the development of guidelines, however, this is viewed as a specific and separate activity which in the long run should be carried out by those who are most concerned about clinical decision making and its technical details and who also have the skill for elaborating on it, namely the Royal Colleges of the medical profession.

HSRI believes that an independent organization, funded by the government, would be needed for a national mechanism on HTA and that the private sector must be, and would be interested in participating in this activity. Further, a national mechanism for HTA should not be regulatory but rather it should monitor technology. There are several examples of studies in the past which illustrate that this may work well in Thailand. HTA in Thailand would need to be linked with policy makers and the research community. The mechanism for accreditation of hospitals will be one of the many important users of the information that HTA will produce.

HSRI's own mandade include certain features of HTA, however, not specifically focused on this. Although the technology assessment program of HSRI formally began quite recently some ad hoc activities of HTA were in place already a few years ago. HSRI then asked for bids on projects about Thalassemia, Coronary Heart Disease and Hormone Replacement Therapy after Menopause.

The present HTA program of HSRI is divided into the following four components:

1) The establishing of an information center and international linkages in HTA.
2) Assessment of priorities, establishment of a mechanism for hospital accreditation, and a national mechanism for HTA.
3) The development of evidence based medicine and clinical guidelines.
4) The rational use of drugs.

The program includes a technical committee, composed of about 20 people, which meets once every month. This committee discusses issues on all components of the HTA program.

It is estimated that there are an equivalent of one or possibly two people full-time working on the HTA program, plus the equivalent of one full time administrative support, incl dissemination of reports etc which is done from the office. HSRI is in the process of hiring coordinators for each of the four components of the HTA program.

Recently HSRI made new announcements and asked for bids on literature reviews of Chronic Diseases and Acute Infections. HSRI has just received about 15 proposals but has not yet made decisions on these. It is required by the HSRI that the proposals specify the magnitude of the problem/the burden of disease and its economic implications, who would benefit from the review, who will be responsible for it, and that it provides an outline of the report including a section of recommendations of what should be done. This is very similar to how some agencies for HTA are working in other countries. In terms of financing HSRI allocate 3-5 million Baths per year for the entire HTA program, except for projects on appropriate utilization of drugs.

HSRI does not have any report on HTA compiled yet. When these are finalized they would be published in the Thai language but HSRI has not discussed whether there should be a special series, colour, style etc of these.

HSRI has two monthly newsletters printed in about 10,000 copies each and distributed free of charge. Also it issues a quarterly scientific Journal on Health Services Research. HTA findings could be disseminated through these channels.

4 PROPOSAL FOR A NATIONAL MECHANISM ON HEALTH TECHNOLOGY ASSESSMENT IN THAILAND

Background

Presently there are many organisations, institutions and individuals interested in HTA in Thailand. In practice there are also many groups that perform studies which clearly may be deemed to be bits and pieces of HTA.

However, as described above, HTA aims at making the synthesis of evidence from a variety of research areas, in particular from applied clinical research, health economics and the field of research on social and ethical implications of technologies in health care. HTA is concerned about the application of research under defined circumstances, i.e. the need of the technology, its indications for use, its appropriate diffusion, its requirement on skill and experience, and the cultural and social environment in which it is going to be applied as well as about its demand on limited resources whether nationally or locally. Such a syntesizing body currently does not exist in Thailand.

The skill and expertize to do HTA in Thailand is very promising, as is the potential networking structure for effective diffusion of results from HTA studies. Moreover, there is a widely recognized need and support for a national mechanism of HTA with its great potential for improved health services in Thailand.

Prerequisites

The medical profession, the patients and the general public must be placed in focus of such an activity.

Health care policy making at large emerges, not in isolation, but from values and attitudes continuously created, shaped and reshaped in the interfaces and processes in between these groups. The aim of HTA to assist in health policy making should be viewed from this perspective. Thus, a first premise is that a national mechanism for HTA must be created so it eventually will be considered as an asset and valuable service function, in several respects, to both the medical profession, the patients and the public.

A further starting point is that a national mechanism for HTA must provide unbiased, valid, and useful information based on scientific evidence. This is obviously not only a question of technical skill and competence, but also a matter of reliability and trust. In order to

achieve this among the target groups mentioned, it is necessary to get very respected individuals who the target groups can identify with, rather than institutions and organisations, as representatives of the national mechanism.

Finally, this mechanism must be independent, however, it needs to have the authority of the government and should therefore be financed by the government.

A National Council

These statements suggest the establishment of a national council, committee or board for HTA, composed of individuals who in this position would not represent any organisation, institution or interest group. However, they would need to be selected from different areas of the public and private health care system, excluding the pharmaceutical and other health technology industry as having a vested interest in HTA. The aim of this National Council would be to improve the health services by providing scientific facts and conclusions about the appropriate diffusion and use of health care technology in Thailand.

The Council would not have any regulatory function but only serve all involved in health care with scientific facts about specific health technology, including conclusions and recommendations based on evidence, not opionions.

Operational functions

At the technical or operational level the National Council would have a secretariate or unit which performs HTA, including a special resource for dissemination of findings and conclusions.

For this secretariate there would be a need for a critical mass of competent researchers (from the fields of epidemiology, clinical research and health economics) specially trained in systematic reviews of the scientific literature in health care.

The aim of this operative function would be to:

-commission and assist in HTA-research, based on critical reviews of relevant scientific studies from several disciplines on specific medical technologies,

-commission and assist in primary research on the cost-effectiveness of specific medical technologies,

-carry out research on current diffusion and use of health technology in the country and provide syntheses of the results of these activities,

-interact with all project groups in the HTA process,

-provide training programs for project group members,

-provide the standing Scientific Committee and the Council with appropriate material for decision making as to conclusions and recommendations based on findings from HTA.

For effective dissemination of findings of HTA-studies the Council would need a special task force or resource within the secretariate at the operational level. The aim of this resource would be to make the results accessible at all levels of health care throughout the country. In turn this would require the creation of a national network for dissemination, the production of a range of targeted information material, based upon the scientific findings, and directed towards the target groups including the massmedia, and the organization of seminars and conferences on the themes of the findings. The national network for dissemination could mainly be built on the existing structure of professional colleges, medical schools and hospitals in the country, but also by the use of new means of marketing research results, for example by the establishment of Ambassadors of the National Council who would have as their function to make results known primarily within the medical community.

See further the organizational chart in appendix 2.

Scientific committees

The operative function will need expert assistance from a variety of disciplines in medicine which have clinical and other information helpful in pilot studies, and in the selection of priority assessments. Further, while the foundation of HTA to a large extent always will be the existing scientific literature, the findings need to be interpreted in the light of both clinical experience, and local and cultural circumstances.

Therefore an ad hoc scientific committee should be appointed for each subject of HTA. By this mechanism there will gradually be an increasing number of professionals attached to the whole program, who have experienced a comprehensive and critical review of a

specific technology. These people then also will become helpful in and part of the network needed for effective dissemination of results.

Experts are, however, by definition very close to a specific subject and may therefore be implicitly subjective in their interpretation of evidence. To cope with this potential bias, and to further increase the corps of professionals who will contribute to diffusion of results;

-a *standing scientific committee*, composed of people from different fields of health care, should be appointed as an advisory body to the operative functions and to the National Council.

Networks

HTA will assist in the development of evidence based health care, rather than opinion based medicine in Thailand.

In this process HTA will eventually permeate the health care system and grow into a movement and an attitude -of sound critical views on the diffusion and use of technology, instead of investments in and diffusion of technology in an uncontrolled fashion. This movement will exist alongside actual assessments of health technology which will take place in many settings. It is therefore important that the network of the Council will become as broad as possible.

Although much of the network will be created naturally as the Council begins its operations it seems important to get certain actors into the Council's network from the start. Either represented in the Council as individuals, and/or on the committees, and/or as stakeholders who the Council on a regular basis should inform, in particular about conclusions drawn from the results of its work.

The Ministry of Public Health, including the Food and Drug Administration, the National Economic and Social Development Bureau, and the Royal Colleges of Medicine are seemingly the most important bodies for this networking.

The research community, the medical schools, and the hospitals will be incorporated into the network at the operational level; by the commission of research, by appointments to the scientific committees, as external reviewers, and as associates or ambassadors of the Council in the dissemination processes.

Besides these, many individual decision makers, such as clinicans and hospital directors, and also many institutions and organisations would be expected to make use of the information produced by the Council and thereby become a natural part of the network.

International collaboration

HTA is increasingly becoming international just like the biomedical research community as a whole, and like the pharmaceutical and medical device industry.

For any country at the beginning of its HTA activities, like Thailand, international cooperation gives the opportunity to make use of a large amount of work already done in other countries. As has been pointed out earlier, the core of HTA is the critical review of the international literature in medicine. Although the findings of this need to be interpreted country by country, it is increasingly feasible to make use of already published assessments as the methodology in HTA is becoming more and more international as well.

The potential of international communication and cooperation was early realized by those working on HTA. Researchers in the field of HTA together with policymakers, clinicians and industrial representatives joined together about ten years ago to form The International Society for Technology Assessment in Health Care ISTAHC, which now has about 1,000 members from all over the world.

ISTAHC issues a newsletter and a peer reviewed Journal; The International Journal of Technology Assessment in Health Care, and holds annual meetings. These give an opportunity for those working in the field to keep up to date with new methodology for assessment and diffusion, new policy options, and results of studies performed in different countries.

Some of the professionals belonging to ISTAHC are working in governmental agencies more directly focused on policy making. These agencies have come together and formed a network of governmentally funded HTA programs, called INAHTA, The International Network of Agencies for Health Technology Assessment. This network encompasses about 300 people working in 25 agencies, located in15 different countries. INAHTA issues a monthly newsletter, including reports on recently published material within the Network, runs joint assessment projects, and compiles a registry of published, ongoing and planned HTA projects.

INAHTA also holds annual meetings in connection with the ISTAHC meeting. There are about 400 ongoing HTA studies within INAHTA. See appendix 3.

Another international activity important for HTA is the Cochrane Collaboration. This is a network of mainly clinical researchers all over the world, who form groups to do systematic reviews of all randomized clinical trials in specific areas of medicine. Currently there are about 150 Cochrane collaborative groups working on different topics. The Cochrane collaboration has a database and issues their findings in CD-Rom.

The European Union has funded a rather extensive collaborative project called the EURASSES project, which aimed at harmonization of the methodology in HTA; exploring mechanisms for efficient dissemination of HTA results; investigating the means of linking HTA to financing and reimbursement; and developing the process of making priorities in the process of HTA. This project is currently continuing under the name of HTA Europe and includes a series of seminars throughout Europe on different topics, like the development of early warning systems for medical technology, the future of HTA in the European health systems etc.

More information on these and other international activities in the field of HTA are now available at the Internet.

5 EVALUATION OF PERFORMANCE

The Thailand Council on Technology Assessment in Health Care will eventually be well known for its independent, and strictly scientific review of the effectiveness and efficiency in health care by its assessment of health care technology.

It is of utmost importance that such a body will be continously scrutinized as to its own performance, and that this is done by researchers independent of the Council.

Based on experience it will take about three years for the Council to achieve any measureable effect of its work, and therefore it is proposed here that an independent evaluation takes place after three years. This evaluation should focus on the operational function of the council, its productivity, the quality of the material produced, and on different target groups (in particular the community of clinicians in the country) knowledge about and attitudes towards the Council and HTA in general. The evaluation at this stage should not be too concerned about measurable effects in

terms of changes in clinical practice, since this will not appear within a period of three years.

Other types of evaluations which will give indications of performance of the Council are ongoing, yearly surveys of knowledge about the Council and its production, and ad hoc reviews of certain aspects of clinical practices for each of the projects. These ad hoc reviews need to be performed before a specific report is released, and then repeated once every year for at least three years. It need not be a complicated procedure, but focus on specific aspects of clinical practices only, in particular those that are likely to be affected by any of the conclusions the Council may arrive at.

The structure of the National Council of Health Technology Assessment in Thailand

THE NATIONAL COUNCIL
Responsible for overall policy

-makes priorities
-appoints the director
-appoints the scientific committees
-approves of results of assessments
-approves of conclusions and recommendations

THE STANDING SCIENTIFIC COMMITTEE

-gives advice to the Council and the secretariate
-reviews findings from assessment
-appoints external reviewers
-writes summaries of HTA-reports and
-approves of conclusions and recommendations
-participates in the working groups

THE SECRETARIATE
Needs a critical mass of staff

-runs the operational functions of the Council
-participates in all project groups
-finalizes reports for approval
-produces synthesis of findings from research

Dissemination	PROJECTS	International collaboration
Extramural research -systematic literature reviews -economic analysis -analysis of current diffusion and use	Project Committees -review manuscripts -compile further data as needed -finalise reports for the secretariate	External reviewers

LIST OF PEOPLE INTERVIEWED/MET WITH DURING THE TIME OF SEPTEMBER - 22,1997.

Anuwat Supachutikul, Health Systems Research Institute, HSRI.
Boonlert Kongkamee, M.P.H., Director, Medical Device Control Division, FDA, Ministry of Public Health.
Chantana Jutiteparak, Senior Expert, Food and Drug Standards, FDA, Ministry of Public Health.
Charas Suwanwela, M.D., Professor of Surgery (Neurosurgery), Chulalongkorn University.
Chitr Sitthi-Amorn, Professor, School of Public Health, Chulalongkorn University.
Kaemthong Indaratna, Ph. D., Professor, Faculty of Economics, Chulalongkorn University.
Montchai Chalaprawac, M.D., Faculty of Medicine, Chulalongkorn University.
Narintr Tima, Research Program Manager, Health Systems Research Institute, HSRI.
Nit Chantramonklasri, Ph. D., Vice President, Thailand Development Research Institute Foundation, TDRI.
Raymond C.W. Hutubessy, Associate Professional Officer, WHO, Faculty of Economics, Chulalongkorn University.
Somsak Chunharas, Director, Health Systems Research Institute, HSRI.
Supachai Kunaratanapruk, M.D., M.P.H., Assistant Permanent Secretary to the Minister of Health, Ministry of Public Health.
Suwit Wibulpolprasert, M.D. Director, Bureau of Health Policy and Planning, Ministry of Public Health.
Waranya Patarasuk, Associate Professor, Faculty of Economics, Chulalongkorn University.
Viroj Tangcharoensathien, M.D., Ph.D., Health Systems Research Institute, HSR
Aphaluck Bhatiasevi, News Reporter, Bankok Post.
Araya Thawornwanchai, News Reporter, The Nation.
Pattra
Monkol
Thamrak

Publications from INAHTA Agencies

(sorted by subjects headings)

Organisation	Title	Language	Publication year
Alternative medicine			
AHFMR	Alternative interventions survey	English	1996
GR	Alternative modes of treatment and scientific research	Dutch	1993
Blood pressure			
SHPIC	Ambulatory blood pressure monitors	English	1996
SBU	Moderately elevated blood pressure	Swedish English	1994 1995
Cancer			
NHS CRD	The management of primary breast cancer	English	1996
AETS	Breast cancer mass screening with mammography	Spanish	1995
CAHTA	Approach to the utilization of screening mammography in two health regions	Catalan Spanish	1995
CCOHTA	An overview of major breast screeening studies and their findings	English French	1992
CETS	Screening for breast cancer in women aged 40-49 years	English French	1993
CAHTA	Breast cancer screening in Catalonia: cost-effectiveness, impact in health care and cost of breast cancer therapies.	Spanish	1996
OSTEBA	Early detection of breast cancer in the Basque country	Spanish	1994
AHTAC	Prostate cancer screening (consumer statement)	English	1996
AHTAC	Prostate cancer screening (executive summary)	English	1996
AHTAC	Prostate cancer screening (technical report)	English	1996
NCCHTA	Diagnosis, management and screening of early localised prostate cancer	English	1997
NCCHTA	The diagnosis, management, treatment and costs of prostate cancer in England and Wales	English	1997
SBU	Mass screening for prostate cancer	Swedish English	1995 1996
CETS	Screening for cancer of the prostate: an evaluation of benefits, unwanted health effects and costs	English French	1995
DSI	Prostatic cancer in the Nordic countries	Danish	1992
ANDEM	Clinical and economic evaluation of the therapeutic use of cyclotrons in oncology	French	1995
DSI	Avoidance of deaths from cancer, consensus statement	Danish English	1990
GR	Quality and allocation of care in oncology	Dutch	1993
GR	UV radiation from sunlight	Dutch	1994
SBU	Radiotherapy for cancer vol 1 & 2	Swedish English	1996
Cardiology			
CAHTA	Cardiac pacemakers, electrodes and cardioverter defibrillators - Health products comparison	Catalan Spanish	1996
CAHTA	Valvular cardiac implants - Health products comparison	Catalan Spanish	1995

CAHTA	Transmyocardial laser revascularization (in press)	Catalan	
CAHTA	Oxygenators, reservoirs (venous, cardiotomies) - Health products comparison	Catalan Spanish	1995
CEDIT	Transmyocardic laser revascularization	French	1996
CETS	Revascularization procedures for the treatment of stable angina pectoris - A state of the art	English	1996
CETS	Technological trends in cardiology	French	1996
SHPIC	Stents for coronary artery disease	English	1996
CEDIT	Thoravision	French	1996
AHTAC	Paediatric heart transplantation	English	1996
AHTAC	Superspeciality service guidelines for adult heart transplantation services	English	1996
CCOHTA	Coronary stents: clinical experience and cost-effectiveness	English	1997
CCOHTA	The use of nitrates in chronic stable angina	English	1996
AHTAC	Heart and lung transplantation programs	English	1993
AHTAC	Superspecialty service guidelines for acute cardiac interventions	English	1995
AHTAC	Superspecialty services guidelines for heart transplantation	English	1995
ANDEM	New techniques of coronary angioplasty	French	1992
CAHTA	Patterns of utilization of thrombolytic treatment in a catalan health region	Catalan Spanish	1995
CCOHTA	Chelation therapy and atherosclerosis coronary artery disease	English French	1993
CCOHTA	Thrombolytic therapy: current status	English French	1992
GR	Cardiac arrhythmias. Catheter ablation, arrhythmia surgery and cardioverter defibrillator implantation	English	1993
GR	Heart surgery and interventional cardiology for adults	Dutch English	1995
GR	Heart surgery and interventional cardiology for children	English	1993
SBU	Coronary artery bypass graft and percutaneous transluminal coronary angioplasty - a literature review and ratings of appropriateness and necessity	English	1994
SBU	The role of percutaneous transluminal coronary angioplasty in coronary revascularization: evidence, assessment and policy	English	1992
	Cerebrovascular system		
NHSCRD	Stroke rehabilitation	English	1992
SBU	Stroke	Swedish	1992
	Dentistry		
CEDIT	Oral implants II	French	1996
ANDEM	Oral implantology. Current state of knowledge	French	1993
DSI	Alternatives to the dental filling material amalgam	Danish	1991
	Diabetes		
SHPIC	Preventing blindness in diabetes	English	1996
OSTEBA	Economic evaluation of the nonmydiatric retinal camera for diabetic retinopahty	Spanish	1996

