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The Kingdom of Thailand Health System Review

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Preface

The Health Systems in Transition (HiT) profiles are country-based reports that provide a detailed description of a health system and of policy initiatives in progress or development. HiTs examine approaches to the organization, financing and delivery of health services and the role of the main actors in health systems; describe the institutional framework, process, content and implementation of health and health-care policies; and highlight challenges and areas that require more in-depth analysis. HiT profiles seek to provide information to support policy-makers and analysts in the development of health systems. They are building blocks that can be used:

- to learn in detail about different approaches to the organization, financing and delivery of health services and the role of the main actors in health systems;
- to describe the institutional framework, the process, content and implementation of health care reform programmes;
- to highlight challenges and areas that require more in-depth analysis;
- to provide a tool for the dissemination of information on health systems and the exchange of experiences of reform strategies between policy-makers and analysts in different countries; and
- to assist other researchers with more in-depth comparative health policy analysis.

Compiling the profiles poses a number of methodological problems. In many countries, there is relatively little information available on the health system and the impact of reforms. Due to the lack of a uniform data source, quantitative data on health services is based on a number of different sources, including the World Health Organization (WHO), national statistical offices, the Organisation for Economic Co-operation and Development (OECD) health data, the International Monetary Fund (IMF), the World Bank, and any other sources considered useful by the authors. Data collection methods and definitions sometimes vary, but typically are consistent within each separate series.

The HiT profiles can be used to inform policy-makers about experiences in other countries that may be relevant to their own national situation. These profiles can also be used to inform comparative analyses of health systems. This series is an ongoing initiative and material is updated at regular intervals. In-between the complete renewals of a HiT, the APO has put in place a mechanism to update sections of the published HiTs, which are called the “Living HiTs” series. This approach of regularly updating a country’s HiT ensures its continued relevance to the member countries of the region.

Comments and suggestions for the further development and improvement of the HiT series are most welcome and can be sent to apobservatory@wpro.who.int. HiT profiles and HiT summaries for Asia Pacific countries are available on the Observatory’s website at http://www.wpro.who.int/asia_pacific_observatory/en/.

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List of abbreviations

45q15	adult mortality (probability of dying between ages 15–59) per 1000 population
ACEI	ACE inhibitors
ACSC	ambulatory care-sensitive conditions
ADR	adverse drug reactions
AEC	ASEAN Economic Community
AHB	Area Health Board
AIDS	acquired immune deficiency syndrome
AMI	acute myocardial infarction
ANC	antenatal care
APN	advance practice nurse
APO	Asia Pacific Observatory on Health Systems and Policies
ARB	angiotensin-2 receptor blockers
ART	antiretroviral treatment
ASDR	age-standardized death rate
ASEAN	Association of Southeast Asian Nations
BCG	Bacillus Calmette–Guérin (tuberculosis vaccine)
BORA	Bureau of Registration Administration
CAM	complementary and alternative medicine
CEO	Chief Executive Officer
cf.	compare
CGD	Comptroller General Department
CI	concentration index
CNS	clinical nurse specialist(s)
COPD	chronic obstructive pulmonary disease
CPD	continuous professional development
CPG	Clinical Practice Guideline
CSMBS	Civil Servant Medical Benefit Scheme
CT	computed tomography
CUP	contracting units for primary care

CVA	Cardiovascular Accidents
DALY	disability-adjusted life year
DMH	Department of Mental Health (MOPH)
DMSc	Department of Medical Sciences (MOPH)
DODC	Department of Disease Control
DOH	Department of Health
DRG	diagnosis-related group
DTAM	Department for Development of Thai Traditional and Alternative Medicine
DTP	diphtheria, tetanus and pertussis
DUE	drug-use evaluation
ED	essential drugs
EM	Emergency Medicines
EMIT	Emergency Medical Institute of Thailand
EMS	Emergency medical services
EPI	expanded programme on immunization
ESRD	end-stage renal disease
FCTC	Framework Convention on Tobacco Control
FDA	Food and Drug Administration
GDP	gross domestic product
GERD	gastro-oesophageal reflux disorders
GGE	general government expenditure
GGHE	general government health expenditure
GMP	Good Manufacturing Practice
GNI	gross national income
GPO	Government Pharmaceutical Organization
HAI	Healthcare Accreditation Institute
HCS	Health Card Scheme
HIA	Health Impact Assessment
HIS	health information system
HiT	Health Systems in Transition
HITAP	Health Intervention and Technology Assessment Program
HIV	human immunodeficiency virus
HPV	human papilloma virus
HRH	human resources for health
HSRI	Health System Research Institute

HTA	health technology assessment
HWS	Health and Welfare Survey
ICD	International Classification of Disease
ICER	incremental cost–effectiveness ratio
ICF	International Classification of Functioning, Disability and Health
ICT	information and communications technology
ICU	intensive care unit
ID	identity / Identification
IHME	Institute for Health Metrics and Evaluation
IHPP	International Health Policy Program
IMR	infant mortality rate
KI	Kakwani Index
LGO	local government organization
LHF	Local Health Fund
LOS	length of stay
LTC	long-term care
MCH	maternal and child health
MDG	Millennium Development Goal
MMR	maternal mortality ratio
MOF	Ministry of Finance
MOL	Ministry of Labour
MOPH	Ministry of Public Health
MP	Member of Parliament
MRI	magnetic resonance imaging
MSDHS	Ministry of Social Development and Human Security
MWS	Medical Welfare Scheme (low income scheme)
NCD	noncommunicable disease(s)
ND	not determined
n.e.c.	not elsewhere classified
NED	nonessential drugs
NEP	National Office for Empowerment of Persons with Disabilities
NESAC	National Economic and Social Advisory Council
NESDB	National Economic and Social Development Board
NHFDC	National Health Financing Development Committee

NHFDO	National Health Financing Development Office
NGO	nongovernmental organization
NHA	National Health Assembly, National Health Account
NHC	National Health Commission
NHCO	National Health Commission Office
NHSO	National Health Security Office
NHSRC	National Health System Reform Committee
NHSRO	National Health System Reform Office
NLEM	National List of Essential Medicines
NMEF	National Medical Education Forum
NSAID	non-steroidal anti-inflammatory drugs
NSO	National Statistical Office
OECD	Organisation for Economic Co-operation and Development
OOP	out-of-pocket (payment)
OPD	outpatient department
OPDC	Office of Public Sector Development Commission
OPV	oral polio vaccine
OTC	over-the-counter
PAO	Provincial Administration Organization
Pap	Papanicolaou (smear)
PC	Position Classification
PDR	People's Democratic Republic
PDRC	People's Democratic Reform Committee
PHC	primary health care
PHO	Provincial Health Office
PNC	postnatal care
PPP	purchasing power parity
PWD	people with disability
PWTN	persons awaiting proof of Thai nationality
R&D	research and development
RAMOS	Reproductive Age Mortality Study
REF	reference
RIC	Rehabilitation Impairment Category
RRT	renal replacement therapy
RUM	rational use of medicine
SDH	social determinants of health

SES	(household) socioeconomic survey
SHI	Social Health Insurance
SPC	Survey of Population Change
SSO	Social Security Office
STEMI	ST elevated myocardial infarction
TAO	Tambon Administration Organization
TDRI	Thailand Development and Research Institute
ThaiHealth	Thai Health Promotion Foundation
THE	total health expenditure
TRIPs	Trade-Related Aspects of Intellectual Property Rights
TRT	Thai Rak Thai (political party)
TT2	tetanus-toxoid vaccine (2nd dose)
TTM	Thai traditional medicine
U5MR	under-five mortality rate
UCS	Universal Coverage Scheme
UHC	universal health coverage
UNICEF	United Nations Children's Fund
VHV	village health volunteer(s)
VMI	vendor-managed inventory system
vs	versus
WCS	Workmen's Compensation Scheme
WHO	World Health Organization
WHR	World Health Report
WTO	World Trade Organization
VCT	voluntary counselling and testing

Abstract

Since the 1970s, continued political commitment to the health of the population has resulted in significant investment in health infrastructure – in particular primary health care, district and provincial referral hospitals – and the functioning of the health system through increasing the health-care workforce while ensuring rural retention through multiple strategies. Financial risk protection has been applied targeting different population groups and universal health coverage was achieved by 2002.