SBU	Diabetic retinopathy - the value of early detection	Swedish	1993
Diagnostic imaging			
CEDIT	Extremity-dedicated magnetic resonance imaging	French	1996
CEDIT	Interventional MRI	French	1996
OSTEBA	Guidelines on the use of Imaging Magnetic Resonance	Spanish	1997
CCOHTA	Magnetic field strength issues in magnetic resonance imaging (MRI)	English French	1993
SBU	Magnetic resonance imaging	Swedish	1992
AHFMR	Bladder ultrasound scanning for the measurement of post-void residual urine volume	English	1996
CAHTA	Assessment of low osmolar contrast media	Catalan Spanish	1993
CAHTA	Guidelines for the use of low osmolarity contrast agents	Catalan	1994
CEDIT	C arm for digital neuroangiography	French	1996
CEDIT	Thoravision	French	1996
CEDIT	Charpak's multiwire proportional chamber (MWPC): Application to a low dose x-ray system	French	1996
CEDIT	Tele-transfer of angiographic images	French	1996
VATAP	Positron Emission Tomography	English	1996
OSTEBA	Iodinated contrast media in radiodiagnosis	Spanish	1995
Diagnosfoc tests			
VATAP	Assessing diagnostic technologies	English	1996
ANDEM	Indications for routine preoperative examinations	French	1992
ANDEM	Opportunity of a screening program of hemochromatosis in France	French	1995
CCOHTA	Influence of educational interventions on the test ordering patterns of physicians	English French	1992
DSI	Future laboratory technologies for community care	English	1991
GR	Testing and prediction	Dutch	1993
OSTEBA	Healthy/asymptomatic patient preoperative evaluation	Spanish	1994
SBU	Preoperative routines	Swedish	1989
Dialysis			
AETS	Assessment of the different types of dialyzer membranes for ESRD	Spanish	1996
AHTAC	Guidelines for renal dialysis and transplantation services	English	1992
Ethics			
GR	Privacy in postmarketing surveillance	Dutch	1993
GR	Proper use of human tissue	Dutch	1994
Gastrointestinal system			
SHPIC	Dyspepsia, peptic ulcer & helicobacter pylori	English	1996
CCOHTA	Pharmaceutical management of gastroesophageal reflux disease	English	1996
ANDEM	Value of echoendoscopy in gastrointestinal disease	French	1994
SBU	Gastroscopy in the diagnosis of dyspepsia	Swedish	1990
Genetics & Molecular Biology			
NCCHTA	Screening for fragile X syndrome	English	1997
GR	Genetic screening	Dutch	1994

SBU	Genetic diagnosis by PCR	Swedish	1993
	Guidelines & Methods		
NHSCRD	Undertaking systematic reviews of research on effectiveness. CRD guidelines for those carrying out or commissioning reviews.	English	1996
NHSCRD	Ethnicity and health: reviews of literature and guidance for purchasers in the areas of cardiovascular disease, mental health and haemoglobinopathies.	English	1996
SBU	Literature searching and evidence interpretation for assessing health care practices	English	1993
SFOSS	Manual for standardisation of T.A. (3rd edition)		1996
OSTEBA	The prioritization of evaluation topics of health	Spanish English	1996
AHTAC	Superspeciality service guidelines for adult heart transplantation services	English	1996
OSTEBA	Guidelines on the use of imaging magnetic resonance	Spanish	1997
OSTEBA	Evidence interpretation	Spanish	1997
ANDEM	Introducing a quality programme for improvement in healthcare organizations	French	1996
AHTAC	Guidelines for renal dialysis and transplantation services	English	1992
AHTAC	Superspecialty service guidelines for acute cardiac interventions	English	1995
AHTAC	Superspecialty services guidelines for heart transplantation	English	1995
AHTAC	Superspecialty services guidelines for liver transplantation	English	1995
CAHTA	Guidelines for the use of low osmolarity contrast agents	Catalan Spanish	1994
NHSCRD	Implementing clinical practice guidelines: can guidelines be used to improve clinical practice	English	1994
OSTEBA	Guideline to handle chronic leg ulcers in primary health care	Spanish	1995
TNO	Guidelines for home-monitoring of risk-pregnancies using cardiotocography	Dutch	1994
	Gynecology & Obstetrics		
NHSCRD	Preventing and reducing the adverse effects of unintented teenage pregnancies	English	1997
NHSCRD	The management of subfertility	English	1992
GR	Assisted fertilization: ICSI	English	1996
AETS	Pathological complications of menopause	Spanish	1995
ANDEM	Clinical and economic evaluation of Doppler in obstetrics	French	1995
CCOHTA	An annotated bibliography of the costs and benefits of prenatal screening programs	English French	1991
CEDIT	Computer assisted screening of cervico/vaginal smears	French	1996
CETS	Risks of occupational anesthetic gas exposure for the pregnant woman and the fetus	English	1996
DSI	Vaginal bleeding disorders, consensus statement	Danish English	1993
SBU	Hormone replacement therapy	Swedish	1996

SBU	Hysterectomy - ratings of appropriateness	English	1995
ANDEM	Fetal telemonitoring (FTM)	French	1992
TNO	Guidelines for home-monitoring of risk-pregnancies using cardiotocography	Dutch	1994
Hematology			
ANDEM	Assessment of the results of allogenic bone marrow transplantation and the French bone marrow donor registry	French	1993
ANDEM	Capacity of HIV1 P24 antigen screening to reduce the current residual risk of contracting HIV infection following transfusion	French	1991
ANDEM	Evaluation of screening tests to prevent transfusion-associated non-a non-b hepatitis	French	1991
ANDEM	Opportunity of a screening program of hemochromatosis in France	French	1995
GR	Allogenic bone marrow transplantation: the need for transplants up to the year 2000	Dutch	1994
SBU	Bone marrow transplantation	Swedish	1991
Home care			
NCCHTA	Home parenteral nutrition: a systematic review	English	1997
AETS	Long-term oxygen therapy and mechanical ventilation at home	Spanish	1995
CAHTA	Home mechanical ventilation	Catalan	1994
TNO	Guidelines for home-monitoring of risk-pregnancies using cardiotocography	Dutch	1994
Infections & Immunology			
CEDIT	The potential risks of transmission of Creutzfeldt-Jakob disease associated with the reuse of single-use catheters and permanent pacemakers	English French	1996
CEDIT	Intravenous immuno-globulines	French	1996
CETS	The potential risks of transmission of Creutzfeldt-Jakob disease associated with the reuse of single-use catheters and pacemakers	French	1996
GR	Adverse reactions to a vaccinations in the national immunization programme in 1994	Dutch	1996
GR	Compulsion and pressure in tuberculosis control	Dutch	1996
GR	Protection against diphtheria	Dutch	1996
GR	Protection against hepatitis B	Dutch	1996
ANDEM	Capacity of HIV1 P24 antigen screening to reduce the current residual risk of contracting HIV infection following transfusion	French	1991
ANDEM	Evaluation of screening tests to prevent transfusion-associated non-a non-b hepatitis	French	1991
GR	Adverse reactions to vaccinations in the national immunization programme in 1992	English	1993
GR	Influenza vaccination: season 1993-1994	Dutch	1994
GR	Women and children with HIV-infection or aids	Dutch	1995
Liver			
CEDIT	Transjugular intrahepatic porto-systemic shunt	French	1996

AETS	Indications and contraindications of the liver transplantation and retransplantation	Spanish	1995
AHTAC	Liver transplantation: a further review	English	1993
AHTAC	Superspecialty services guidelines for liver transplantation	English	1995
GR	Planning liver transplantations. Critical remarks on a draft-regulation	Dutch	1993
	Miscellaneous		
CETS	The impact of renal extracorporeal shock-wave lithotripsy on the use of resources in the Quebec health care system	English French	1994
SBU	Lithotripsy of kidney stones and gallstones	Swedish	1990
CAHTA	Review of the scientific evidence of commercial products based on electromagnetic fields	Spanish	1996
DSI	Biosensors in medicine, a proactive technology assessment	Danish	1990
GR	Risk is more than just a number	English	1996
GR	Requirements for expertise in radiation applications in medicine	Dutch	1996
NHSCRD	Hospital volume and healthcare outcomes, cost and patient access	English	1996
GR	Brain death criteria	Dutch	1996
	Musculoskeletal system		
OSTEBA	INAHTA. Recommendations on diagnosis and therapy for osteoporosis	Spanish	1996
AHCPR	Bone densitometry: patients with end-stage renal disease	English	1996
NHSCRD	Screening for osteoporosis to prevent fractures	English	1992
DSI	Osteoporosis. Consensus statement	Danish	1995
OSTEBA	The problem of osteoporosis in the Basque country	Spanish	1994
CAHTA	Bone densitometry assessment	Catalan, Spanish	1993
SBU	Bone density measurement	Swedish English	1995
CCOHTA	Chiropractic treatment of neck and back disorders: a review of selected studies	English French	1992
SBU	Back pain – causes, diagnosis, treatment	Swedish	1991
SBU	The problem of back pain proceedings from a conference	Swedish English	1989
GR	Risk assessment of manual lifting	Dutch	1995
NHS CRD	Total hip replacement	English	1996
SBU	Bone-anchored implants in the head and neck region	English	1988
AHCPR	Bone densitometry: patients receiving prolonged steroid therapy	English	1996
CAHTA	Use of calcitonin in the treatment of idiopathic osteoporosis	Catalan	1995
ANDEM	Evaluation of bone mineral density measurement	French	1991
	Neurology		
CEDIT	Phrenic nerve stimulator	French	1996
GR	Interferon-beta-1b in patients with multiple sclerosis	Dutch	1996
CCOHTA	Interferon beta 1-B and multiple sclerosis	English	1996
CAHTA	Epilepsy surgery	Catalan Spanish	1993

SBU	Surgery for epilepsy	Swedish	1991
Ophthalmology			
ANDEM	Corneal graft	French	1996
CAHTA	Intraocular lenses - Health products comparison	Catalan Spanish	1996
CAHTA	Phototherapeutic keratectomy with excimer laser	Catalan Spanish	1996
CAHTA	Endocyclodestruction with ophthalmologic laser microendoscope	Spanish	1996
CAHTA	Accessories for eye surgery (glaucoma implants and valves, viscoelastic solutions) - Health products comparison (in press)	Catalan	
OSTEBA	Economic evaluation of the nonmydiatric retinal camera for diabetic retinopahty	Spanish	1996
ANDEM	Evaluation of excimer laser for photofractive keratectomy	French	1992
CAHTA	Refractive laser surgery	Catalan	1993
CEDIT	Excimer laser in ophthalmology	French	1994
CETS	The screening of primary open-angle glaucoma	English French	1995
DSI	Cataract surgery in hospitals and office based practices	Danish	1992
GR	Lasers in sight. Laser correction of refractive errors	English	1993
OSTEBA	Laser excimer in ophthalmology	Spanish	1995
SBU	Diabetic retinopathy - the value of early detection	Swedish	1993
Organizational			
ANDEM	Medical record in ambulatory practice	French	1996
CEDIT	Exploration and setting of assessment priorities in ambulatory services	French	1996
VATAP	Transferring managed care practices to VA	English	1996
CAHTA	Catalonian register of medical technology equipment, 1992-1993	Catalan	1994
DSI	Electronic health communication in the Funen county, a description and evaluation	Danish	1995
SBU	Prioritising and rationing in health care - actual trends in the USA. Report from a conference	English	1991
Otology			
CEDIT	Cochlear implants	French	1996
CETS	Cochlear implants in adults, adolescents and children	French	1996
ANDEM	Cochlear implant in prelingually deaf children	French	1994
NHSCRD	The treatment of persistent glue ear in children	English	1992
Paediatrics			
CEDIT	Sleep apnea syndrome(VI) polysomnography in preterm-infant	French	1996
AHTAC	Paediatric heart transplantation	English	1996
NHSCRD	Preventing unintentional injuries in children and young adolescents	English	1996
ANDEM	Cochlear implant in prelingually deaf children	French	1994
CCOHTA	Exosurf neonatal for surfactant replacement therapy	English French	1991
NHSCRD	The treatment of persistent glue ear in children	English	1992

DSI	Extremely preterm infants, consensus statement	Danish English	1990
GR	Heart surgery and interventional cardiology for children	English	1993
Pain			
CCOHTA	Transcutaneous electrical nerve stimulation and pain management	English French	1995
Pharmaceuticals			
GR	Interferon-beta-1b in patients with multiple sclerosis	Dutch	1996
CCOHTA	Interferon beta 1-B and multiple sclerosis	English	1996
CAHTA	Patterns of utilization of thrombolytic treatment in a Catalan health region	Catalan Spanish	1995
CCOHTA	Thrombolytic therapy: current status	English French	1992
CAHTA	Use of the calcitonin in the treatment of idiopathic osteoporosis	Catalan	1995
CAHTA	Cystic fibrosis and recombinant human dornase (RHDNASE)	Catalan, Spanish	1995
CCOHTA	Pharmaceutical management of gastroesophageal reflux disease	English	1996
CCOHTA	Pulmozyme: Clinical and economic impacts	English	1996
CCOHTA	Finasteride: Clinical and economic impacts	English	1996
CCOHTA	The use of nitrates in chronic stable angina	English	1996
CCOHTA	Chelation therapy and atherosclerosis coronary artery disease	English French	1993
CCOHTA	Exosurf neonatal for surfactant replacement therapy	English French	1991
CCOHTA	A survey of investigational new drugs and emergency drug release policies	English	1991
DSI	Anticoagulant therapy in the Nordic countries	Dan,Swe, Norw,Eng	1994
GR	Marihuana as medicine	English	1996
Prevention, primary/secondary			
SHPIC	Preventing blindness in diabetes	English	1996
GR	Protection against diphtheria	Dutch	1996
GR	Protection against hepatitis B	Dutch	1996
NHS CRD	Preventing falls and subsequent injury in older people	English	1996
NHS CRD	Preventing unintentional injuries in children and young adolescents	English	1996
NHSCRD	Cholesterol screening and treatment	English	1993
Psychiatry & Psychology			
NHSCRD	Brief interventions and alcohol use	English	1993
NHSCRD	The treatment of depression in primary care	English	1993
DSI	Schizophrenia, consensus statement	Danish English	1993
Pulmonary system			
AHCPR	Lung-volume reduction surgery for end-stage chronic obstructive pulmonary disease	English	1996
AETS	Long-term oxygen therapy and mechanical ventilation at home	Spanish	1995

AHTAC	Heart and lung transplantation programs	English	1993
Radiotherapy			
SBU	Critical issues on radiotherapy	English	1996
SBU	Radiotherapy for cancer vol 1 & 2	Swedish English	1996
GR	Stereotactic radiotherapy: the gamma knife and other techniques	Dutch English	1994
Rehabilitation			
NHSCRD	Stroke rehabilitation	English	1992
SBU	The treatment and rehabilitation of traffic accident victims	Swedish	1994
Screening			
NCCHTA	Screening for fragile X syndrome	English	1997
CAHTA	Breast cancer screening in Catalonia: cost-effectiveness, impact in health care and cost of breast cancer therapies.	Spanish	1996
CAHTA	Breast cancer screening in Catalonia: cost-effectiveness, health care impact and cost of the treatment of breast cancer	Spanish	1996
CAHTA	Approach to the utilization of screening mammography in two health regions	Catalan Spanish	1995
CCOHTA	An overview of major breast screeening studies and their findings	English French	1992
CETS	Screening for breast cancer in women aged 40-49 years	English French	1993
OSTEBA	Early detection of breast cancer in the Basque country	Spanish	1994
AHTAC	Prostate cancer screening (consumer statement)	English	1996
AHTAC	Prostate cancer screening (executive summary)	English	1996
AHTAC	Prostate cancer screening (technical report)	English	1996
NCCHTA	Diagnosis, management and screening of early localised prostate cancer	English	1997
SBU	Mass screening for prostate cancer	Swedish English	1996
CETS	Screening for cancer of the prostate: an evaluation of benefits, unwanted health effects and costs	English French	1995
ANDEM	Capacity of HIV1 P24 antigen screening to reduce the current residual risk of contracting HIV infection following transfusion	French	1991
ANDEM	Evaluation of screening tests to prevent transfusion-associated non-a non-b hepatitis	French	1991
ANDEM	Opportunity of a screening program of hemochromatosis in France	French	1995
CCOHTA	An annotated bibliography of the costs and benefits of prenatal screening programs	English French	1991
CEDIT	Computer assisted screening of cervico/vaginal smears	French	1996
CETS	The screening of primary open-angle glaucoma	English French	1995
GR	Genetic screening	Dutch	1994
NHSCRD	Cholesterol screening and treatment	English	1993
NHSCRD	Screening for osteoporosis to prevent fractures	English	1992

SBU	Diabetic retinopathy - the value of early detection	Swedish	1993
	Sleep		
CEDIT	Sleep apnea syndrome(VI) polysomnography in preterm-infant	French	1996
CEDIT	Sleep apnea syndrome (v): Telemedicine in the management of sleep apnea syndrome	French	1996
ANDEM	Evaluation of the application of nocturnal nasal continuous positive airway pressure (CPAP) in the treatment of obstructive sleep apnea	French	1992
	Sterilization		
AHFMR	Alternatives to ethylene oxide/chlorofluorocarbon	English	1996
CETS	Impact of the regulation respecting ozone-depleting substances on the reuse of single-use devices	English French	1995
CCOHTA	Reuse of single-use cardiac catheters	English French	1991
	Surgery		
ANDEM	Hysterectomy - ratings of appropriateness	English	1996
CETS	Variations in rates of tonsillectomy, adenectomy and myringotomy in Quebec	English	1996
CAHTA	Dye lasers - Health products comparison	Catalan Spanish	1995
CEDIT	Endoscopy in neuro-surgery	French	1996
CEDIT	Tele-medicine in the management of neuro-surgical emergencies in Paris	French	1996
AHCPR	Lung-volume reduction surgery for end-stage chronic obstructive pulmonary disease	English	1996
AETS	Surgery for benign hypertrophia of the prostate	Spanish	1996
ANDEM	Evaluation of laparoscopy in intestinal surgery and gynecological surgery and its economic implications	French	1994
CAHTA	Ambulatory surgery	Catalan, Spanish	1992
CAHTA	Epilepsy surgery	Catalan, Spanish	1993
CAHTA	Minimum standards required for a laser treatment controlled area	Catalan	1991
CAHTA	Mission, objectives and implementation of a multidisciplinary lasertherapy platform	Catalan, Spanish	1993
CAHTA	Refractive laser surgery	Catalan	1993
CAHTA	Stereotactic radiosurgery	Catalan	1993
CCOHTA	Gallstone therapies	English French	1991
CCOHTA	The introduction of laparoscopic cholecystectomy in Canada and Australia	English French	1994
CEDIT	Excimer laser in ophthalmology	French	1994
CETS	The cost of conventional cholecystectomy, laparoscopic cholecystectomy and biliary lithotripsy	English French	1993
CETS	The introduction of laparoscopic cholecystectomy in Quebec: Effects on intervention rates and resource utilization	English French	1995

CETS	Variations in the frequency of surgical procedures by region in the province of Quebec	English French	1993
DSI	Cataract surgery in hospitals and office based practices	Danish	1992
GR	Heart surgery and interventional cardiology for adults	Dutch English	1995
GR	Heart surgery and interventional cardiology for adults	English	1995
GR	Heart surgery and interventional cardiology for children	English	1993
GR	Lasers in sight. Laser correction of refractive errors	English	1993
GR	Stereotactic radiotherapy: the gamma knife and other techniques	Dutch English	1994
OSTEBA	Laser excimer in ophthalmology	Spanish	1995
SBU	Surgery for epilepsy	Swedish	1991
SBU	Vascular surgery for arteriosclerosis in the legs	Swedish	1990
TNO	Lasers in health care, effectiveness, cost-effectiveness, and policy implications	English	1991
TNO	Minimal invasive surgery	English	1993
ANDEM	Silicone gel breast implants	French	1992
Telemedicine			
CEDIT	Sleep apnea syndrome (v): Telemedicine in the management of sleep apnea syndrome	French	1996
CEDIT	Tele-medicine in the management of neuro-surgical emergencies in Paris	French	1996
CEDIT	Tele-transfer of angiographic images	French	1996
ANDEM	Fetal telemonitoring (FTM)	French	1992
FinOHTA	Telemedicine applications in Finland 1996	Finnish	1996
Transplantation			
AETS	Indications and contraindications of the liver transplantation and retransplantation	Spanish	1995
AHTAC	Paediatric heart transplantation	English	1996
AHTAC	Pancreas transplantation	English	1996
AHTAC	Superspeciality service guidelines for adult heart transplantation services	English	1996
AHTAC	Guidelines for renal dialysis and transplantation services	English	1992
AHTAC	Heart and lung transplantation programs	English	1993
AHTAC	Liver transplantation: a further review	English	1993
AHTAC	Superspecialty services guidelines for heart transplantation	English	1995
AHTAC	Superspecialty services guidelines for liver transplantation	English	1995
ANDEM	Assessment of the results of allogenic bone marrow transplantation and the French bone marrow donor registry	French	1993
GR	Allogenic bone marrow transplantation: the need for transplants up to the year 2000	Dutch	1994
GR	Planning liver transplantations. Critical remarks on a draft-regulation	Dutch	1993
SBU	Bone marrow transplantation	Swedish	1991

Urology			
AHFMR	Bladder ultrasound scanning for the measurement of post-void residual urine volume	English	1996
AHTAC	Prostate cancer screening (consumer statement)	English	1996
AHTAC	Prostate cancer screening (executive summary)	English	1996
AHTAC	Prostate cancer screening (technical report)	English	1996
OSTEBA	Benign prostatic hyperplasia. Diagnosis and treatment	Spanish	1997
NCCHTA	Diagnosis, management and screening of early localised prostate cancer	English	1997
NCCHTA	The diagnosis, management, treatment and costs of prostate cancer in England and Wales	English	1997
SBU	Mass screening for prostate cancer	Swedish English	1996
AETS	Surgery in benign hypertrophy of the prostate - standards of appropriate use	Spanish	1996
AHTAC	Treatment options for benign prostatic hyperplasia	English	1994
ANDEM	Heat treatment of benign prostatic hyperplasia	French	1991
CCOHTA	Cost effectiveness and cost utility analyses for the treatment of benign prostatic hyperplasia	English French	1995
CETS	Diathermy and balloon dilatation treatment of benign prostatic hyperthrophy: a technology brief	English French	1993
CETS	Screening for cancer of the prostate: an evaluation of benefits, unwanted health effects and costs	English French	1995
DSI	Prostatic cancer in the Nordic countries	Danish	1992
OSTEBA	Therapy for benign prostatic hyperplasia	Spanish	1994
Vascular system			
AHCPR	Plethysmography: safety, effectiveness and clinical utility in diagnosing vascular disease	English	1996
AETS	Endovascular stents for the treatment of peripheral arterial disease for lower limbs	Spanish	1996
ANDEM	Endovascular stent treatment of aortic aneurysms	French	1995
ANDEM	Evaluation of new endoluminal revascularization techniques for lower limb arteries	French	1993
SBU	Vascular surgery for arteriosclerosis in the legs	Swedish	1990
Wounds & Injuries			
NHSCRD	Preventing falls and subsequent injury in older people	English	1996
NHSCRD	Preventing unintentional injuries in children and young adolescents	English	1996
OSTEBA	Guideline to handle chronic leg ulcers in primary health care	Spanish	1995
SBU	The treatment and rehabilitation of traffic accident victims	Swedish	1994

Annex 8

Evaluation and Program from the Training at SBU, 1999.

ANNEX 8

Stockholm den 2 mars 1999

Richard Sundbom
IHCAR
Karolinska institutet
171 77 Stockholm

Rapport

Vi har nu genomfört bifogade program för Thailändarna, inom ramen för Tassitprojektet.

Vid uppföljningen och utvärderingen framhöll de att de 1) uppskattade programmet, 2) ansåg att de hade lärt sig mer än de förväntat sig, 3) har många lärdomar med sig hem till Thailand, särskilt avseende a) vilken kompetens som behövs för att bygga upp en nationell mekanism för evidence based medicine, b) logistiken för detta, c) kraven på access till och informatikerkunskap för att hantera databaser för vetenskaplig litteratur, d) nödvändigheten att fokusera på spridning av resultat (dissemination och impact) och inte minst e) hur man kan utnyttja redan existerande nätverk på området och de resultat som finns tillgängliga av utvärderingar på det internationella planet.

Bästa hälsningar,

Egon Jonsson
Professor
Chef SBU

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Education and Training Program
at SBU
The Swedish Council on Technology Assessment in Health Care

For Dr.Somkiat Potisat, Dr. Chatri Banchuin, Dr. Napatawn Banchuin

Monday, February 15, 1999

9:00 – 12:00 Meeting with Egon Jonsson, Professor and Director SBU
- Review of research field of HTA
- History and development
- International developments and networks (INAHTA, Cochrane, ECHTA)
- SBU research methodology in systematic reviews
- Policy implications
- Current research program

12:00 – 13:00 Lunch

13:00 – 14:00 Reading time

14:00 – 16:00 Meeting with Viveka Alton, information specialist, SBU
- Literature searching and interpretation/grading of scientific publications
- The characteristics of different scientific databases
- Systematic reviews

Tuesday, February 16, 1999

9:00 – 11:00 Meeting with Bengt Brorson, Ph.D
- Evaluation of impact of HTA report on preoperative routines
- The methodology used in the HTA-study on bypass surgery and PTCA

11:30 – 13:00 Meeting with Susanna Allgurin, Marketing Director, SBU (including lunch)

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13:30 – 14:30 Meeting with Per Carlsson, project coordinator, SBU
- Mechanisms for early identification and evaluation of innovations in medicine
- Review of the SBU Alert-system

15:00 – 16:00 Discussion with Professor Egon Jonsson about required readings from February 15.

Wednesday, February 17, 1999

10:30 – 12:30 Visit to Spri (The Swedish Planning and Rationalization Institute of the Health Services), meeting with Stefan Håkansson – separate program

Thursday, February 18, 1999

9:00 – 10:00 Meeting with Professor Egon Jonsson about the preparation of a systematic review paper for seminar on February 26.

10:00 – 11:30 Meeting with Helena Dahlgren about preventive measures (including lunch)
- Antioxidant treatment
- Smoking cessation
- Community intervention programs
- Life style changes

12:00 – 13:00 Meeting with Mr. Jean-Luc af Geijerstam, an intern, about student perspective and training at SBU (including lunch)

Friday, February 19, 1999

9:00 – 12:00 Meeting with Anders Norlund, Lars-Åke Marké, project coordinators and health economists at SBU
- Economic analysis in HTA
- Cost-effectiveness analysis of
  - Treatment of back pain
  - Treatment of mild hypertension
  - Screening for prostate cancer
  - Methods for smoking cessation

12:00 – 17:00 Meeting with the Scientific Advisory Board at SBU

Monday, February 22, 1999

9:00 – 12:00 Visit to the Karolinska Hospital and Institute, meeting with Dr. George Hirsch

13:00 – 14:30 Meeting with Gunilla Lamnevik, project coordinator, and Maria Norrlander, project assistant, SBU

- Methodology and findings in projects on
  Radiotherapy for cancer
  Treatment with cytostatic drugs

Tuesday, February 23, 1999

9:00 – 10:00 Meeting with Julia Chamova about activities in INAHTA

10:00 – 12:00 Meeting with Debora Andersson about dissemination of findings in HTA

Wednesday, February 24, 1999

9:00 – 10:30 Meeting with Dr. Sten Thelander, project coordinator, about SBU research projects in the field of psychiatric care

13:00 – 15:00 Visit to the National Board of Health, meeting with Måns Rosén

15:00 – 17:00 Visit to the Ministry of Health

Thursday, February 25, 1999

11:00 – 16:00 Visit to Huddinge University Hospital (separate program)

Friday, February 26, 1999

10:30 – 13:30 Seminar at SBU (including lunch):

1. Presentation of HTA activities in Thailand
2. Discussion about findings

14:00 – 15:00 Summary and evaluation of the study visit

Seminar at SBU

On **Friday, February 26**, a seminar will be given at SBU by Dr. Chatri Banchuin, Napatawn Banchuin, and Somkiat Potisat.

This seminar will include two parts:

1) A review of the current situation in health care in Thailand with special reference to health technology assessment;
2) A presentation of the results of a systematic literature review on health consequences of sauna bathing.

The seminar starts at 10:30 am and finishes at 1:30 pm. Luncheon will be served during the seminar.

Time: Friday, February 26, 10:30 – 13:30
Place: SBU Board room

All interested are welcome. Please inform Julia Chamova of your attendance preferably no later than Wednesday, February 24, for ordering of lunch.

✂ ----------

Put in Julia's box. Thank you.

Yes, I would like to participate in the seminar on February 26, Friday

Name: _____

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Annex 9

Summary report - Asia Regional Meeting on Health Technology Assessment, November 6-7, 1997.

Summary Report

Asia Regional Meeting on Health Technology Assessment

6-7 November 1997
Maruay Garden Hotel, Bangkok

by
Health Systems Research Institute
Thailand

Background

This is a second meeting of members of the Asian Special Interest Group of the International Society on Technology Assessment in Health Care (ISTAHC/SPIG). The first one was held in Kuala Lumpur, Malaysia, in December 1996. ISTAHC/SPIG has one coordinator, based in Montreal, Canada, and three associate coordinators (one each for Latin America, Africa, and Asia). The Asia Associate Coordinator is Dr Somsak Chunharas, Director of the Health Systems Research Instiutute (HSRI) in Thailand.

At the KL meeting, a number of concerns were raised, for example, about information support and exchange, national mechanism for health technology assessment (HTA) and management, suitable information for decision-makers, reliability of studies available, public awareness creation, training in HTA, and budget support for HTA.

It was agreed at the KL meeting that a network for HTA in Asia be formed to share experience or exchange information and carry out joint or collaborative activities on HTA. HSRI then agreed to host following years' annual meetings in 1997 and 1998 with WHO support and serve as a focal point for information exchange. Additional support for these activities would be requested from various international organizations or societies such as COHRED, IDRC, INAHTA, ISTAHC, and Cohcrane Collaboration.

Opening and Participants

The second meeting in Bangkok was officially opened by Dr Prakrom Vuthipongse, Permanent Secretary, Ministry of Public Health, with welcome remarks by Dr Somsak Chunharas, HSRI Director. Some 30 participants attended including HTA network members from Bangladesh, China including Hong Kong, India, Indonesia, Malaysia, Nepal, South Korea, the Philippines, Vietnam, and Thailand. See the list of participants attached.

In his opening address, Dr Prakrom reaffirmed our strong commitment to strengthen our collaboration in health technology assessment programs. This is the second meeting on HTA in that participants would discuss further what each country had done and how we could collaborate in this important area. He stressed that technology is an essential part of the health services delivery system, and includes such technology for health promotion, disease prevention, curative care, and rehabilitation. The evolution of new technology has created new expectations

among the public and health workers who apply the technology for health. In order to fully benefit from the utilization of technology, all concerned need to take into account the efficacy and safety of each particular technology, along with its cost-effectiveness in comparison with other technologies for the same purpose.

The participants were urged to realize that its usefulness is affected by health-care providers and also the attitudes and behavior of the target population who might benefit from health technology. In addition, with resources limitations and new technologies being developed and produced, consideration of their cost-effectiveness is very crucial for decision-makers.

In Thailand, Dr Prakrom stressed that there is also a need to assess the structure of the system that will oversee the appropriate use of health technology, including the national mechanism for imports, sales and distribution, which currently cover only those for drugs, to a certain extent. Very little has been done with regard to other technologies such as health foods which are bought and used by the people themselves.

Some other technologies are costly, some therapeutic or rehabilitative procedures are complex. Regarding drugs, the mechanism for import and distribution has been established, but their prescriptions, in terms of worthiness, have not been widely practised or recognized. Thus, studies on the development of mechanism, regulations, and processes for technology import, distribution, information dissemination, and utilization are necessary for resolving national health problems.

Dr Prakrom expressed that each participant must have done something in this regard to tackle similar problems, but not much has been accomplished in terms of regional collaboration. So, now is the time to exchange ideas and to plan such activities. And thus all participants were urged to put efforts together to ensure that our respective health technology assessment programs are carried out to their maximum efficiency.

Objectives: The meeting's objectives are:

1. To report on the progress of each country's HTA plan implementation.

2. To develop a regional network and/or collaborating mechanism for health technology assessment, and a plan for carrying out joint technology assessment projects.

3. To develop work plans for (a) Joint SEACLEN-ISTAHC/SPIG Conference on Health Technology Assessment in Developing Countries, 14-16 October 1998; (b) Workshop for Investigators in early 1998 (to prepare them for presenting their papers at the upcoming Oct '98 joint conference); and (c) Third Asia Regional Meeting on HTA, October 1998.

Agenda Items

Major agenda items discussed at the meeting are:

Health Technology Assessment:
Perspective, Reality and Collaboration in Asia
Country experience and progress reports
Planning of Future Regional Collaborative Activities
Planning for 1998 Regional Meetings

Resources

The meeting was mostly funded with resources under the WHO-funded Health Technology Assessment (HTA) Program being undertaken by HRSI. The Council on Health Research for Development (COHRED) of Switzerland provided partial support for international travel expenses.

Technical Presentation

Health Technology Assessment:
Perspective, Reality and Collaboration in Asia

The topic was presented by Prof. Chitr Sitthi-amorn, Dean, College of Public Health, Chulalongkorn University, Bangkok.

Prof Chitr presented ten points affecting health system and virtually needing to be taken into account when using health technologies as follows:

1. Changing Dimension: New Needs in Development
2. Models & Methods: Going beyond the Generic
3. WDR: Methodologies Contributing to Global Mechanism
4. The Health Transition: Waiting for Attention
5. Strengthening of Health System: A Necessary Pathway
6. University & NGOs: Essential Partners
7. Ethics & Human Rights: Expanding Concerns
8. External Assistance: Magnitude and Directions
9. Health Research: Large Returns and Small Investment
10. Coping with Violence: Rising Problems, Complex Response

With changes in disease patterns, as well as in political, economic and social including information paradigms, the needs for diagnostic and therapeutic technologies will have to be adjusted accordingly, using the evidence-based medical practice approach.

In the future, the burden of diseases will also change and will require different kinds of resources for problem resolution. Researchers need to identify suitable and cost-effective ways of providing health services and involving the public or community in organizing or improving services quality.

The roles of universities and non-governmental organizations (NGOs) should enhance education, research, services, public information, and public participation or empowerment in all aspects of health services system development.

In the developed countries, universal coverage of health insurance has almost been achieved, with strong societies, consumers' concerns, and good information systems, while the developing countries are faced with health disparity (inequity, inefficiency, and poor quality), low coverage of health services, limited ability to pay, increased needs and demand in relation to supply, changes in perception of health, and weak financial support.

Thus, main research areas in the developing countries should focus on health financing (insurance, user fees, and community financing), resources allocation (benefit package and budget allocation), and new approaches to paying and management of services (with new public regulations, decentralization, autonomy, and quality assurance), with the aim of cost containment.

Technology assessment and product development programs need to bear in mind the following: framework for assessment, case specific assessment, prioritization and situation analysis, and technology regulation as well as distribution. In technology dispersion and control, relying on market forces is inadequate, but the medical profession needs to take the lead in updating the changing standards, participating in prioritization efforts, assessing reimbursement links, informing parties concerned and the public, and promoting appropriate use. In the future, problems may arise in relation to rapid technology development, manpower structure, cost containment, and quality of care.

Eventually, we need to develop indicators for monitoring the status and impact of technology use, dissemination, users' needs, care quality, and various health services delivery systems.

Summary of Country Experiences

Bangladesh

No national HTA program has been established in Bangladesh. Rather, studies have been conducted at various institutions including the Essential National Health Research (ENHR) program of BRAC/B, a non-governmental organization. There are needs for promotion and advocacy to sensitize policy-makers to support HTA initiatives and a special interest group, to establish a national coordinating mechanism for HTA activities, ISTAHC's support for developing a HTA program, and to develop staff capacity in the HTA conduct and HTA program management.

However, in terms of health technologies, one of the pressing priorities is the need to ensure access of the population to different types of appropriate technologies which have already been developed.

China, People's Republic

With the continuous development and wide application of medical technology, the impact it has on economy, culture, and ethics has attracted more and more attention in China. As resources are limited, important and urgent problems are associated with technology selection and distribution. Since 1994, three medical

technology assessment (MTA) centers have been established, one each at Shanghai Medical University, Zhejiang University, and Beijing Medical University.

The MTA Center at SMU was the first one that was established after a group of prime movers had gone for a 1991 study tour on HTA to Europe. The SMU center focuses on the economic evaluation of medical technology, for example, social and economic evaluation of CT and MRI scanners; cost-effectiveness analysis of OPV and so on; the center at Zhejiang University focuses on laboratory tests and technology standard evaluation; and the center at Beijing focuses on the social impact and medical ethics of technology.

There is a national network for MTA in China. A number of assessment projects have been conducted and many are on-going. Among some of the interesting ones completed are: policy study in the development of medical equipment; standardized management of medical quality and cost based on DRGs; social and economic evaluation of CT and MRI; evaluation in the cost of TB control; cost-effectiveness analysis of OPV; cost-accounting and standardized cost study of some medical equipment; the production, distribution, and utilization of X-ray machines; evaluation of a community intervention program to prevent spina bifida and anencephaly through the daily use of folic acid supplements in the periconceptional period.

Some information about completed studies after translation into English may be shared with others. Their training in MTA has been planned for 1997 - 2000 with support from the China Medical Board of New York.

At present, the center at SMU is doing two major HTA studies: assessment of gamma-knife and pharmocoecnomics.

China: Hong Kong

In Hong Kong, the Technology Management Office (TMO) was set up in 1996 at the Hospital Authority which governs and supervises government hospital services, covering over 90 % of hospital care. The TMO performs the dual role of setting the agenda for technology assessment, as well as providing technology assessment reports to support decision-making, taking into consideration appropriate local factors.

The model for this initial phase of health care technology management development in Hospital Authority includes:

(1) Building up the knowledge base, focusing on its role as a resource center, a focal point to collect, collate, review and disseminate relevant information. Wide linkages will be established within and outside the Hospital Authority, both local and overseas.

(2) Linking with established agencies, networking with other centers involved in health care technology assessment and advocate of evidence-based medicine such as the International Society of Technology Assessment of Health Care (ISTAHC), the International Network of Agencies for Health Technology Assessment (INAHTA), the Swedish Technology Assessment Council (SBU),

Health Council of the Netherlands, and the Cochrane Collaborations, the NHS Center for Review and Dissemination, have provided valuable input in monitoring of technology trend and maintenance of database on international experience on technology introduction and dispersal.