Extensive geographical coverage of health-care delivery, a comprehensive benefit package free at point of service, and increased capacity of Ministry of Public Health (MOPH) health-care facilities are the main factors that have contributed to improved utilization and benefit, with a minimization of catastrophic health-care expenditure and medical impoverishment. The dominant close-ended payment is cost-effective and supports efficiency. The National Health Security Office has institutional capacity in managing strategic purchasing.

Health reforms have been implemented locally since the 2000s. The sin tax-funded Thai Health Promotion Foundation supports health promotion actions; the National Health Commission convenes National Health Assembly as a platform for participatory public policy formulation; and the Healthcare Accreditation Institute supports quality improvement through local action and accreditation. Innovative reforms have been facilitated by strong national capacity to manage changes and effective implementation.

The remaining challenges are financing and service-provision policies for older people; large gaps in urban primary health care; risks of reliance on general taxation in financing health care during economic downturn; risks of internal migration of health-care professional in response to increased demands for health services by international patients in the context of the 2015 Association of Southeast Asian Nations (ASEAN) Economic Community decided in the ASEAN Concord II in Bali, Indonesia on 7 October 2003; and the adjustment of MOPH in the light of complex health-system governance. The Thai health system has proven its resilience to recent large-scale reform and has responded in a positive way.

Executive Summary

Background

Thailand has gone through demographic and epidemiological transitions, evolving from high fertility, high mortality to low fertility and low mortality. The below-replacement-level fertility rate and low crude mortality have had profound impacts on health- and social-service development and financing which needed to respond to a rapidly greying society.

The health systems context and achievement

Since 1999, the major causes of death are noncommunicable diseases (NCD); the total disability-adjusted life years (DALY) loss from NCD were 58.5%, 64.6% and 75.0% in 1999, 2004 and 2009, respectively, while communicable diseases contributed to 27.7%, 21.2% and 12.5% in the same years. Despite the reduction in DALY loss from communicable diseases, HIV/AIDS was still an outstanding public health problem until the universal antiretroviral treatment became available in 2004, when mortality from HIV/AIDS was dislodged from the top position. The burden from a few preventable causes, such as traffic injuries, ischaemic heart diseases, diabetes and alcohol dependence/harmful use, are still high and challenging.

Despite high performance of maternal and child health outcomes, adult mortality was not performing well where decline in adult mortality was stagnated. Some remaining challenges are road traffic injuries and excessive use of alcohol despite containment efforts. Despite advancement in two tobacco control acts legislated well before the ratification of the Framework Convention on Tobacco Control (FCTC), reduction in the prevalence of tobacco has dropped significantly but became slower in recent years, for which the increase in retail price should be increased to keep pace with the increase in disposable income.

Despite the high level of contraceptive prevalence and equitable access to reproductive health services, a few challenges remain such as unmet contraceptive needs among unmarried young couples and unprotected

sex among young adolescents, resulting in HIV/AIDS and unplanned pregnancies, especially among teenagers.

The Ministry of Public Health (MOPH) is the national health authority responsible for formulating, implementing, monitoring and evaluation of health policy. Such role has changed as recently several autonomous health agencies were established through legislation, notably the Health Systems Research Institute (1992), the Thai Health Promotion Foundation (2001), the National Health Security Office (2002), the National Health Commission Office (2007), the Healthcare Accreditation Institute (2009). MOPH and these independent agencies form a complex interdependent governing structure where non-state actors and civic groups also play an increasing role. The National Health Commission Office is mandated to convene the annual National Health Assembly (NHA), ensuring participatory engagement by all government and non-state actors in formulating health policy through NHA Resolutions, where a number of resolutions were further endorsed by the Cabinet Resolution, strengthening the resolutions' legality and enforcement. The advent of National Health Security Office (NHSO) has a major impact in transforming the integrated model where MOPH plays purchaser and service provision role, to NHSO as purchaser and MOPH as a major service provider.

Thailand has a long history of de-concentration of management decision to the Provincial Health Office (PHO) and all public hospitals such as delegating financial power to generate, retain and use revenue according to regulations, subject to regular audits by the Auditor General. The PHO also holds regulatory power, such as licensing and relicensing private pharmacies and clinics, and consumer protection on food, drugs and cosmetics.