Establishment of linkages has been made with neighboring agencies like the Research and Technology Assessment Department of the Singapore Ministry of Health; Technology Assessment Unit of the Malaysia Ministry of Health, the Health Systems Research Institute (HSRI, Thailand), the Department of Health Policy and Management of the Seoul National University, and the Center for Health Service Research & Development of the Indonesia Ministry of Health. Senior executives from both the former bodies and the Hospital Authority are actively collaborating on a personal basis, and resulting in the formation of the Special Interest Group/Developing Countries (SPIG/DC) in health care technology assessment, under the auspices of ISTAHC. SPIG/DC could serve as an on-going forum for promoting the appropriate use of health technology assessment in improving quality of health care and the allocation of resources.

(3) Linking with world renowned experts through the organization of seminars and workshops, concepts on technology assessment were disseminated in the Hospital Authority and links were established with a number of experts in the health technology assessment field and evidence-based clinical decision making.

Technology assessments conducted to date are in the areas of (1) equipment-based technologies (Gamma knife, Positron Emission Tomography - PET, transmyocardial laser revascularisation, bone density measurement, endoscopic ultrasonography, radionuclide therapy of metastatic bone pain); and (2) drugs technology to study the drug utilization and drug expenditure trends and provide feedback to the end users, to make recommendations pertinent to drug utilization in order to facilitate the economic use of drugs, while ensuring safety and cost-effectiveness, and to monitor and evaluate the impact of such efforts.

Dissemination of knowledge on technology assessment and technology assessment results has been carried out through seminars by international experts and distribution of "Resource List" which is a compilation list of health care technology assessment and evidence-based medicine related publications available at the Hospital Authority Head Office.

Future development of technology management activities include expertise and skill development, ethical basis to support health care policy decision-making, research and development programs linkage, targeted approach in dissemination, integration with the Hospital Authority Library Information System (HALIS), hospital-based technology assessment, focusing on development to assist clinical care re-engineering and quality improvement.

India

The information regarding HTA in India was obtained from the participants coming from the Christian Medical College (in Vellore, Tamil Nadu), and the Medical College in Trivandrum (in Kerala), and thus may not represent a national picture. The Christian Medical College has a major goal of creating a medical service

facility that would be asked to provide services using state-of-the-art technologies along with appropriate single technology to best meet the needs of varying groups of population. What technologies should be adopted for what condition and population group and how to finance them are some of the crucial questions that need to be addressed and could benefit from the work on HTA.

At the national level, there is no clear program or initiative in HTA. However, capacity in clinical epidemiology, which may serve as a good basis for such activities, exists in different centers in the country. On the other hand, India, like Bangldesh, is also concerned about development of appropriate technologies to address priority health needs of the population, as well as ensuring access to these technologies rather than emphasizing mostly high-cost advanced technologies.

Indonesia

In the early eighties, with the improvement of national socio-economic conditions, Indonesia became a potential market for new health technology. Industrialisation which is one of the goals of national development has resulted in the introduction or importation of many new drugs and expensive medical equipment with high maintenance costs, some are unrepairable.

Realising this situation, the Ministry of Health (MOH), *Gajah Mada* Medical School, and the Consortium of Health Science, an independent body sponsored by the Ministry of Education, held a seminar in 1986 to assess the situation of medical technology in public and private hospitals and how the negative side of medical technologies can be minimized.

The seminar recommended that a center that screens, adapts, and develops medical technology (PAPTEK) be established in Medical Schools and in big hospitals which serve as teaching and/or referral hospitals. But not until 1995 when the first Clinical Epidemiology Unit was established at the Medical School of *Gajah Mada* University.

In 1995, the MOH established a Consortium of Medical Care, as an advisory body to the Director-General of Medical Care, to coordinate activities of the center for selection-adaptation-development of medical technology (PAPTEK) which has already existed, and to advocate the development of new centers. The consortium is an independent body whose members are representative of the MOH, the Ministry of Education, and health professional organizations.

In 1996, **a Center for Health Services Research and Development** was set up as one of the centers under the NIHRD of MOH. Its function is to monitor the effects of rapid development of medical and health technology. And in 1997, a new **Research Group on Health Technology Assessment (including nursing)** was established. Its goal is to improve the performance of health system and its financing method in facing the challenges of epi-demography transition in Indonesia through the development of cost-effective health services within the cultural context of the community.

The objectives are: to promote awareness and need for assessment of implemented health technology; to disseminate assessments done in other

countries on various health technology and nursing which are relevant to the health problems in Indonesia and to identify activities needed in adapting the consensus health technologies in Indonesia; to develop collaboration with health services institutions in establishing skills for conducting health technology assessment.

The center plans to carry out activities related to the building of concept, approach, method of HTA among members of the research group in health technology and nursing; support of small/exploratory studies to be implemented by research group members; development of skills in assessment of health technologies; improvement of the quality of nursing care; survey of the utilization of radiologic diagnostic equipment; evaluation of health screening for pilgrim candidates; development of health financing scheme; identification of surveillance problems for imported malaria cases; epidemiological study for identification of new roles of laboratory service of health centers.

On-going studies are: evaluation on the sustainability of village delivery post in Central Java; development of health education messages and method for chemoprophylaxis for malaria prevention among pregnant women; development CIE on reproductive health to improve the quality of family planning practices; the adoption of TBA method by village midwives to promote ANC and delivery by village midwives; exploration of in patient care on a district hospital to assess the utilization of health technology; development of collaboration with teaching hospitals to prepare a study on the utilization of high-tech medical equipment.

In 1998, the center plans to hold a seminar on HTA and a consensus meeting on selected health technologies.

With regard to information dissemination, several strategies will be used such as involvement of health service programme manager in problem identification and research implementation; organizing seminars for research findings presentation; and distribution of newsletters.

Malaysia

The Health Technology Assessment (HTA) unit in Malaysia was established within the Ministry of Health in August 1995 with technical assistance from Dr David Banta of the Netherlands.

HTA is carried out by expert groups which are appointed after an issue has been identified. The membership of the group depends on the issue being considered, but it is generally made up of clinical consultants, public health specialists, etc. The HTA unit participates with all expert groups and guides them through the assessments. The expert groups submit their reports to a Technical Advisory Committee, which vets these reports, with respect to methodology, findings, recommendations, etc. This committee then forwards its recommendations to the HTA Council. The HTA Council is the policy making body of the Ministry and decides on whether or not to adopt a particular technology (in the case of new technology) or continue to use a particular technology (for existing technology). The Council also decides on issues for assessment. The HTA unit is the secretariat to both the Technical Advisory Committee and the HTA Council.

Work process includes the following steps: identification of issues; prioritization of issues; appointment of expert groups; drawing up of HTA protocol; retrieval of data, synthesis of data - economic, social, legal & ethical analysis; formulation of recommendations; preparation of report; dissemination & implementation; and evaluation & feedback.

In identifying priority issues, the HTA unit communicates with consultants from various disciplines from its hospitals as well as with directors of the various divisions and programs within the Ministry of Health. In 1997, for example, 85 issues were identified.

Prioritization of the issues identified was carried out. Some were felt to be unsuitable for HTA, rather more related to quality of care, for example. Various criteria were utilized for prioritization, including the number of people affected, effect on morbidity and mortality. The Council finally identified seven issues for 1997, 3 for 1998, and 1 for 1999. The remaining could be carried out at facility/hospital level if so desired by the person who originally identified the issue, with assistance from the HTA unit.

The following are the issues for which HTA was carried out in 1996: autologous target cytokines; electromagnetic prostatectomy; spinal cord stimulation; stereotactic radiosurgery; routine Pre-operative Investigations; routine electronic fetal monitoring.

The issues for which HTA is currently underway are as follows: laparoscopic surgery; low temperature sterilization; dry chemistry in laboratory testing; polymerase chain reaction (PCR) in laboratory testing; dry laser X-ray film processing; home visiting in public health; and immunization.

Other activities carried out include the following: training course on HTA in 1996; symposium on health care technology, November 1996; first HTA SPIG meeting for Asian region, Kuala Lumpur, 1996; presentation of paper on HTA in Malaysia at ISTAHC meeting in Barcelona in 1997; seminars on HTA in hospitals; presentations on HTA at continuing medical education sessions at hospitals, divisions within the Ministry of Health; and HTA newsletter.

Other activities planned include a training course on HTA (17-21 November 1997 - Kuala Lumpur) and a presentation on HTA at quality assurance conference (March 1998).

Nepal

The Government of Nepal is committed to provision of health services to Nepalese people, particularly those living in the rural areas (over 90% of the population) using the primary health care approach. To strengthen the national capacity for carrying out research and promote its use, the Nepal Health Research Council (NHRC) was established in 1991 with a view towards: promoting a health research culture within health and related sectors; creating awareness and demand for health research, and utilization of research findings; establishing/updating a national health research agenda; coordinating research activities; and assisting researchers in enhancing their research skills.

The NHRC, as the focal point for Essential National Health Research (ENHR) in Nepal, has conducted several consultative meetings which expressed the opinion that most health technologies being used in the developed countries are unsuitable to solve the health problems of developing countries like Nepal. This is because they were developed in different settings and they require a great deal of adaptation or modification to suit local conditions.

Thus, there is a need to develop a national HTA program so that suitable health technologies can be developed and/or assessed to resolve their health problems.

South Korea

All of South Korean people are covered by some forms of health insurance with low-fee schedule and rapid rise in national health expenditure for health services mostly (over 80 percent) provided by the private sector. This has resulted in increased use of high-cost health technologies, most of which are not covered by any health insurance schemes. The problems are, for example, rapid increase in utilization of high-cost technology, high-cost drugs, and sophisticated procedures. Detailed situations have not been well investigated as there is neither organized evaluation system for nor policy measure to control medical technologies.

In Korea, among various health care technology issues, inflow of equipment has particular importance because of a high proportion and significant impact of imported supplies on the health care expenditure. In an effort to prevent unnecessary import through certification of need, the Korean government set up the "Committee for Approving Import of High Price Medical Equipment" in 1981.

Since its inception, the Committee's role can be divided into three periods by the extent of its decisive power on the adoption of high-cost medical equipment. In the first period, from 1981 to 1987, the Committee was empowered to scrutinize the appropriateness and permit each institution to import high-cost equipment. In addition, it deliberated target equipment to scrutinize, so that it played an active role in issuing a certificate of need for equipment.

From 1988 to 1992, in its second period, the function of the Committee changed from giving "permission" to "approval". In the approval process, the Committee could review the introduction of high-cost equipment items only after they had been introduced and settled down. Thus, the Committee came to lose its real authority in preventing over-inflow of high-cost equipment.

The third period is from 1993 until now, during which the regulatory function actually did not work, because the items of target equipment rapidly diminished to be confined to the import of equipment costing over US$500,000.

Apart from the law or article, the performance of the Committee, in terms of the absolute number of reviews and the rate of nonpermissions or nonapprovals, has gradually decreased so that actually the Committee has not rejected any introduction of new equipment at all since 1985.

Regarding to the impact, the diffusion of CT and MRI machines is to be considered as examples. The number of CT scanners per million population has increased year by year in spite of the regulation of the Committee. At present, the number of CTs per one million population is 17.4, one of the highest levels in the world. Also South Korea has 194 MRI machines, or 4.4 machines per one million population. In addition, the total amount of medical equipment imports in terms of cost has been increasing every year.

The Committee's function has proved to fail after all. The cause of failure is considered to be from the lack of political support and economic feasibility. The government could not compete with the pressure from the international agreement for free trade and it could overcome neither medical institutions' and trade companies' drive for profits nor technical imperative of health care providers. Among them the incentive of providers for the utilization of high-cost and "insurance non-covered" technologies is the issue of most concern.

The Philippines

There is no national HTA program in the Philippines. The national health information system has been incomplete since the decentralization of the health department in 1992. A number of appraisals of current and new programs have been undertaken, but financial and infrastructure support for HTA has remained untapped. And there is no government regulatory agency that monitors and evaluates the influx, adoption and coverage of health technologies. The Bureau of Food and Drugs of the Department of Health is constrained in terms of manpower and infrastructure in monitoring the use and promotion of drugs.

Several government health agencies and private professional groups are interested in HTA programs. Support from INCLEN has been obtained in introducing the concepts and methods of HTA to researchers and policymakers. HTAs on selected topics will be conducted.

Thailand

A five-year (1997 - 2002) Research and Development Program on Assessment and Appropriate Use of Health Technologies is being implemented at the Health Systems Research Institute in Thailand. Its purpose is to create the knowledge that will lead to appropriate use of health technology at the national, organizational, and individual levels, taking into account the benefits for individuals and overall society. The program will also work towards the stablishment of national mechanism that may work to regulate the proper use of health technologies.

This program is designed to cover three dimensions, namely (a) technology and health problems, (b) users of technology including those who are affected by technology use, and (c) measures related to structure, policy, regulations, professional standards for technology utilization and others. Four research packages and two coordinating activities under this program are as follows:

Package 1: National mechanism for promoting appropriate use of health technology.

Package 2: Technology assessment and priority health problems of the Thai population.

Package 3: Institutional development for evidence-based medical practices.

Package 4: System research for promotion of rational use of drugs.

The two coordinating activities are: (1) coordination of in-country network for HTA and (2) networking for HTA dissemination and international collaboration.

In coordinating the in-country network for HTA, HSRI serves as a focal point in disseminating or sharing HTA information among network members within the country, coordinating with health administrators and developing a national mechanism for promoting the HTA and appropriate use of health technology; coordinating specific HTA studies. It also serves as the secretariat of the Technical Working Group on HTA, comprising senior and mid-level administrators, technical officers, and researchers; and promoting HTA on priority health problems of the Thai population.

Studies undertaken or being conducted are: hormone replacement therapy for menopausal syndromes; application of preventive and rehabilitative technologies for cardiovascular diseases; technology for genetic counseling (a case of thalassemia); preoperative investigation; and technology for care of cardiovascular disease patients.

On the issue of establishing national mechanism for HTA, a consultant (Prof Egon Jonsson) from SBU of Sweden came to work with a Thai counterpart in assessing the roles and interest of major stakeholders and active players of HTA in Thailand. The recommendation was that a National Council on HTA be established with members selected from different areas of the public and private health care systems, *excluding* the pharmaceutical and other health technology industry having a vested intertest in HTA. The Council's aim would be to improve the health services by providing scientific facts and conclusions about appropriate diffusion and use of health care technology in the country. At the technical or operational level, a Secretariat Office needs to be set up to support or commision HTA research, interact with HTA groups, provide training programs, and assist the Standing Scientific Committee and the Council in formulating conclusions and recommendations for decision-making.

info re. HA's project ⇒

Studies being planned are: promotion of rational use of antibiotics; situation analysis of services for chronic diseases; situation analysis of acute infectious diseases.

Regarding international collaboration, HSRI has established an e-mail discussion group *(HealthTech@mail-list.moph.go.th)* that will promote information exchange among its members, and promote regional program planning and collaborative HTA activities in Asia.

In promoting evidence-based medical practices, HSRI plans to carry out a program aimed at improving the effectiveness and quality of care performed by health professionals using scientific evidence available in combination with a clinical

review process. A clearing-house for practice guidelines has been established at the Chulalongkorn University Faculty of Medicine. A program for development of national guidelines for clinical preventive services is being finalized.

To develop the drug system, a research package is being developed aiming to seek essential knowledge about the national drug system which is related to the overall health, social and economic systems. The results would lead to improvements in the efficiency of the management and services systems in the short and long terms, and in responsive to the problems encountered.

Research areas under the drug system development program are, for instance: promotion of rational drug use; development of drug selection system; development of drug procurement and distribution; support for drug manufacturing industry; development of national drug policy; legal aspects for supporting drug development; development of drug information system; strengthening of technical exchange on drugs; and development of mechanisms for inducing policy changes.

Vietnam

The concept of HTA is new in Vietnam. However, some aspects of HTA have been adopted such as the development of essential drugs list and essential medical equipment lists for different health care levels. There are studies underway to assess the implementation of these policies, but a national coordinating mechanism for HTA has not been established.

Efforts have been made to provide basic equipment to health care institutions, particularly community health centers, but without suitable coordinating mechanism, the level of equipment distribution and utilization is still unsatisfactory.

The need for establishing a national HTA program has been expressed, so as to assess the need and appropriateness of health technologies in different areas, to revise policies on drug and medical equipment, and to develop a mechanism for adoption of new health technologies.

Regional Collaborative Activities on HTA

1. Joint Activities/Studies

In small group and plenary discussions, participants discussed what should be undertaken collaboratively, for example: guidelines for prioritization, MRI utilization, essential drug list, basic medical equipment list, outcomes measure (of CT, MRI, PTCA, CABG machines), use of iodized salt, immunization, training or regional workshops for researchers, conferences (for researchers, health-care providers, and policy-makers).

Finally, three activities were identified for joint undertaking as follows:

Project	Countries interested
(1) Guidelines for prioritization of technologies requiring assessment Purpose: To find out what would be the practices and lessons learned in each country.	Each country rep. will inform HSRI of name(s) of interested person(s), if any, in their respective country. It was planned link this with NBHTA tool kits being developed by a team in Canada.
(2) MRI utilization Purpose: To carry out a comparative study on MRI utilization in certain Asian countries.	China, Indonesia, South Korea, and Thailand
(3) Situation analysis of certain health technologies Purpose: To select certain health technologies and then assess the status of these technologies with respect to number, distribution, utilization, cost, etc.	India, Indonesia, Philippines, and Vietnam

Note: For activities 2 and 3, further consultation among interested countries will be carried out to form groups of investigators.

HSRI will provide partial funding for investigators meetings so that they can get together and design the joint studies.

2. Joint Regional Meetings in 1998

The following meetings or conferences are planned to be held in 1998. Participants are invited to provide comments and nominations of attendees via the HealthTech e-mail network.

***14-16 October 1998*: Joint 6th SEACLEN/IEA-ISTAHC/SPIG Conference on Health Technology Management in Developing Countries, Khon Kaen, Thailand.**

The conference will be held in Khon Kaen, Thailand. The International Epidemiology Association (IEA) might jointly host the conference. The Organizing Committee includes: Chairman - Prof. Chitr, Treasurer - Dr Somjai (Chula), Secretary - Dr Sompon (KKU).

The agenda for Day 1 will be arranged in such a way that it will suit the needs of policy-makers.

Registration fees of about US$150/person will be charged to cover meeting materials, lunch and coffee breaks. Participants are approximately 100 SEACLEN members and 50 ISTAHC/SPIG (Asia HTA network) members (including 20-30 policy-makers). HSRI will cover registration fees for Asia HTA network members. However, they will have to cover their own travel expenses and per diem. HSRI will

seek COHRED support for travel expenses of **policy-makers** who will be participating on the first day of the conference.

Each country representative will provide HSRI with the names of policy-makers in December 1997.

***12-13 October 1998*: A pre-conference workshop on essential tools for HTA in developing countries, Khon Kaen.**

The workshop will be organized by SEACLEN (Prof. Chitr and Dr Sompon). Full registration fees (approx. US$200) will charged to all participants. (HSRI is not involved in this workshop.)