The Decentralization Act 1999 requested the MOPH to devolve all public health-care facilities to the local elected government units, health centres to Tambon Administration Organizations, district hospitals to municipalities and provincial hospitals to Provincial Administration Organizations. After a decade, there were only 43 MOPH health centres out of a total of 9768 (0.4%) devolved, as Tambon Administration Organizations' lack of readiness, capacities and funding did not fulfil the criteria for devolution. A shift in government policy and unwillingness of MOPH to devolve are additional factors. The benefit of devolving the current integrated model of district health system (which contributes to

equitable access and systems efficiency) continues to be questioned due to risks of fragmentation.

Significant progress was made on the national household surveys regularly conducted by National Statistical Office, and its uses for monitoring impact of health policies on households and support the estimation of capitation budget for Universal Coverage Scheme. The adoption of the locally innovated Diagnosis Related Group in paying hospitals for admission services by all three public insurance schemes contributed to significant improvement in inpatient clinical data and development of national inpatient dataset, very useful for monitoring outcome of treatment. Capacity in health technology assessment was gradually developed since 2007 and has contributed to inclusion of proven cost effective new medicines into the National List of Essential Medicines and proven cost effective new interventions to be included into the benefit package of Universal Coverage Scheme, for which two other schemes also refer to.

When Thailand achieved universal health coverage in 2002, public expenditure on health significantly increased from 63% in 2002 to 77% of total health expenditure in 2011. While out-of-pocket expenditure reduced from 27.2% to 12.4% of total health spending. A significant increase in General Government Health Expenditure was noted, from 8% to 11% of General Government Expenditure in 2002–2003 to 11% to 13% in 2006–2011. Curative expenditure dominates total health spending, about 70% of total.

Thailand legislated an earmarked sin tax for health promotion, using 2% additional surcharge on tobacco and alcohol excise tax and managed by ThaiHealth Foundation, an autonomous public agency, for campaigning on various key health risks.

By 2002, the entire population was covered by three public health insurance schemes - civil servants and their dependents by the Civil Servant Medical Benefit Scheme (CSMBS), private sector employees by the Social Health Insurance Scheme (SHI) and the rest of the population by the Universal Coverage Scheme (UCS). This resulted in three main public purchasers where purchaser-provider split has been fully implemented; and supply-side financing through annual budget allocation to health facilities was fully replaced by demand side financing. Thailand applied a mix of provider payment methods, though closed-ended payment plays dominant role, notably capitation for outpatient was

applied by SHI and UCS while fee for service is used by CSMBS outpatient payment. Diagnostic Related Group inpatient payment was widely applied by CSMBS and UCS though some variations in its application, and partially applied by SHI.

As a result of strong political commitment to the health of the population, during the 1980s there was a heavy investment in government health-care delivery systems: health centres, district and provincial hospitals had full geographical coverage in all sub -districts, districts and provinces. Health delivery systems are dominated by the public sector: Public hospitals account for 75% and 79% of total hospitals and beds. Local government almost has no role in primary care and hospital service provision. Most private hospitals are small, with 69% having fewer than 100 beds. Large private hospitals include some hospital chains registered in the stock market, located in Bangkok and offer services to mostly international patients. Private non-profit charity-run hospitals account for a negligible share of beds. The extensive geographical coverage of Ministry of Public Health primary health care (PHC) and public hospital services are the foundation for successful implementation of universal health coverage; especially pro-poor health service utilization and public subsidies.

Thailand is self-reliant in health-care workforce production with high quality standards; the health-care workforce density per 1000 population is slightly above the 2.28 indicative WHO benchmark of doctors, nurses and midwives. To ensure adequate health-care workforce serving rural populations, continued efforts of multiple interventions were applied, such as education strategy by recruiting students from rural background, curriculum reflecting rural health problems, mandatory rural services by all doctors, nurses, pharmacists and dentists graduated since 1972, and financial and non-financial incentives such as social recognition. Task shifting has also been applied throughout, such as nurse practitioners and other specialized nurses, dental health officers and pharmacist assistants. Quality is ensured through national licence examination for all cadres of professionals since 2001, licensing by professional councils, and relicensing for professional nurses every five years, requiring cumulative number of credits of continued nursing education.