***12-13 October 1998*: Asia (3rd) Regional Meeting on Health Technology Assessment, Khon Kaen, Thailand.**

HSRI will hold this meeting similar to the 6-7 Nov 97 meeting held at the Maruay Hotel in Bangkok.

Participants will include about 30 Asia HTA network members (from Bangladesh, China including Hong Kong, India, Indonesia, Malaysia, Nepal, the Philippines, Singapore, South Korea, Thailand - additional members will be invited from Australia, Bhutan, Japan, The Maldives, and Sri Lanka). All participants will be provided with subsistence per diem (lodging and meals) by HSRI.

The members will suggest topics for next year's meeting.

***Feb/Mar 1998*: Investigators Meetings on Health Technology Assessment.**

HSRI plans to organize investigators meetings in Thailand. The purpose is to determine the scope of studies (prioritization guidelines, MRI utilization, and situation analysis) to be jointly conducted as indicated above. Representatives of countries interested in such areas are to nominate names of investigators to HSRI.

3. Information Exchange

The purpose of this effort is to share information that might be useful for other countries, to help other countries with minimized access to databases or the Internet, to exchange ideas on certain topics, and to set a forum for initiating collaborative activities.

HSRI agreed that it will revive the e-mail HTA discussion group network. By 1 December 1997, all participants' e-mail addresses would have been included in the network. The group address is **"HealthTech@mail-list.moph.go.th"**. All participants agreed that they will share information on their HTA programs to the extent practicable as they deem appropriate. The information might be useful in creating awareness among decision-makers (for example in Vietnam and Nepal), mobilizing resources including experts for HTA projects, and influencing information use.

Dr SP Lim of Hong Kong agreed to share her "Resource List" with other members and to help tap HTA information available to her. Some information or executive

summaries of Hong Kong HTA reports to the Hospital Authority Board of Directors, if not confidential or classified for their internal use only, might be useful to other group members.

The information that may be shared via e-mail might include list of studies undertaken or being undertaken or planned, HTA methodologies in various settings, resources mobilization for HTA, awareness creation messages or strategies for various target groups, study protocols, etc.

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Annex 10

Evaluation report from consultancy visit to Thailand February, 1-6 1999 by Göran Berleen (Hospital Management, 3.2) and summary report from activities 1993-98 (where Spri has been involved).

Goran Berleen

Spri-Project 48303
Sida-TASSIT project 3.2 **ANNEX 10**

Evaluation report from consultancy visit to Thailand February, 1-6 1999 by Goran Berleen (Hospital Management, 3.2) and summary report from activities 1993-98 (where Spri has been involved)

Background and summary of earlier activities

The Hospital Management project (3.2) is one part of an institutional collaboration within the health sector. The planning process for **the project started in May 1992.** The collaboration has involved many areas and institutions in Thailand and Sweden and the whole project was named "Technology Assessment and Social Security in Thailand" (TASSIT). Spri has been involved since 1992. The project has been financed by Sida, and the Ministry of Public Health (Division of Provincial Hospitals) in Thailand and the concerned provinces and hospitals.

In **1993** Spri and IHCAR arranged a **seven days training programme** for "decision makers" at the Ministry of Public Health in Thailand. Some of the representatives visited Gavleborg for two days together with Goran Berleen, who also coordinated a three days programme at Spri. During the the visit a draft project proposal for TASSIT also was formulated.

The areas and focus have been **capacity building for health technology assessment**, and **development of a method for measuring equity in health care delivery and financing.** Another area has been **health manpower development** and furthermore a proposal for an independent research unit for analysis, evaluation and academic research has been developed to be set up within the **Social Security Office** in Thailand. More detailed information about the different activities is available in a joint interim report from the TASSIT project published in May 1998 by the Department of Public Health Sciences, Division of International Health Care Research (IHCAR) at Karolinska Institute and Health Systems Reserch Institute in Bangkok.

In the **hospital management** project (3.2) a training program for cost analysis at all levels of the health care system has been developed in Thailand. As a step in the institutional collaboration with Spri, different models for improving efficiency in hospitals (including utilizing Diagnosis Related Groups (DRG:s), internal marketing and self governing hospitals) have been developed. The Thai partner has been the Health Systems Research Institute (HSRI) in Bangkok. The institute started its activities in 1993 and has been gradually been expanded during the nineties. Contact persons in this this project have been Goran Berleen, Spri and Dr Anuwat Supachutikul (who also participated in the two weeks visit in 1993, when the institutional collaboration was first outlined. In 1996 Dr Supasit Pannarunothai succeded Dr Anuwat as contact person.

Spri has been involved in project 3.2 since 1995, which started with a two weeks management training for ten doctors/hospital managers and the two contact persons Dr Anuwat and Dr Supasit at Spri and in two County Councils (Gavleborg, two days and Stockholm). The participants were hospital managers and researchers at HSRI and other representatives from the public Thai health care. Lecturers were hospital managers from Gavle, Huddinge, Karolinska and S:t Goran Hospitals, and professors in social medicine (Finn Diderichsen), and primary health care research (Lars Borgqvist) and professor Ernst Jonsson from Stockholm University, Associate Professor Clas Rehnberg from Stockholm School of Economics and a number of research associates from Spri. Also health economists, doctors and planners from the County Councils of Gavleborg and Stockholm gave lectures. Study visits were made to hospitals, health centres and the municipality of Jarfalla. The course was coordinated by Goran Berleen, Spri. The course evaluation was very positive.

In 1996 Goran Berleen visited Thailand to act as an intermediary for Spris experience in development/operational research. The focus was on improving the Thai health care organisation in efficiency, organisation and management as well as financing and utilizing DRG:s.The first day there was workshop with around 60 representatives from 10 hospital in order to find three suitable hospital to be financed by the Ministry of Public Health and with support from HSRI for this action research programme. Four hospitals were then visited with participation from the other six to discuss different activities. A final discussion was then held ate Ministry to decide about what activities could be started up and at which hospitals. Dr Supasit Pannarunothai coordinated the visit.

Dr Supasit visited Spri in 1996 and 1997 to have a special exchange of experience about how DRG:s are used in Sweden with Caj Erlo, Spri and also to discuss the progress of some of the Thai activities in project 3.2 (and the equity and health care financing study together with Dr Clas Rehnberg, Stockholm School of Economics).

In 1998 the development/operational research in Thailand that was supported by Sida and the Ministry of Public Health, focused on three hospitals; **Hat Yai** (a regional hospital in southern Thailand), **Chiang Rai** (a regional hospital in the northern Thailand) and **Sena**, which is a district hospital about 100 kilometres north of Bangkok. The three hospital managers and accompanying staff responsible for the development projects (altogether 7 persons) attended a two weeks training programme at Spri in health care management with focus on small hospitals and primary health care and care of elderly in Sweden.

The specific lectures were on Swedish health care organization, performance of health care in Sweden hospital and quality management, under the context of clinical budgeting and budget holding, and cost accounting, utilization of DRG:s as costing (bench-marking) and case payment, performance and quality indicators and contracting between county councils, hospitals, health centres and care of the

elderly (public and private. Other areas were evaluation of hospital autonomy, DRG, internal market, clinical budgeting, health economics, health informatics and medical and organizational audit. The course was coordinated by Goran Berleen.

The lecturers at **the course at Spri in 1998** were hospital managers, chief doctors, heads of departments and budget divisions, controllers, and a quality manager from Stockholm County Council at Huddinge, Karolinska, and Norrtalje Hospitals, development and administrative staff, heads of departments, doctors, nurses and politicians in the primary health care and care of the elderly in Jarfalla. Also a managing director from one of the biggest private companies delivering care of the elderly participated.

Lecturers from Universities in Stockholm were, Ernst Jonsson, who is a professor in business administration, specialized in comparative studies of internal markets and performance of hospitals, county councils and municipalities in Sweden, but also in U.K., Dr Clas Rehnberg, Department of Health Economics at Stockholm School of Economics, and Dr Gunnar Ljunggren, specialized in geriatrics and utilization of instruments and methods for resource and assessment analysis in geriatric care, nursing homes and home care. A number of research associates at Spri also gave lectures. The course evaluation was very positive.

Evaluation/progress report of development activities/operational research at the three involved hospitals in Thailand (visit February 1-5 1999)

February 1st

Participation in a **Board Committee meeting for the hospital management project**. The meeting was chaired by Dr Narongsakdi Aungkasuvapala, Deputy Permanent Secretary (PS) at the Provincial Hospital Division. Dr Supasit Pannarunothai assisted the deputy PS during the meeting. The participants (30) were from the Ministry, HSRI, Universities and Faculty of Medicine and the three hospitals (Chiang Rai, Hat Yai and Sena) participating in the project activities. The visits February, 2-4 were discussed and also oral reports from the management training course at Spri in November 1998.

Information was given about a loan from Asian Development Bank (ADB) to the development of the Thai health sector of 200 million US $. One of the conditions was that one of the public Thai hospitals has to be given autonomy status. Later that week Hat Yai was selected.

At the meeting cost comparisons between the three hospitals using DRG:s was discussed. After some discussion it was decided to extend the project until March 2001 and that the now developed model for cost comparisons (by the DRG-system), should be utilized in **all public hospitals (93)** in Thailand. It was also decided to develop the plan for quality audit and to introduce care maps and

care plans in all hospitals. Another decision taken was that an **information workshop** on how to utilize computers within the health sector will be held in April 1999.

February 2, visit to **Sena District Hospital,** around 100 kilometres north of Bangkok, close to Ayutthya, which is an ancient capital city in Thailand.

Around 30 persons participated in the meeting (from 8.30 a.m.to 4 p.m.) , which was headed by the hospital manager, **Dr Wicharn Girdwichai**. He is also working part-time at the hospital as a neurosurgeon. He participated in the managemnt training courses at Spri in1995 and in 1998. A majority of the participants were nurses, some were doctors, pharmacy staff (the contact person of the project at Sena is a director of pharmacy services, mr **Poramin Veraanuntavat**, who also participated in the course at Spri in 1998) and administrators.

Also staff from HSRI and the Ministry of Health and some researchers from Faculty of Pharmacy, Mahidol University participated. Dr Supasit Pannarunothai, HSRI and contact person of the project, gave a lecture about the project (not the first one at Sena Hospital, but a follow up and presenting some results from the DRG-benchmarking comparisons of Sena, Hat Yai and Chiang Rai Hospitals). At first, however, we were given some background figures about the hospital, by Dr Wicharn.

The catchment area is 212 000 inhabitants and the district is changing from agricultural to industrial township with many industrial factories and more than 30,000 employees. There is competition from a private hospital, which is situated very close to Sena. Sena Hospital was established in 1979 and has **160 beds**, and there are plans to expand to 250 beds and to have specialization also in orthopedics, ophalmology and ENT. The average length of stay has been 4 days the last three years and the number of inpatient days has varied between 50,000 and 54,000 1996-98. The **most common inpatient cases** are labor (9 %), gastro-intestinal tracts (7 %), hypertension (5 %), acute upper respiratory infections (4 %) and gastro-intestinal system (3.5 %).

The **outpatient department** at Sena hospital has had a steady increase of the number of visits; from 132,000 in 1996 to 164,000 in 1998. Accident cases are around 4,500 (6,200 in 1997). The **most common cases** were respiratory tract system (26 %), gastro-intestinal system (15 %), neuro-muscular system (9 %), cardiovascular system (9 %) and infections and parasites (6 %). The top 5, mortality diagnoses in the hospital in 1998 were; cerebrovascular diseases, heart diseases, malignant neoplasms, infectious & parasitic diseases and hypertensive diseases.

The personnel is the following; doctors 15, dentists 3, pharmacists 8, professional nurses 100, technical nurses 66, others 42, other employees 187, which adds up to a **total staff of 421.**

The hospital is mainly financed by the Minstry of Public Health in Bangkok, but has a possibility to earn some money by different activities (including patient fees). The **total hospital income** in 1998 was **57.3 million Baht** (16.4 million Sw.Cr.). 33.8 million was directly paid for (25.6 million to **medical staff salaries**, except doctors), 1.2 million to **doctors salaries** and 7, 0 million to other employees salaries. 13.1 million was paid for material (8.5 million), public facilities (1.6 million), AIDS-projects (1.4 million), Handicap-project (0.1 million), doctors benefits (0.5 million) and nurses benefits (1.0 million).

The 1998 hospital budget ended up to a little surplus because the hospital charged user fees from various sources, thus the expenditure above, that was not covered by the Ministry of Health, and was paid for by many insurance schemes as well as out of pocket payments. **Medical benefit schemes** for civil servants and relatives accounted for 14.1 million to inpatients and 3.2 million to outpatients). **Social security schemes** covered 3.6 million for the insured employees and 1.4 million for **ordinary labor**. Voluntary Health Card was covered by the Ministry of Public Health with 2.1 million and **trafic insurance** income was 0.1 million from the insurance companies (a compulsory insurance scheme). Finally, the **out of pocket** payment was as high as 13.9 million Baht.

The hospital policy at Sena is customer oriented service, staff satisfaction administration and effective financial management and the mission is to provide quality integrated health services to people, perform human resource for health development and research programs, coordinate with community and other organizations in health education and care of environment to reach the goal of "health for all". The hospital also coordinates with community and other organizations to provide good quality of life to people. The primary health care is integrated in the services of the hospital.

Participatory management is one of the administratve policies. To enhance participation and coordination the hospital has a matrix organization. The vertical organization comprises departemental teams, medical staff and nursing staff organizations. The horizontal organization has teams for frontline, backline, supportive and community services and a team for human resource development.

Research and development to improve health system and clinical quality will be further developed as well as **quality manuals** and working ways for acquisition and maintenance (also preventive) of equipments (medical, office and IT). Quality manuals will also be developed for hospital systematic quality procedures, team quality, team systematic procedures and also for work instructions. Other areas that are focused are to **improve the workplace and the environment**.

Sena Hospital also has **special committees** for environment and security, **human development**, infectious control and **information management**. **Special patient care teams** exist for outpatients, accidents and emergency, medicine, surgery, obstetrics and gynecology and pediatrics. There are **32 teams for quality improvement** and one facilitator team for continous quality improvement. Other

operational research programs are for **monitoring customer:s** (both external and internal) **needs and opinions**, by using customer complaints and surveys, IP and OP voices. The methods for the internal customer are questionnaires, group discussions and suggestion systems. Quality monitoring measurs are non-conformance reports, **customer complaint reports**, **incidence reports**, **self-assessment reports** every 3 months and internal surveys every 6 months.

Other research programs are **network health care services**, family medicine, health education, home health care, **unit cost accounting** (by cost centres and profit centres), and **clinical teams budget allocation** and **internal hospital market**. 5 or 6 groups are developing the internal market at the hospital. Side-effects (so far) are **less cooperation** (within the hospital), but the hospital is now **decreasing** its **expenditure** from a very high level, so it **now more cost-effective**.

The hospital was **accreditated** in March 1999. Out of the 15doctors, 7 are specialized and three are full-time surgeons. One of them is always on call. In the cathchment area 15 % are **poor**, which means that the health care will be paid for by the Government. There are guidlines (valid three years) in order for the **local chairman** to decide who is poor. The **electricity bill** is 4.8 million Baht per year, which is much higher (per patient) than Hat Yai and Chiang Rai. The hospital is highly computerized (medical records and DRG) since 1996. Neonatal born babies are taken care of and survive to a normal life to 96 % of the deliveries. There are hardly no home deliveries.

The hospital manager, Dr Wicharn, is apparently doing a good job as well as his staff.

February 3, visit to Chiang Rai hospital, which is avery big regional hospital on the northern border to Burma and to Laos, 785 km from Bangkok. The altitude is more than 400 metres. There are 18 districts and the population in the region was 1.2 million in 1997. There are 15 community hospitals , 193 health centres, 1 army hospital and 3 private hospitals in the region. It will not be very useful to go into to much details about the activities, number of staff and so on. We were given a good presentation the hospital manager, **Dr Renu Srismith,** who also headed the group which participated in the management training. She is an **excellent manager** and the hospital seems to be very well run by the staff. The **DRG-expenditure** level in 1998 was extremely **low** per patient and **far below Sena** (highest) and Hat Yai. The contact person/researcher in the project is a surgeon, **Dr Supuk Pitipakorn.** The hospital and the activities were presented by the hospital manager and her staff. We were also shown the hospital and parts of the catchment area, which is a rather poor part of Thailand.

Some details about the **region** will now be given; 126 physicians (9,640 inh. per person), 42 pharmacists, 33 dentists, 684 professional nurses, 457 tecnical nurses, 1 226 beds (1.0 per 1 000 inhabitants). The **hospital** was established in 1937 and has 757 beds, 65 physicians, 26 pharmacists, 308 professional nurses, 207 technical nurses and 1 039 other staf, which gives a **total of 1 654 staff.**

The **LOS** was 6.5 days in 1996 and 5.7 daysin 1998. The number of beds increased by 30 during the same period, but the available beds decreased from 773 to 734!, whith an occpany rate of 97 % (1998). The death rate at the hospital was 4.6 % in 1998. There were 4 744 deliveries, 1 643 cesarean sections (35 %, which is much above swedish average (12-13 %).16 963 major and 3 112 minor surgeries, 47 000 inpatient days, 407 301 outpatients (an increase from 348 642 in 1996).

The **10 leading case grups of deaths** at Ciang Rai in 1998 was HIV (1), other infectious diseases, motor cycle injuried, cerebrovascular diseases, chronic renal failure, other heart diseases, chronic lower respiratory diseases, other diseases of the digestive system, other disorders originating in the perinatal period and nr 10: pneumonia.

The **10 leading case groups of illness among the inpatients** were HIV, complication of pregnancy and other obstetric conditions (not normal deliveries), motorcycle injuries, other external causes of accidental injury except poisoning, pneumonia, other diseases of the digestive system, thalassemia, chronic lower respiratory diseases, other infectious diseases, and nr 10: other intestinal diseases.

The **10 leading case groups of illness in OPD** were diseases in the respiratory system, diseases of the digestive system, diseases of musculo skeletal system, infectious and parasite diseases, other external causes of morbidity and mortality, diseases of the genito-urinary system, diseases of the eye, diseases of the skin+soft tissue disease, transport accidents, diseases of the circulatory system.

February 4, visit to Hat Yai hospital. The report will now be very short and summative, due to the fact that this hospital is extremely well managed and, as has been mentioned above, has been selected to be autonomos and will be supported by the Asian Development Bank.

The manager presented the hospital and some of his staff, the contact person is **Dr Boonyaarat Warachit, who also is a pediatrician.** She has been assisted by miss **Wanida Saeung,** and all three participate in the management training at Spri in 1998. Dr **Supasit**, HSRI, also participated with a presentation and evaluation of the project, as well as Dr **Chanvit, Ministry of Public Health.**
In Hat Yai there are three **private hospitals** and when I visited Hat Yai in 1996 these hospitals were very competetive and as the area is very close to Malaysia (900 km south of Bangkok) there are also foreign patients coming to these hospitals. Now, due to very competitive competition from the public hospital in Hat Yai and also due to bad times, the public hospital is the winner. The private hospitals are very close to closure/bankrupcy.

Goran Berleen, Spri

Annex 11

Workshop on Building Learning Organisations, June 7-11, 1999. Town in Town Hotel, Pattaya, Chon Buri, Thailand.

Workshop on Building Learning Organizations.
June 7 - 11, 1999.
Town in Town Hotel, Pattaya, Chon Buri.