As a result of the 2002 public sector reform, the downsizing of the public sector, including health, resulted in the termination of all retirement posts and termination of compulsory services after graduation by nurses and pharmacists (only doctors and dentists maintain), as there were no available posts for their employment. Nurses and pharmacists become

contract workers paid by hospital revenue, not a civil servant. This has had negative ramifications on health-care workforce morale in the whole systems. Political pressures exerted by contracted health personnel sometimes have resulted in reactive reforms approved ad hoc by the cabinet, such as the approval of new posts.

Strong institutional capacity in strategic purchasing by National Health Security Office resulted in improved equitable access to certain high cost interventions, such as cataract, open-heart surgery, Renal Replacement Therapy, and antiretroviral therapy. Improvement in the quality of hospital care is indicated by increase in the number of hospitals that meet the standard requirement of Hospital Accreditation and a reduction in hospital standardized mortality. The geographical and public-private maldistribution of health-care workforce can be worsened by government policy on promoting Thailand as a regional medical hub and the 2015 emergence of ASEAN Economic Community, which facilitates free flows of people, goods and services across ten ASEAN countries.

Health systems reforms

Several major health reforms introduced in the 2000s were locally initiated and implemented successfully; international development partners have played a limited influence in agenda settings, policy formulation and financing. Each reform included complex policy processes and context specificity, as well as different levels of influence by various state and non-state actors in shaping them.

The legislation of two tobacco laws before the ratification of FCTC, introducing two percent additional surcharge on tobacco and alcohol excise tax and earmarked to health promotion is a “technocrat driven” initiative led by the Permanent Secretary of the Ministry of Finance in close collaboration with a few health and anti-tobacco champions. Thai Health Promotion Fund, financed by an annual outlay of 3 billion Baht (US\$ 100 million) was established to support a wide range of activities to promote and protect health of population with favourable outcome from external assessments.

Thailand is internationally recognized for its successful implementation of universal health coverage (UHC) in 2002, with a favourable pro-poor outcome. Although the UHC agenda was politically driven, Ministry of Public Health technocrats contributed significantly at the initial phase, to the policy formulation, systems design, monitoring and evaluation,

and fine-tuning of policies; later NHSO took over successful UCS implementations. High level of government support and the extensive geographical coverage of health-care delivery systems, especially at district level, contributed to favourable pro-poor outcomes in terms of health-care utilization, benefit incidence and financial risk protection against catastrophic health-care expenditure and medical impoverishment. The external assessment of the first decade of UHC implementation confirmed these good outcomes.

The advent of National Health Commission Office has a long history of engagement by civil society, until the National Health Act was legislated in 2007. By law, the Office is mandated to convene an annual National Health Assembly, a platform for participatory public policy development engaging state, non-state, political and private sectors on a level ground for evidence based deliberation. Several resolutions endorsed by the National Health Assemblies were endorsed by the Cabinet Resolution. The outcomes of implementation of these Resolutions are mixed, some with good progresses and some without, reflecting different levels of capacity and effectiveness of concerned state actors.

Factors contributing to these locally initiated reforms include a group of champions, mostly MOPH technocrats who are driven by their pro-poor ideology and rural health background, who at the same time also act as “policy entrepreneurs” while working closely with civil society organizations. When windows of opportunity open, these champions liaise with politicians, making political decisions and subsequent some legislations. Also evidence contributes significantly in policy formulation led by Health Systems Research Institutes and other partners although academia and university have limited contribution to health systems reform.

Health systems performance

Assessments of the Thailand health systems performance against financial risk protection, responsiveness, health outcomes, and efficiency have found favourable outcomes although a few challenges remain.

Financing health care is dominated by general tax revenue and is progressive with respect to population incomes. Direct payment by households has consistently declined while the Government significantly increased spending from tax revenues on public insurance schemes, especially after the Universal Coverage Scheme (UCS) for the majority of

the population in 2001–2002. Achievement in financial risk protection is evident by a noticeable reduction in the number of non-poor households being impoverished by health payment.

Use of the UCS entitlement when using health services has gradually increased and is higher for inpatient than outpatient care. Net public budget subsidy to outpatient and inpatient services for the poorest UCS members was relatively higher than for the richest members. This pro-poor subsidy was driven by service utilization disproportionately concentrated among the economically worse-off, contributed by easy access to district health system contractor network.

Thailand has performed better in terms of maternal and child health as compared with other low- and middle-income countries. Despite good health at low cost, adult mortality rates are not lower than in neighbouring countries, and are actually higher than countries in Central America. Mortality amenable to health care, such as breast and cervical cancers were not adequately abated during the time of economic growth. In addition, hospital admissions with the conditions that could be managed as ambulatory patients have an increasing trend.

Harmonization of the three public insurance schemes has shown slow progress due to a lack of political will and resistance from the CSMBS members and mainly public hospitals who benefit from excessive CSMBS outpatient claims. The National Health Security Act in 2002 for the UCS set a better governance structure where all relevant stakeholders, especially civil society representatives fully engage in the governing board. By comparison, the Social Security Board of the Social Security Scheme is equally represented by employers, employees and the government. The CSMBS can learn from these two schemes on how to improve its governance structure, leading to improved performance in strategic purchasing.

The remaining challenges. A few remaining challenges are worthy of further research and policy attention. In recognition of the demographic and epidemiological transitions, health and social welfare systems should prepare for a long-term care policies, in particular adapting the source of financing and modality of care, (including training of and support to home care), as well as the development of effective interface mechanisms between families and community care and health and other social services.

While rural health services are well established and have shown a significant contribution to UHC goals of equitable access and financial risk protection, by comparison urban health systems are dominated by hospital oriented care, private clinics and hospitals, and lack of effective PHC systems catering chronic NCD. This is compounded by a generally weak role of the Municipality Health system. There is a large room for strengthening urban PHC systems. The feasibility of contracting to qualified private clinics beyond curative to prevention and health promotion services is one approach to such improvements.

Heavy reliance on general tax as a main source of financing health services for UCS and CSMBS, as well as the mandatory one third contribution to SHI by the government, runs the risk of incurring shortfalls especially during the cyclical economic crunch. The UCS budget was affected in Fiscal Year 2015, when the capitation budget was frozen at zero nominal growth, the same figure of Fiscal Year 2014. This has resulted in a reduction in real terms, especially given protection of salaries that have a six percent annual adjustment; overall there has been a net contraction of non-salary operating budget. Key policy choices include devising new sources of funding or reduction of nonessential benefit package such as outpatient care, while safeguarding continuity of treatment of chronic conditions and admission services.

Historically the MOPH was the sole agency responsible for policy formulation, regulation, human resource production (through its own nurse colleges and its affiliate with University for additional production of physicians) service provision, implementation of health programmes and monitoring and evaluation. The MOPH has its bureaucratic structures from central to the most peripheral sub-district health centre. Since the 1990s a few public autonomous agencies have emerged and are assuming a role in health systems governance, such as Health Systems Research Institute and Thai Health Promotion Foundation. In particular the role of National Health Security Office has separated two functions of the MOPH: the MOPH maintains the service provision, and as supply-side financing was curtailed the NHSO assumed management of the health service budget. There has been an unresolved institutional conflicts between the two; however, effective governance mechanisms for collaboration continue to be developed in response to the distinctions between roles of provider and purchaser.

The contributions of the National Health Assembly challenge the traditional public dominance and at times monopoly in policy formulation, not only health but other government sectors, such as Ministry of Commerce on free trade agreement, Ministry of Environment on health impact assessment, Ministry of Industry on total ban of chrysotile asbestos, Ministries of Social Development and Human Security and Education on teen pregnancies. Both public and non-state actors are learning during the last decade on how to adapt into this new environment of participatory public policy formulation. There is a need to document lessons both positive and negative on the function of national health assembly. The National Health Assembly is a practical platform for realizing Health In All Policies.

Lessons learnt. One of the key success factors of health reforms in Thailand is the capacity to generate knowledge supporting policy formulation; equally important is the implementation capacity and government effectiveness. This capacity was systematically built when the Health Systems Research Institute was established in 1992. A critical mass was built up with the close collaboration with external academic and research agencies such as London School of Hygiene and Tropical Medicine, Prince Leopold Institute of Tropical Medicine, Antwerp, Belgium and others. This critical mass was consolidated with the emergence of the International Health Policy Program and the Health Intervention and Technology Assessment Program under the Bureau of Policy and Strategy of the MOPH, and the Health Insurance System Research Office under the HSRI. These partners have worked productively in both knowledge generation and knowledge translation and influencing policies.