1) Professor Dr. Pakdi Pothisiri, Deputy Permanent Secretary has kindly presided over the opening ceremony and delivered his speech addressing the importance of self - motivated continuous learning and sharing among individuals so that each and everyone of them, and ultimately, the organization, will be sensitive and responsive to changes. Therefore, the quality of their performances will be ceaselessly improved and the organization will be able to ride on the waves of changes.
2) Dr. Kyllike also addressed the importance of learning and added on that whatever we've done, we did not do for ourselves, but for our customer.

To facilitate the process of learning, ice - breaking activities had been introduced to make everyone feel comfortable with each other.
3) Expectations of the workshop have been expressed by the participants that they will be provided with :

1. new concepts in organization management;
2. building learning organization theory and its applications;
3. team building;
4. opportunity to exchange knowledge and experiences with others.
5. application of the principles of learning organization to solve problems in community:

These expectations would be check by the participants at the end of the workshop if they have been fulfilled.
4) Norms of living together were set by the participants
5) Building a Learning Organization (Mr. Wisit Shoowong) Concepts and principles of building a

learning organization had been transferred to the participants as follow:

Evolution of civilizations:

1. Stone age (pre modern age)
2. Agricultural revolution (before 1800)
3. Industrial revolution (from 1800 to 1957)
4. Information revolution (from 1957)

Now is the time for learning culture, however, there are constraints to learning, these are:

1. I am my position. People know only their jobs and don't care/don't know about the organization's goals.
2. The enemy is out there. Problems have been recognized, but people don't realize they are part of the problems and don't know how to deal with them.
3. The illustration of taking charge. Work is not systematically, but routinely carried out, problems are dealt with superficially; roots of causes have never been realized.
4. A fixation on events. People don't perceive changes that continuously take place.
5. The delusion of learning from experience. Past, present, and future scenarios can not be differentiated. Many people can't discern that failures are not always failure and successes are not always success; they are only pieces of information that will assist us to understand the situation.
6. The myth of the management team. No transfer of talents/knowledge/expertise among staffs which indicates no team learning.
7. The boiled frog syndrome. Gradual changes are not discerned that people are not reactive to these changes until it's too late to take any action.

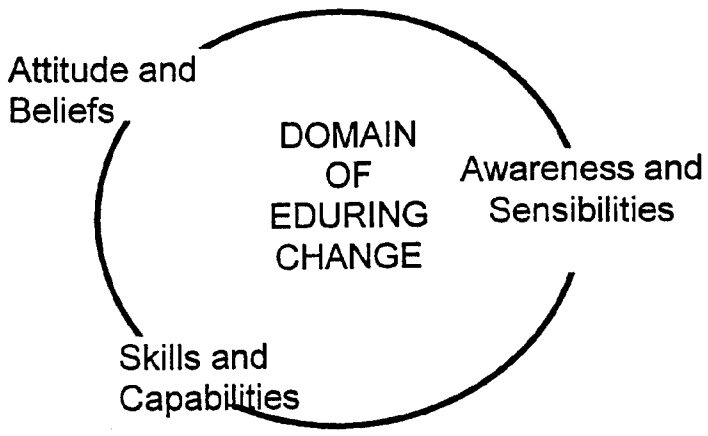
Learning Organization

A skillful organization that creates, seeks, transfers, and applies knowledge to shape up staffs' behaviors reflecting new knowledge and wisdom that take place in the organization.

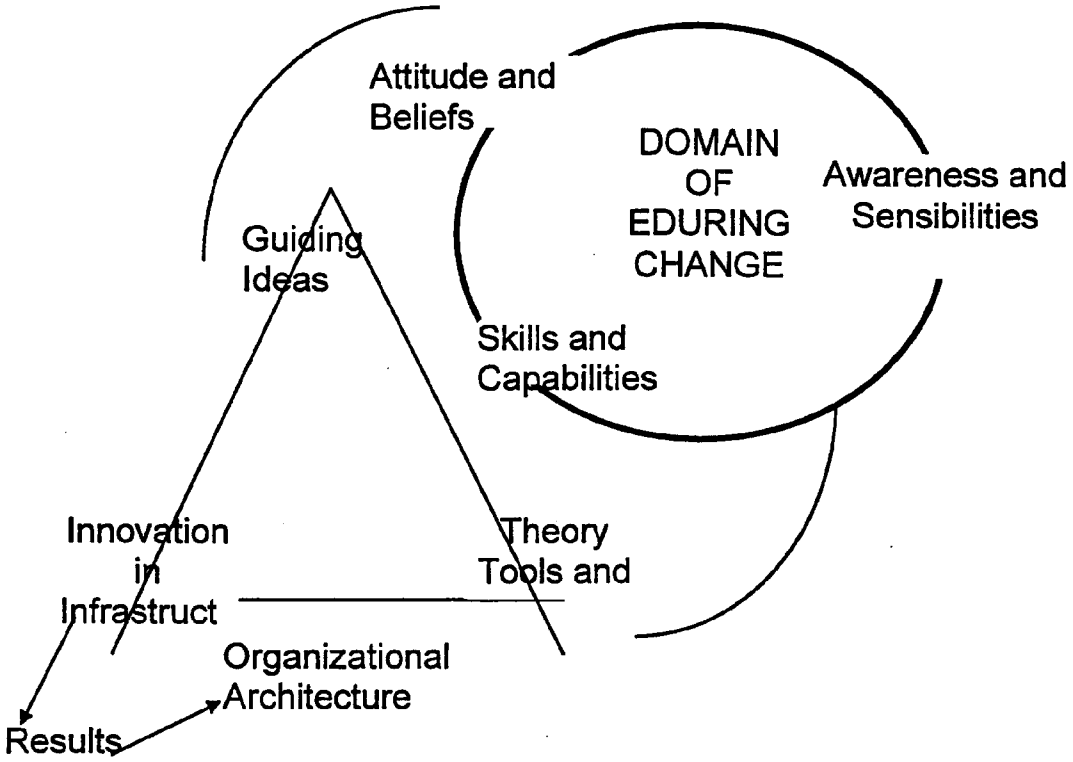
The Fifth Disciplines of a Learning Organization

1. Personal mastery. The desire to increase one's competencies to realize his/her own aspiration and to foster the organization's environment to facilitate members' self-development and achieve their goals.
2. Mental Models. It is an individual's wisdom, reflecting ways of thinking, fact findings, situation analysis and interpretation for decision making and taking actions.
3. Shared vision. The creation of voluntary cooperation and commitment among members of an organization, through their common goals for the betterment of the organization.
4. Team learning. The exchange of ideas, knowledge, and experiences among members of an organization which leads to the multiple development of the intelligence and capacities of team members.
5. Systems thinking. The ability to understand and explain any phenomena by systematically linking all factors involved. This will result in efficient problem solving.

Deep Learning Cycle



A Framework for the Learning Organization



Performance

Ability X Motivation = Performance

Learning Performance

Learning → Ability X Motivation = Performance

Learning Hierarchy

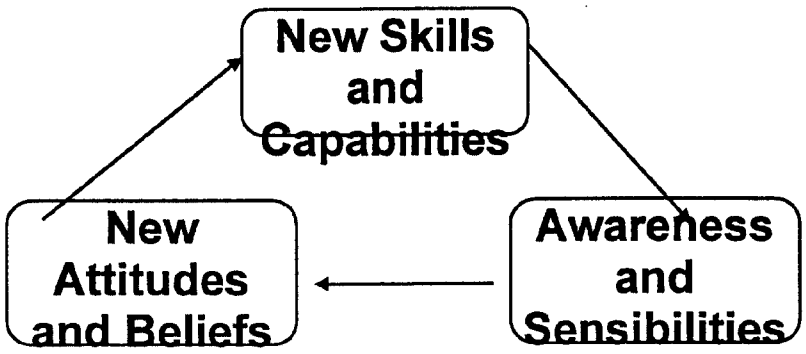
1. Data = Raw facts, figures, and details.
2. Information = Organized, meaningful, and useful interpretation of data.

3. Knowledge = Awareness and understanding of a set of information and how that information can be put to the best use.
4. Wisdom = The best application of knowledge.

Organization Wisdom

1. Manpower
2. Learning
3. Knowledge
4. Technology
5. Organization

Learning Cycle



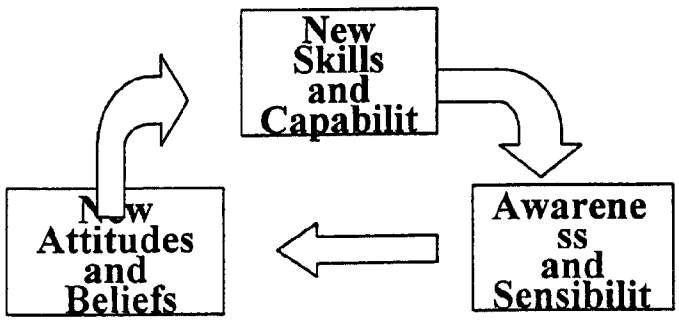
New Skills and Capabilities

- Aspiration
- Reflection and conversation
- Conceptualization

New Awareness and Sensibilities

- Seeing a mature

Learning Cycle



New Skills and Capabilities

- Aspiration
- Refection and Conversation
- Conceptualization

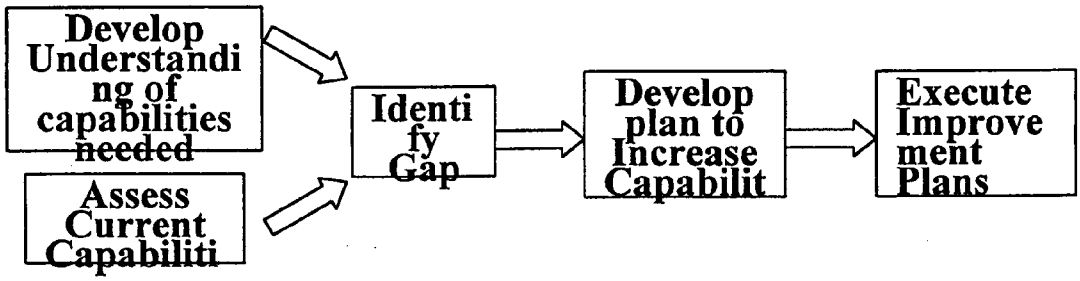
New Awareness and Sensibilities

- Seeing a mature market
- Listen to the whole
- Imagine alternative

New Attitudes and Beliefs

Traditional Organization	Learning Organization
• Fragmentation	• Integrity
• Compromise	• Openness
• Defensiveness	• Commitment
• Fear	• Collective Intelligence

Capability Management Process



Mental Model

- Data
- Assumptions
- Conclusion

The Ladder of Inference

- Take Actions
- Adopt Beliefs
- Conclusions
- Make Assumptions
- Add Meaning

- Select Data
- Observe Data and Experience

Increasing Individual Learning

Understanding	• Reinforce Understanding of the importance of lifelong learning
Willingness	• Cultivate attitude of continuous personal betterment
Capabilities	• Enhance processes to encourage individual learning in areas that benefit the company the most

Learning factors

- High Standard [Stretch Targets]
- Willingness to Learn
- Open - mindedness
- Flexibility
- Innovation

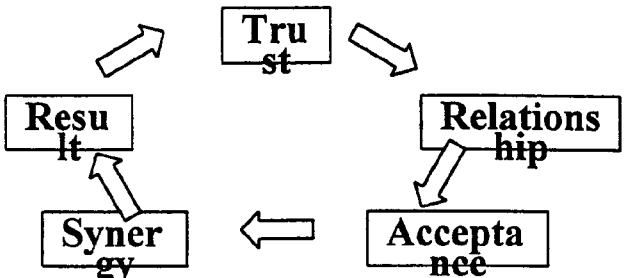
Increasing Team Learning

Understanding	• Foster an understanding of what real teamwork is
Willingness	• Create interest in developing teamwork skills
Capabilities	• Develop much stronger teamwork skills

Team Learning

"Team is a group of people who need one another take effective action" Peter Senge

The great Team



How we interact

High Advocacy	**Explaining Imposing**	**Mutual Learning**
Low	**Withdrawing**	**Easing in**

Low Inquiry High

Learning Organization

Individuals

- Capability to Learn

Teams

- Understanding Need for Real Team Learning
- Capability for Teamwork

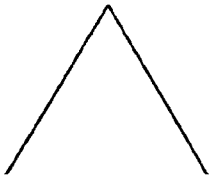
Organization

- Learning Associated with Organizational Direction
- Learning to Increase Process Capabilities

Traditional Organization	**Learning Organization**
• Productivity	• Learning
• Workplace	• Learning Environment
• Predictability	• System
• Training	• Self-directed Learning
• Worker	• Continuous Learner
• Supervisor	• Coach

System Thinking

The Ways of explaining Reality



EVENT

Trends & Patterns

Hidden

Traditional Thinking ⇨ Try to solve problem

Systems Thinking ⇨ Try to Understand problem

Business Model Links to Learning

Business Fundamental

- Mature Business ⇨ Learning to solve more difficult problems
- Environmental Change ⇨ Learning to adapt rapidly
- Increasing Complexity ⇨ Learning to formulate responses to complex situations
- Knowledge for competitive Advantage ⇨ Learning to stay ahead of Competitions
- Changing Workforce ⇨ Learning to satisfy higher aspirations

Learning Culture

Three Critical Issues

- Meaning
- Management
- Measurement

Meaning

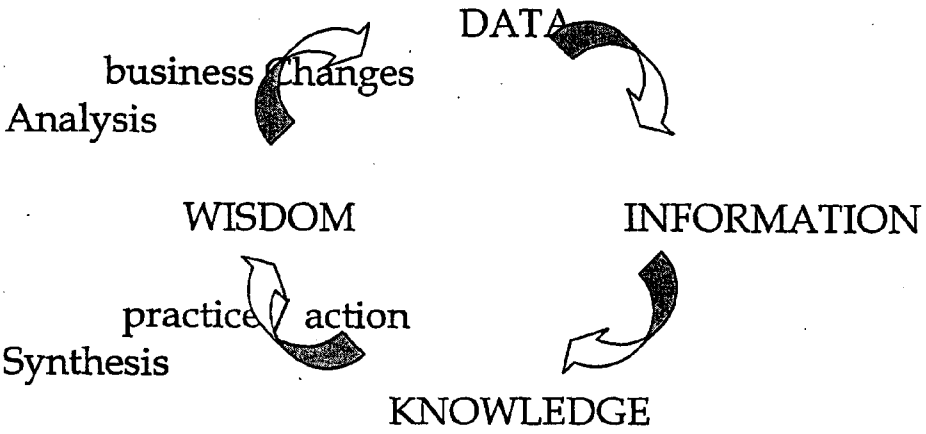
- Learn how to learn
- Learn how to change
- Learn how to improve
- Continuous learning
- Continuous improvement

- Learn how to use
- Learn as a way of human being

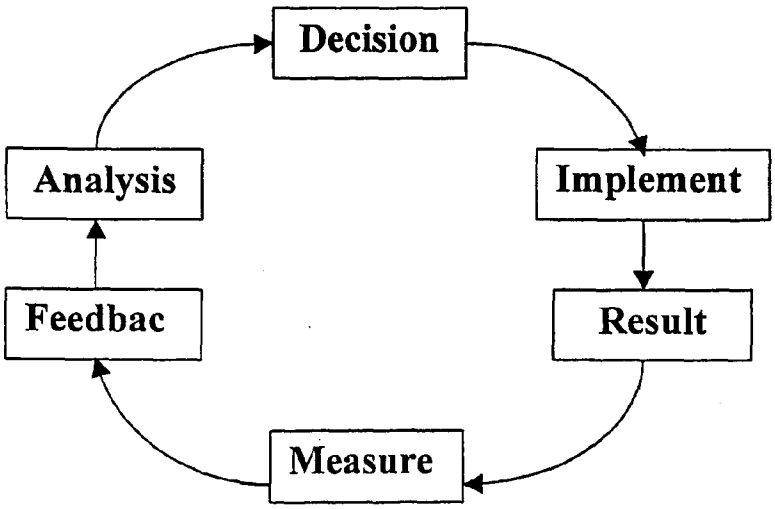
5 Major Activities of Learning Organization

- Systematic Problem Solving
- Experimentation with new approaches
- Learning from their own experiences and past history
- Learning from the experiences and best practices of other
- Transferring knowledge quickly and efficiently through out the organization

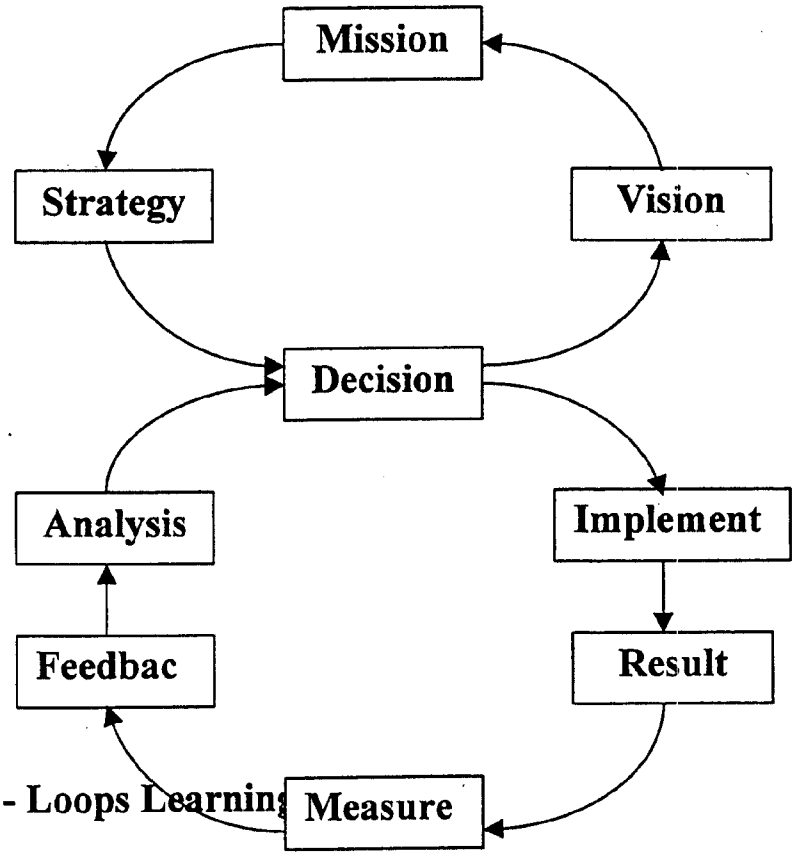
Learning Cycle



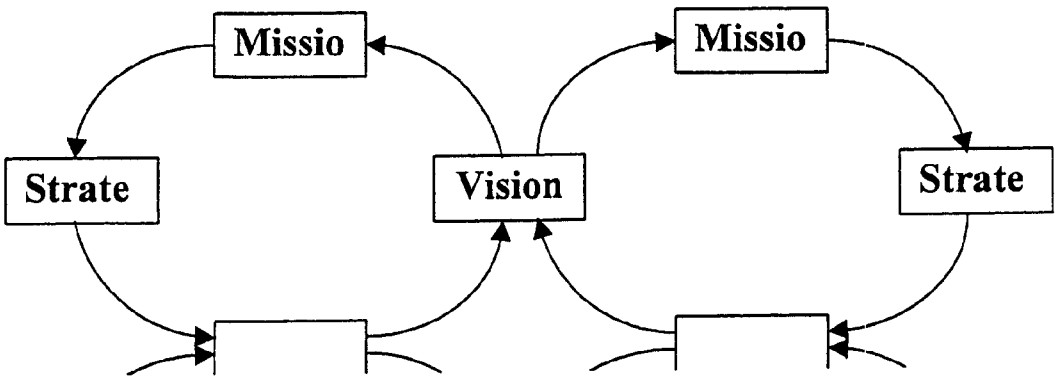
Single - Loop Learning



Double - Loop Learning



Multiple - Loops Learning



Systematic Problem solving

- Scientific Method
    - * Deming Cycle (P D C A)
    - * SA-PA-DA-PPA
- Fact-based Management
- Statistical Approach

Learning From Past Experiences

- Past lessons learned
- Diary/ data recording
- Case study
- Exchanging of experiences

Learning from Others

- Benchmarking
- Study Mission
- Interview
- Observation
- Feedback

Transfer of Knowledge

- Report
- Demonstration
- Training and Education
- Job Manual
- Job rotation
- Others

Conventional Learning

- Training
- Education
- On-the-job learning
- Meeting
- Coaching
- Counseling
- Job Rotation
- Job anticipation

New learning Opportunities

- Simulation
- Manager forum
- Management transfer
- Small group activities
- Voluntary study circle
- Experimentation
- Morning Brief
- Computer-based learning
- Long distance learning
- Study Mission

Measurement

- Learning Curve
- Half - life Curve
- Cognitive
- Behavioral Change
- Result

Foundation of Learning Organization

- HRD System
- Top Management Support
- Participating Leadership
- Open Communication Environment
- Empowerment
- Performance Management System
- Organization Structure

Good Corporate Governance

- Efficiency
- Transparent
- Accountability
- Participation
- Ethics

After concept and principles of building learning organizations had been given to the participants, different activities had been arranged for them so that they could practice and develop skills needed for generating a learning community. These were:

6) Participants were asked to write daily learning log to reflect their own learning from the activities provided in the workshop and how they could make use of these experiences. This was to train them thinking, analyzing, and synthesis skills.