Another key success factor is the links between policy entrepreneurs and civil society, which are essential to the success of both upstream and downstream policy development. “The triangle that moves the mountain” proposed by Professor Wasi (2000) describes the three synergistic and interlinked powers: wisdom and evidence generated by the researcher constituencies, civil society movement and public support, and finally involvement of the politicians who make the political decisions. Policy entrepreneurs have played bridging role among the three forces to get the desirable decision. A degree of autonomy and independent accountability framework from the MOPH are important for researcher constituencies.

1 Introduction

Chapter summary

Thailand, a South-East Asian nation, was one of the five Founding Members of the Association of Southeast Asian Nations (ASEAN) in August 1967. Siam was renamed Thailand in 1949; and the absolute monarchy was transformed into a constitutional monarchy after the 1932 democracy Revolution. See map of Thailand (Fig. 1.1) for its geographical location and neighbours in South-East Asia.

Thailand has gone through demographic and epidemiological transitions. In terms of demographics, Thailand has evolved from the status of high fertility and high mortality to low fertility and low mortality, with the fertility level of 1.6 in 2010 being below the replacement level, and the crude mortality being 7.4 per 1000 population. This has had profound impacts on health- and social-service development and financing, which needed to respond to a rapidly greying society.

Epidemiological transition took place well before the evidence on burden of diseases was available in 1999. Since 1999, the major causes of death are noncommunicable diseases (NCD); the total disability-adjusted life years (DALY) loss from NCD were 58.5%, 64.6% and 75.0% in 1999, 2004 and 2009, respectively, while communicable diseases contributed to 27.7%, 21.2% and 12.5% in the same years. Despite the reduction in DALY loss from communicable diseases, HIV/AIDS was still an outstanding public health problem until the universal antiretroviral treatment became available in 2004, when mortality from HIV/AIDS was dislodged from the top position. The burden from a few preventable causes, such as traffic injuries, ischaemic heart diseases, diabetes and alcohol dependence/harmful use, are still high and challenging.

Despite high performance of maternal and child health outcomes, adult mortality is still high given the socioeconomic and health systems development – a levelling of the decline in adult mortality was observed.

Despite advancement in two tobacco control acts legislated before the ratification of the Framework Convention on Tobacco Control (FCTC), reduction in the prevalence of tobacco has slowed in recent years, for which the increase in retail price should be increased in line with the increase in disposable income (increase in cigarette prices is an extremely effective tool for tobacco control). In effective tobacco control strategies, governments should impose tax increases or ban tobacco advertising and sponsorship (Blecher & Walbeek, 2004).

Despite the high level of contraceptive prevalence and equitable access to reproductive health services, a few challenges remain such as unmet contraceptive needs among unmarried young couples and unprotected sex among young adolescents, resulting in HIV/AIDS and unplanned pregnancies, especially among teenagers. Teen pregnancies are an outcome of inequitable social structure, and have negative impact on the health of the teens and their babies.

1.1 Geography and socio-demography

Thailand, formerly known as Siam, is located in the centre of mainland South-East Asia at latitude 5°30' N to 20°30' N and longitude 97°30' E to 105°30' E. Its shape looks like an ancient axe. Thailand is bordered on the west and north-west by Myanmar; on the north-east and east by Lao People's Democratic Republic (Lao PDR) and Cambodia; and on the south by the Gulf of Thailand, Peninsular Malaysia, the Andaman Sea and the Strait of Malacca. In total, the borders extend to about 8031 km (4990 miles) (Fig. 1.1). The country covers an area of 513 115 km² (198 115 square miles), making it the world's 51st-largest country in terms of total area. It is slightly smaller than Yemen and slightly larger than Spain. It is the third-largest country in South-East Asia, after Indonesia and Myanmar. The capital city of Thailand is Bangkok or "Krung Thep".

In terms of geographical area, Thailand is divided by the Ministry of Interior into four regions: Central, Northern, Southern and Northeastern. The Northern region is the mountainous area including the ranges of Daen Lao, Luang Phra Bang and Phetchabun in the east, and Thanon Thongchai in the west. The Southern region, which looks like the shaft of an ancient axe, covers the narrow Kra Isthmus and Andaman Sea and Gulf of Thailand where the natural resources and tourism sectors are dominant. The Northeastern region occupies the highland area called the Korat Plateau and the plains along the Mun and Chi rivers. It is bordered to the east by the Mekong River. The Central, most populous, region

consists of the fertile plains surrounding the Chao Phraya River (basins of the Chao Phraya River) and is the country's rice basket.