7) Mental model development has been introduced by :

1. the application of Buddhist teaching and meditation to develop positive thinking and new ways of looking at the world.

2. the application of the principles of living a happy life which one had to maintain :

2.1 good health

2.2 harmony within family, work place and society

2.3 maintain will being

To achieve this goal, one had to practice gratitude Toward everything that had happened, obedient to and practice the righteous teachings, and humbleness from heart.

8) Activity : River of life

This activity allowed the participants to tell stories about their lives both good and bad, from birth until present, by driving rivers using different colors to represent happiness, suffers, problems, obstacles, etc that happened to their lives.

From this activity, the participants were also aware that they could greatly learn from each other, and that they could learn from any situations, as long as they took the time to think about it.

9) Communication skills.

The development of communication skills was introduced by using games that allowed the participants to understand effective communication process which included sender, receiver and other factors involved message, channel, and environment to realize the importance of good communications; to perceive factors affecting communication process.

- to realize the limitation and efficient applications of one - way and two - way communication;
- to realize the importance of planning, monitoring, and evaluation of communication
- to realize the importance of setting up goals / objectives by all parties concerned to have common understanding.

10) Listening and speaking skills.

An activity - TOSO (Tell our stories ourselves) was introduced to develop listening and speaking skills among the participants and to make them aware that they could

learn from anyone, anywhere. The topic of discussion was "The most impressive learning experience I ever had."

From this activity, the participants had learned from both methods and contents as follow:

1. Method
    - 1.1 Listening skill was crucial to learning.
    - 1.2 It's important to follow the rules set by groups.
    - 1.3 Respect each other
    - 1.4 Speaking skills
    - 1.5 Communication skills
    - 1.6 Building Learning Network

2. Contents
    - 2.1 Learning from others' experiences.
    - 2.2 Learning from others' failure.
    - 2.3 Knowledge could be generated from different sources such as direct experiences success failure, work - conversations, observation, reading, etc.
    - 2.4 Lateral thinking could make us happy.
    - 2.5 Paradigm could be shifted if the most striking incidence, though may small, had taken place.
    - 2.6 Past experiences shaped up our ways of thinking.
    - 2.7 Different ways of self - development.
    - 2.8 Good teamwork was essential to success.

11) Development of Systems thinking.

Six - hats technique was applied to build systems thinking among the participants. Each color of the hats represented different ways of thinking :

White hat represented data and information.
Red hat represented emotions and feelings.

Yellow hat represented creative, new alternative thinking.

Black hat represented critical / oppose the issue and evidence.

Blue hat represented control of the process, checking if the discussion going at the right direction.

In the process of group discussion, the participants were ask to discuss "How to turn an ordinary organization to a learning organization", using six hats technique. This allowed them to practice systems thinking - critical, creative, lateral, analytical. Results from group discussions were as follow :

Group 1 : Guidelines in building learning organization

1. Develop shared vision and commitment among staffs : think together, work together
2. Build up learning organization critical man to develop knowledge of and good attitude toward building learning organization
3. Analyze organization learning capacity by using SWOT and AIC technique.
4. Team building

- Exchanging knowledge and experiences among staffs within and outside the organization.
- Staff development through different means such as training, coaching, experimentation, field visit, exchanging staffs, etc.
- Support the formation of common interest groups.
- Make technical forum available for the staffs to exchange their ideas and work experiences.
- Provide the opportunity for the staffs to freely express their comments and recommendations concerning the performance of the organization.

- Restructure of the organization and set up work standards for each section/department.
- Assess customers' needs and attitudes towards the organization.
- Document all activities that had been carried out for further improvement and transfer.
- Organize regular round table discussions for administrators at all levels.
- Build up learning network within and outside the organization.
- Regularly evaluate work performance and process.
- Academic institutions should strengthen thinking skills among students.

Group 2. Guidelines in building learning organization

Goal: Health for all

Concept: Manpower Development

1. Team members strive forward for self-development to set a good example for colleagues.
2. Encourage colleagues to continuously learn.
3. Team building.
4. Provide the opportunity to transfer the knowledge about learning organizations to others, such as:
   - Technical forum
   - Build critical mass.
   - Provide technical support for continuous learning.
   - Formulate real shared visions with the participation of all staffs.

Group 3. Guidelines in building learning organization

Means to develop a learning organization:

1. Promote positive attitude.
2. Develop all sections at the same time.
3. Develop good team work that had common goals, learning and development desires.

4. Let the staffs think for themselves what did they need to do.
5. Use combination of methods, DTPS, AIC, Focus group, and Empowerment.

Methods	Strengths	Limitations	Key words
I.S.C.	– Participatory learning – Improvement of the staffs' attitudes	– Limited ides if group was not diverse – Not much of team building activity – Not for internal problem solving.	– Shared vision – Systems thinking, – Mental models.
P.L.	– Learning and attitude development		– Mental models – Personal mastery
Empowerment	– Manpower development – Shared learning		– Shared vision – Systems thinking – Organization development

Assignments for the participants during the break before next workshop

1. Apply the assessment form to assess their organization learning capacity.

2. Determine what are the weaknesses of the organization that they have to work on.

Determine the problem on which they want to develop a proposal applying learning organization concept.

Results of the evaluation of the workshop on "Building Learning Organization" held during June 7 - 11,1999.

Overall, 55% of the participants think this workshop in most useful to them and 41% of them think it is highly useful.

59% of them think that they have clearly understood the concept of learning organization at the highest level.

55% of them think they can make use of knowledge in their own workplace.

Suggestion from the participants

1. Study tour should not be set at the end of the workshop because the participants won't have time to discuss among themselves.
2. Participants think that exchanging experiences among themselves is the best way to learn from each other and more time should be allocated for discussion.
3. Each activity was not efficiently linked, making it difficult for the participant to follow and make connective.
4. Facilitators should take more active roles in all activities and in assisting the participants to learn.
5. The workshop should be conducted in "Participatory Learning" fashion.
6. Concept of learning organization should be simplified to make it better understandable and concrete examples should be cited.

<u>From the follow - up activities by PBRI group, it has been noted that:</u>

1. Some participants still have misconcept about learning organization and develop special projects to support it.
2. Some have combined the techniques they have learned from this workshop will those they learned from other training programs to develop a "Participatory Learning" program with set agenda. The activities of which, however, have been rendered in the manner that participants have limited chance to analyze and synthesize their thoughts. It stops at brain stroming stage.
3. There out of four participants express their design to have the second workshop in Nan province where they can visit organizations considered to be learning ones.

Name	Office
Wiwat	Talung Hospital
Paiboon	Talung Hospital
Surangsri	Talung Hospital
Supadee	Talung Hospital
Sarima	Talung Hospital
Janpen	Talung Hospital
Kobkul	Talung Hospital
Worasit	Talung Hospital
Peerasak	Umnatchareon Hospital
Prayoonsri	Umnatchareon Hospital
Ratchanee	Umnatchareon Hospital
Siriluk	Umnatchareon Hospital
Daranee	Umnatchareon Hospital
Snit	Umnatchareon Hospital
Kanokwan	Umnatchareon Hospital
Kannukar	Sirindhorn College of Public Health, Trang
Ruja	Sirindhorn College of Public Health, Trang
Payong	Sirindhorn College of Public Health, Trang
Jantima	Sirindhorn College of Public Health, Trang
Piempong	Sirindhorn College of Public Health, Trang
Nopadol	Sirindhorn College of Public Health, Trang
Wanida	Boromarajonani College of Nursing, Noparatwachira
Wipawee	Boromarajonani College of Nursing, Noparatwachira
Utchara	Boromarajonani College of Nursing, Noparatwachira
Wannaporn	Boromarajonani College of Nursing, Noparatwachira
Sudarat	Boromarajonani College of Nursing, Noparatwachira
Sompat	Health Office Provincial : Nan
Pisit	Health Office Provincial : Nan
Yaowaluk	Health Office Provincial : Nan
Kitisak	Health Office Provincial : Nan
Supanee	Health Office Provincial : Nan
Aroonrat	Health Office Provincial : Nan
Tanud	Health Office Provincial : Nan

Name	Office
Ugrid	Praboromarajchanok Institute
Boosaba	Praboromarajchanok Institute
Tipaporn	Praboromarajchanok Institute
Alisara	Chulalongkorn University
Maneewan	National Institute of Development Administration
Doljai	Praboromarajchanok Institute
Chalinee	Praboromarajchanok Institute
Cholathee	Praboromarajchanok Institute
Busaba	Praboromarajchanok Institute
Numpit	Praboromarajchanok Institute
Boonsom	Praboromarajchanok Institute

The Second Workshop on Building Learning Organizations
September 5 - 10, 1999
at Nan Valley Resort, Nan Province.

The organization of this workshop is based on the participants needs and, as much as possible, interactive oriented. The formal lecture, therefore, will be kept minimal. The change of the workshop venue has been due to the availability of learning organizations and resource persons, according to the participants, in the areas. The workshop starts on Sunday September 5 because of time limitation and problems with the transportation to and from the province which forces the team to finish at noon of September 10.

Saturday September 4, 1999

- Arrive at Nan province and check in Nan Valley Resort.

Sunday September 5, 1999

07.30 - 08.30 am. Registration
08.30 - 09.00 am. Orientation to the workshop
09.0 - 12.00 am. Civil society Forum
The discussions led by community leaders and Dr.
Boonyong Wong rukmitr, founder of the civil society in Nan.
01.0- 05.30 pm. Field trip to the community to observe and discuss with laymen about civil society.
07.00 pm - Learning log

Monday September 6, 1999

08.30 - 09.00 am. Plenary session: lessons learned from Sunday.

09.00 am.- 3.00 pm. Presentation: What have been done during the past three months
and what we have learned.
by teams of participants
03.30 - 5.00 pm Round table discussion :
participatory learning
Resources persons: Dr. Kyllike Christensson
Dr. Eva Johansson
Dr. Stephen King
07.00 pm - Learning log

Tuesday September 7, 1999

08.30 - 09.00 am. Plenary session: lessons learned from Monday.
09.00- 12.00 am. Round table discussions :
Experiences in evidence-based ~~study~~
Resource persons: Dr. Kyllike Christensson
Dr. Eva Johansson
Dr. Stephen King
01.00 - 5.00 pm. Round table discussions :
Experiences in Change Management
Resource persons: Dr. Kyllike Christensson
Dr. Eva Johansson
Dr. Stephen King
07.00 pm - Learning log

Wednesday September 8, 1999

08.30 - 09.00 am. Plenary session: lessons learned from Tuesday.

09.00-12.00 am. Field trip to learning communities to observe and discuss with leaders and villagers to learn how a learning community could be formed and sustained.

01.0 - 04.30 pm. Visit Nan provincial public health office to discuss learning organization: inspiration, motivation, establishment, activities, etc.

04.30 - 05.30 pm. Group discussion: What do you learn today and what do you think about applying it to your workplace?

07.00 pm - Learning log

Thursday September 9, 1999

08.30 - 09.30 am. Presentation of group discussion.

09.30 am - 05.00 pm. Project development, using knowledge and experiences gained from the workshops to solve the problem or improve the situation of each individual team's workplace + Activities and Gantt chart.

Friday September 10, 1999

08.0[illegible]- 12.00 am. Presentation of the project.

12.00 - 12.30 pm. Closing ceremony

Annex 12

Proposal on Capacity Strengthening in the Area of Health Policy and systems Research in Thailand.

PROPOSAL ON
CAPACITY STRENGTHENING IN THE AREA OF
HEALTH POLICY AND SYSTEMS RESEARCH IN THAILAND

Proposed by Health Systems Research Institute

April 6, 1999

RATIONALE

The Future Challenges to Thai Health Care Systems

1. The Thai health care systems were well described by Roemer[1] as a *laissez faire* entrepreneur system, whereby the government put very few interventions onto the market. As a result, there is no congruent national health policy leading to somewhat fragmented subsystems, duplication and competition within the health sector. The government has a limited regulatory capacity over pharmaceutical and private hospital industry; though legal framework was drawn but enforcement is problematic. More than 30% of Thais are not covered by any kind of health security whereby among those covered there is a great discrepancy on benefit package entitlement, contributions and level of budget subsidies.

2. This leads to overall system inefficiencies; Thailand is one of the highest drug consumption countries - up to 30% of total health expenditure[2]. It is unacceptable for public private duplications of high cost technology and notoriously unethical market promotion on the use and abuse of CT Scanners and MRIs among private sector[3]. Then there is little value of money for our health expenditures.

3. Future challenge is not only bounded by the problem of scarce resources to cope with the unfinished agenda of the 20th century such as HIV/AIDS, traffic accidents, cancers and cardio-vascular diseases; life-style related illness and aging population in the 21st century but also prompt us to answer the question of how wisely we should use the available resources. The Thai health systems are now struggling and will struggle further around three major problems, namely **equity, efficiency and quality of care.** Furthermore, implications of free trade on health

[1] Roemer MI (1993). National Health Systems of the World. Oxford: Oxford University Press.
[2] Wibulpolprasert S (ed.) (1994). Drug system in Thailand. Bangkok: Health Systems Research Institute, Thailand Health Research Institute and Food and Drug Administration.
[3] Tangcharoensathien V (1996). *Thuka, Samuthai* and Health Security in Thai Health Systems. Bangkok: Health Systems Research Institute.

commodities (drugs and medical supplies) and services call for an urgent requirement of capacity in policy research in this allied field.

4. One of the major determinants of the fragmented Thai health systems are the limited capacity in health policy research and **evidence base health policies.** The Ministry of Public Health focused in the past 30 years on its ever increase in service capacity and related para-medics production at all levels (tambon, district and provincial). There is limited capacity in policy research and evidence base policy formulation either in the Ministry of Public Health, NESDB or universities. Further, there has never been a clear evidence based health policy statement by any political parties.

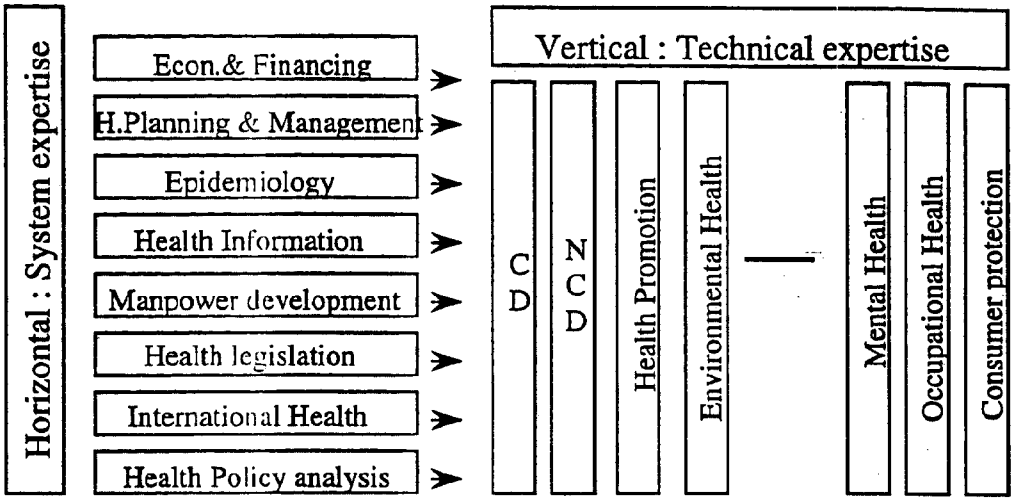
5. Capacity in health policy and systems research and the interaction between research and evidence based policy formation is urgently required in the 21st century to meet the new challenges. This is in congruent with the priority taken by the new WHO leadership, one of the nine clusters on **Evidence and Information for Policy** (EIP) was established recently at WHO Headquarter.

6. The six-year experience of Health Systems Research Institute, as a research-funding agency, found that capable and committed health system researchers are really scarce. Very few new faces showed up in the past years. Similar experience was realized by Thailand Research Fund (TRF) that research grant is not really a problem, but high quality and committed researchers become a greater problem. This was reflected by TRF initiatives on Senior Research Scholar Program, the Golden Jubilee Ph.D. Training Program, and post-doctoral research re-entry grant program.

7. This lack of capacity on the system expertise (which cuts across the technical area) renders the weakness of the more abundant vertical technical expertise (content expert).

8. How can we achieve the goal of health systems development and systems reform without a strong partnership with stakeholders and a critical mass of researchers who are capable both in policy research and the interface with policy domains? The strength of health system capacity needs both horizontal and vertical expertise woven in a strong meshwork. **(Figure 1)**

Figure 1 Strengthening of horizontal expertise in support of Technical areas



9. Although there is a number of success stories in evidence based policymaking. These could hardly meet the overwhelming current and future health systems challenges. To name a few, policies towards health care delivery, private sector, technology acquisition and distribution

CRITICAL ANALYSIS OF VARIOUS STAKEHOLDERS

The Ministry of Public Health community

10. Health Policy and Planning Bureau, Rural Health Division and Provincial Hospital Division and five other major technical Departments who commands most of the MOPH resources are major players in health policy formulation arena. Unfortunately, in addition to limited capacity in evidence based policy formulation, there is a few number of receptors and continuous focal points (due to recent rapid mobility of staff) to act as an interface between research and policy formulation. Its strength is the proximity to significant policy questions and its legitimacy in policy suggestions, program and budget orientation. However, it is not uncommon that policies are more guided by intuition and experience than evidence. This approach is not so acceptable in the evidence era, information age and competitive world.

11. One classical example is that during the economic boom and the rampant growth of private sector with several positive and negative consequences on efficiency, equity and quality of care; there is a limited expertise in the Ministry of

Public Health, equipped with knowledge and skill on how to deal with and how to lay down policy guidelines as well as regulatory function for this industry. There is a very limited capacity in effective dialogue with the Board of Investment, the Stock Exchange of Thailand and Private Hospital Association on policy towards private hospital industry.

12. There is a trend of diminishing technical expertise in CDC Department and no systematic grooming of new cohort of experts in various fields replacing the retiring group. Most of key staff are the products of Field Epidemiology Training Program (FETP). Medical Science Department also suffers from brain drain of expertise in its fields.

13. The most crucial limitation could be the culture of not using evidence in policy formulation, both by the bureaucrats and the politicians. Importantly, there is no systematic manpower development in health policy research in the Ministry of Public Health for decades. In contrast, other Ministries such as Finance, Foreign Affairs and the Bank of Thailand have traditionally a systematic manpower development at doctoral and post-doctoral degrees. The belief that Ministry of Public Health does not require technical expertise at the doctoral level; and that expertise could be transferred from academic in universities was unrealistic, causing countless damages and interrupted critical manpower development for more than a decade.

Academic and other communities

14. There is a great distance and alienation between academic and real life health systems problem, crucial and contemporary health issues and policy questions, although there is a promising trend of closer linkage with the Ministry of Public Health. Technical expertise is too remote to critical policy questions, whereas those in proximity to policy questions are technically incapable.

15. One major limitation is that faculty members are overwhelmed by teaching load and little efforts were placed on researches (in particular policy researches) and publications. Long term research commitment is usually jeopardized by higher income from consultancy services. Then, it is too demanding and also there is a severe constraint for academician to directly influence policy. There are complicated political context and cultural issues in policy formulations.

16. Other agencies such as the National Economic and Social Development Board, civic organizations and public media are also in severe shortage of capable health

policy and systems research. In conclusion, there is a severe limited capacity on policy research and evidence based policymaking at all levels and organizations.

EXPERIENCES IN CAPACITY STRENGTHENING

17. A classical and positive experience was drawn from FETP organised by the Epidemiology Division in the last 19 years, spear-headed by Drs Sujarti Jetanasen and Prayura Kunasol. There are three main functions in the Epidemiology Division – integrated services, research and training. Disease surveillance, outbreak investigation and control serve as strong platforms for the field practical training. Trainee are required to do their own researches. Thailand got the highest reputation in disease surveillance system and FETP is to be highly commended. The 18 cohorts of FETP trainee contribute greatly to the Ministry of Public Health. FETP is not merely an academic training, but rather field based practical training.

18. Crucial lesson drawn is "the tripod of capacity building" – (i) training - systematic, theoretical course works, (ii) research and (iii) real life situation (practical fieldwork). However, FETP is also facing problems of staff capacity building.

19. World Health Organization Special Program on Training and Research in Tropical Diseases (TDR) provided not less than 50 Ph.D. scholarships to Thailand in the past 25 years. This critical mass contributed greatly in the area of tropical disease research and training, as seen at Mahidol Faculty of Tropical Medicine.

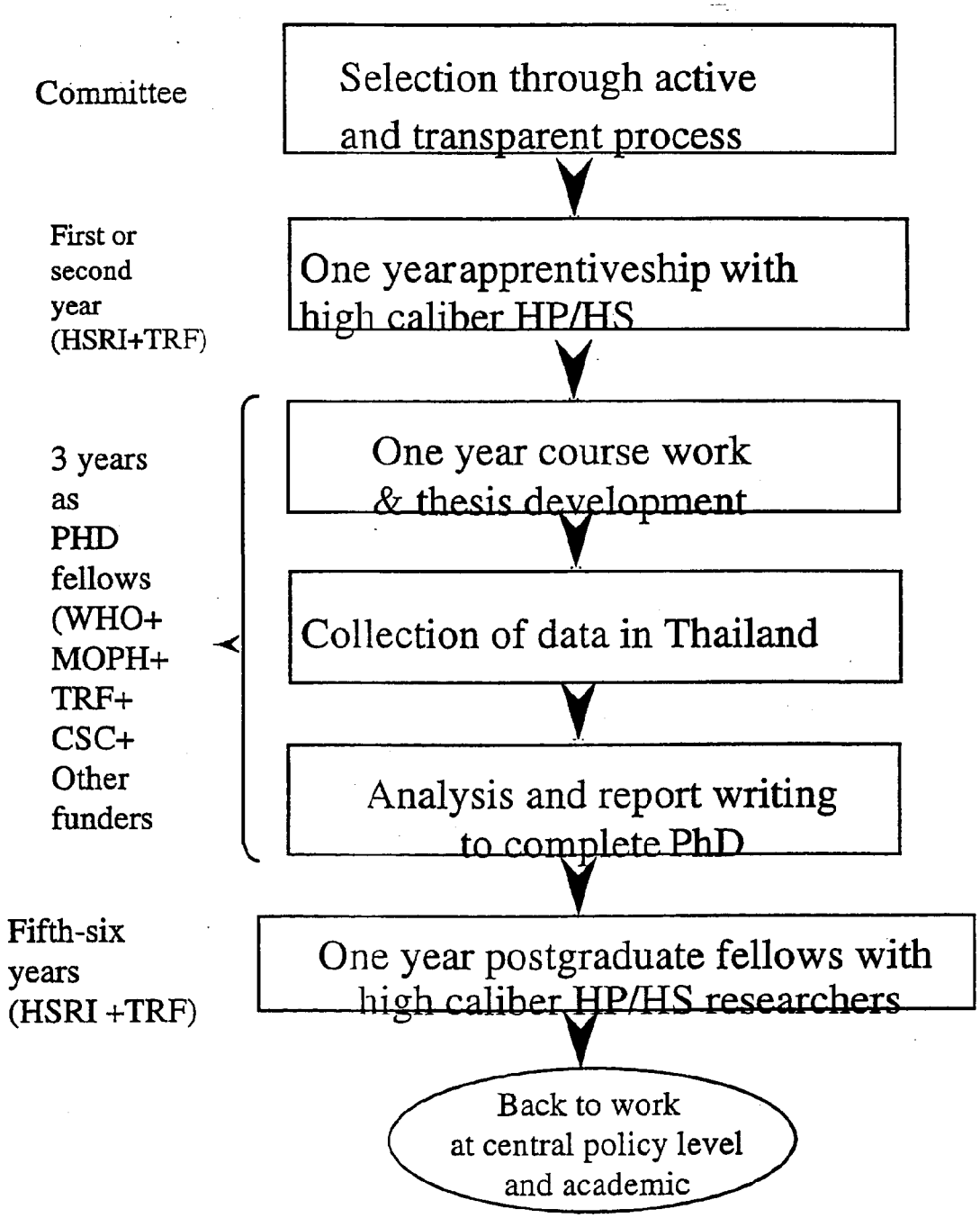
20. The Civil Service Commission (CSC) in collaboration with related ministries, providing Ph.D. scholarships for several decades, faced its major weakness of selecting appropriate candidates based on competitive examination alone. There is no process of pre-training session to orientate the scholars to health system issues and problems.

21. Moreover, there is a problem to maximize (or even optimize) the use of post-graduate trainees, as most of post-graduate domestic course are mainly taught courses. Trainee are not adequately equipped and orientated towards policy research. Inappropriate placements of post-graduate scholars usually hinder the expression of their potential capacities. Our problems are circumscribed by the recruitment of qualified trainee, little research orientation of curriculum and finally the proper placements of graduates.

OBJECTIVES

22. General Objective: To strengthen the capacity in Health Policy and Health Systems Research in support of Health Systems Development and Reforms.

Figure2 Process of capacity strengthening in health policy and systems research



Specific Objectives

23. To create a critical mass of highly competent and committed multidisciplinary researchers in Health Policy and Health Systems Research, to serve at the national level through an intensive and targeted scholarship program for local and international post-graduate trainings.

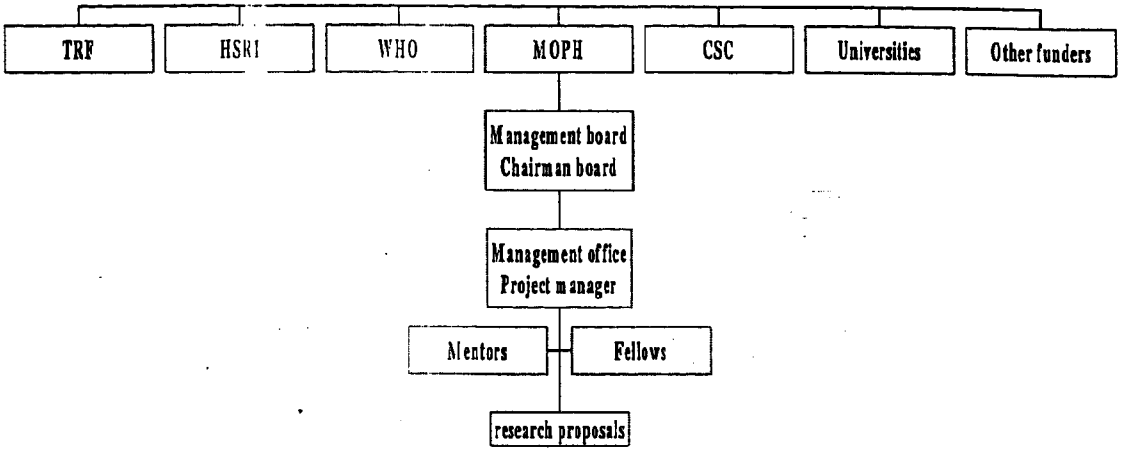
24. To develop a sustainable mechanism for the continuous development of a critical mass of talent and committed health policy and health systems researchers.

METHODS

Critical mass development **(figure 2)**

25. An ample number of (1) highly competent, (2) long term commitment to research career, (3) young – preferably not more than 30 to 35 years of age, (4) Thai public health professionals, (5) with at least three-year experience in the Thai health care system will be recruited each year. This is done through a transparent process of active searching and screening by a Steering Committee comprised of respectful figures, for example, from the Ministry of Public Health, universities, Civil Service Commission Office (CSC) funding agencies such as TRF, Health Systems Research Institute, World Health Organization, Health Care Reform Project, etc. The Chairman of the Board of Health Systems Research Institute appointed the Steering Committee. Health Systems Research Institute is designated as the secretariat of this committee; as well as the management office of this program. (Figure 3)

Figure 3: Project management structure



26. This group of candidates will work as researchers under close supervision and intensive interactions with high caliber researchers (so called mentors) in various institutes for at least one to two years. Grants for research affiliated with mentors will be supported by Health Systems Research Institute, World Health Organisation country budget or TRF, on a project base. This apprenticeship aims to develop the following skills:

- A systematic conceptual skill
- A thorough understanding of the contemporary health care system in Thailand and trend of systems reforms
- Learning skill including reading, listening, writing and presentation
- Computer skills
- English proficiency
- Good time management

This group of candidates are expected to be the future key players in health policy and health systems research. External evaluators appointed by the Steering Committee together with the mentors will evaluate candidates their attitude towards health policy research, commitments and other required skill before placement for Ph.D. training in country or abroad.

27. Based on the external evaluator report, the Steering Committee will decide the most outstanding candidates for post-graduate training at Ph.D. level either in Thailand or international institutions in research and training in health policy and health systems.

28. There is a need to translate the notion of "Health Policy and Systems Research" into an operational level and practical manner. We would propose for future Steering Committee consideration the following areas such as: pharmaceutical economics, hospital quality and accreditation, hospital economics, equity issues, health financing, manpower policy and economics, health planning and management, health information, health legislation. We felt that an exclusion list should be made in the future, so that this project is more and more focusing on the weakest facet.

29. Health Systems Research Institute and TRF are responsible to support the management in actively search for mentors in various areas as decided by Steering Committee in Paragraph 27.

30. It is compulsory that trainee must pursue research based Ph.D. training, not a taught course orientation or domination. His/her research leading to a Ph.D. must be done in Thailand, not in developed countries. Ph.D. thesis by analyzing database of developed countries does not help understand more on Thai health system and is not acceptable. Research grant for a Ph.D. thesis will be supported by Health Systems Research Institute and/or TRF.

31. If there are six areas; each area requires a critical number of 10-12. The total requirement is 60 to 72 in six years. Giving a failure rate of 20%, then the number should be 75 to 90 in six years. An annual average is 12-15 persons.

32. This critical mass are expected to work at the national level policy research and formulation mechanism, in different technical Departments of the Ministry of Public Health, universities, research institutes, etc. At this juncture, we could not afford them to work at district or provincial level, or in the private for profit sector. They will create wisdom on important health care reform issues and develop into a feasible health policy.

33. Funding for a Ph.D. either in domestic or international universities will not exceed the period of 3 years. This is to stimulate high success completion rates. For a Ph.D. in Thailand, there is an opportunity to be supported by the TRF Golden Jubilee program. However, there is an urgent need for universities in Thailand to develop Ph.D. training in health policy and systems research and approved by TRF.

Mechanisms to sustain and further development

34. Re-entry mechanism, initially after a Ph.D., they will be placed to work with highly competent and respected senior researchers or health administrators for 1 to 2 years, after which they will be placed more permanently at appropriate departments, concerned universities or research institutes. They are bound to serve the public interest.

35. Continuous and sustainable academic fora will be created, e.g., international publications, research and policy interfacing processes, annual workshop, brainstorming sessions on important health policy issues and regular journal clubs.

36. The critical mass of 75 to 90 health policy researchers is adequate and strong enough for future domestic and international manpower development in related areas.

EXPECTED RESULTS

37. Capacity in health policy research and evidence based policy development is strengthened at the national level. As a result, health system is reoriented towards equity, efficiency and quality. This critical mass will further serve at mentors when they are stronger and also trainers for provincial health administrators.

38. Thailand will become a leading country in the region in terms of health policy research and health systems reform. This critical mass can serve as a regional training centre in collaboration with world leading institutes.

39. It is expected that this critical mass will be the core of academic capacity for future local development of high capacity health policy and systems researchers.

TIME FRAME

40. Approval of the proposal by various funding agencies,

- Health Systems Research Institute Board in April 1999 as funding supports and secretariat of this project
- The Ministry of Public Health adopts as the national master plan by end April 1999 and further dialogue with CSC Office.
- Adoption by CSC Office on the principle and practices by May 1999

- Adoption by other partners such as TRF, World Health Organization - country program within May 1999,
- Seek additional funding supports from World Health Organization at Regional level and head quarter, others bilateral such as JICA, USAID, AUSAID, the British Council. IDRC/CIDA, SIDA, etc. and multi-lateral such as EU, the World Bank.

41. Appointment of Steering Committee represented by reputable figures and potential funders by early May 1999.

42. Active search for mentors and recruitment of candidates by the Committee starts in May 1999 and every January during the project life for subsequent cohorts.

43. Start apprenticeship training with mentors on a project base by June 1999 and continuously training of subsequent cohorts.

44. Evaluation of the first cohort by April 2000 and 2001; placement for Ph.D. in September 2000 and 2001 respectively. However, few existing candidates may be placed in September 1999.

45. Recycle the process in the paragraphs 43 to 45 on an annual basis.

46. SUMMARY BUDGET REQUIREMENT (1999 - 2005)

1. HSRI and TRF budget to support 180 research projects during 1999-2008 the amount of 90 million Baht (Table 2).
2. Multiple funding sources for Ph.D. scholarship abroad for 60 persons requires 4.794 million USD for 8 years during 2000-2007 (Table 4).
3. TRF: Golden Jubilee Ph.D. scholarship about 15 to 30 persons, the budget requirement is 1.5 to 2 million per one Ph.D., inclusive of tuition fee and research supports. The total budget requirement is 26.25 to 52.5 million Baht.
4. Budget earmarked by Health Systems Research Institute as the secretariat of the Project for project management at 10% of 90 million Baht worth of 180 research projects, 9 million during 1999-2008.
5. It must be clarified here that HSRI does not handle the scholarship budget, as it is the sole responsible of each particular agency to handle the process according to its own rule and procedure. This project facilitates the process of selecting right persons and prepare

6. Summary table of budget requirements.

	Outputs	Budget requirement	Sources	Note
Research grants	180 projects * 0.5 million / project	90 million Baht	HSRI/TRF	See table 2
Scholarship for Ph.D abroad	60 persons * 79,900 USD	4.794 million USD	Multiple sources: WHO/ CSC/ other bilateral	See table 4
Scholarship Ph.D. Thailand	15-30 persons * 1.7 million Baht	26.25 to 52.5 millio Baht	TRF Golden Jubilee program	
Project management cost	10% of 90 mil Baht research projects	9 million Baht	HSRI	

APPENDIX: BUDGET JUSTIFICATIONS

Table 1 Research grant requirement for each candidate.

Research grant requirement	Budget for research projects (Baht)				
	1st year	2nd year	3rd year	4th year	5th year
Pre-training	500,000				
Ph.D. training (in country/abroad)		1st yr Ph.D.	2nd yr Ph.D.	3rd yr Ph.D.	
Research leading toward Ph.D. thesis			500,000		
Post-training research					500,000

Table 2 Estimation of HSRI and TRF research supports (Million Baht)

Cohort	Number of researchers	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
1st	10	5	0*	5	0	5					
2nd	10		5	0*	5	0	5				
3rd	10			5	0*	5	0	5			
4th	10				5	0*	5	0	5		
5th	10					5	0*	5	0	5	
6th	10						5	0*	5	0	5
Total	60	5	5	10	10	15	15	10	10	5	5
		70 mil Baht (140 projects)							20 mil Baht (40 projects)		
		90 million Baht (180 projects)									

Note: 1. Although this is a six year project (2000-2005) in term of Ph.D. training, commitment for research expenses will start in 1999 and end by 2008. Then the project life is totally 10 years.

2. * Denote the first year of a three year Ph.D. training programme.

Table 3 Basic information of Ph.D. training abroad

Cost breakdown	Expenditure for a Ph.D. training in UK or USA (USD)			
	1st year	2nd year	3rd year	Total per person
Tuition fee	15,300	15,300	15,300	45,900
Living allowance	13,600	0	13,600	27,200
1 rd-trip air fare	900	0	900	1,800
Other	2,000	1,000	2,000	5,000
Total	**31,800**	**16,300**	**31,800**	**79,900**

Note: Based on CSC Office unit cost.

Table 4 Estimation of budget for scholarships

Year	Cohort	Persons	Budget (USD)								
			1999	2000	2001	2002	2003	2004	2005	2006	2007
2000	1st	10		318,000	163,000	318,000					
2001	2nd	10			318,000	163,000	318,000				
2002	3rd	10				318,000	163,000	318,000			
2003	4th	10					318,000	163,000	318,000		
2004	5th	10						318,000	163,000	318,000	
2005	6th	10							318,000	163,000	318,000
Total		60*	0	318,000	481,000	799,000	799,000	799,000	799,000	481,000	318,000
			3,995,000							799,000	
			4,794,000 USD								

Note: * another 15 to 30 Ph.D. will be produced through the TRF Golden Jubilee Program.