There are three climate zones in Thailand, tropical rain, tropical monsoon, and seasonal tropical grassland or savannah. The tropical rain climate covers the coastal areas of the east (including some of the Central region) and the south with heavy rainfall and there is tropical rainforest. The tropical monsoon climate is found in the south-western and south-eastern coastal areas. These areas are hit by monsoons and have very high average annual rainfall. The seasonal tropical grassland or savannah is the typical climate found in most regions of Thailand, especially Central, Northern and Northeastern regions. Heavy rains in the south-west monsoon season and dryness in the cold season are common in this type of climate. Both temperature and humidity are high in Thailand, with average temperature in the range 24–33°C (75–92°F).

The Thai population is homogeneous. An overwhelmingly large majority of population (96%) is of Thai ethnicity. The rest are Chinese, Malay, Khmer, Mons, and other minorities including hill tribes. The country's official language is Thai. Buddhism is the main religion (93%). There were approximately 2.1 million migrants in Thailand in 2010.

Figure 1.1 Map of Thailand



Source: United Nations Cartographic Section
(<http://www.un.org/Depts/Cartographic/map/profile/thailand.pdf>)

Table 1.1 Trends in population/demographic indicators, selected years

	1970	1980	1990	2000	2010
Total population (millions) ^a	34.427	44.824	54.548	60.916	63.827 ^b
Population, female (% of total) ^a	50.1	50.2	50.4	50.7	51.2 ^b
Population ages 0–14 (% of total) ^a	45.1	38.3	29.2	24.4	19.6 ^b
Population ages 65 and above (% of total) ^a	3.1	3.6	4.7	6.3	8.9 ^b
Population ages 80 and above (% of total) ^a	0.5	0.5	0.8	1.0	1.7 ^b
Population growth (average annual growth rate, %) ^a	3.1	3.0	2.2	1.2	0.5 ^b
Population density (people per km ²) ^a	67.1	87.4	106.3	118.7	128.5 ^b
Fertility rate, total (births per woman) ^d	5.6	3.4	2.1	1.7	1.6
Birth rate, crude (per 1000 people) ^d	37.8	26.3	19.1	14.7	12.1
Death rate, crude (per 1000 people) ^d	9.7	6.7	5.0	6.3	7.4
Age dependency ratio (population 0–14 & 65+: population 15–64 years) ^a	92.9	72.0	51.3	44.2	39.9
Distribution of population (rural/urban, %) ^a	86.8/13.2	83.0/17.0	81.3/18.7	68.9/31.1	56.6/43.4
Proportion of single-person households (%) ^a	5.0	3.4	5.5	8.7	12.6
Adult Literacy rate (%) ^a	78.6	87.2	92.7	90.8	93.5

Notes:

b Does not include 2.1 million people who were temporary residents

c Include all temporary residents.

Source: a NSO(Undated-b,Undated-c,Undated-d, 2002, 2012), d WorldBank(2013).

The population growth rate slowed from 3% in 1970 (population 34.4 million) to 0.5% in 2010 (population 63.8 million), as a result of an effective family planning programme since the 1970s. With a constant 3% annual population growth, the population would have reached more than 100 million by 2010.

Demographically, there were slightly more females than males (51% cf. 49%). The percentage of the population aged 0–14 decreased from 45.1% to 19.6% during 1970–2010, while the percentage of people aged 65 years

and over increased continuously, almost tripling from 3.1% in 1970 to 8.9% in 2010. The oldest population (80 years old and over) had tripled over the 40 years, from 0.5 million in 1970 to 1.7 million in 2010. It can be noted that the population of Thailand has been ageing rapidly over the last half century due to declines in both fertility and mortality. The total fertility rate declined from 4.9 births per woman in 1985–1986 to 1.5 in 2005–2006, along with a declining in birth rate.

As a result of population growth, the population density increased from 67.1 people/km² in 1970 to 128.5 people/km² in 2010. The proportion of the rural population that resides in non-municipality areas decreased from 86.8% in 1970 to 56.6% in 2010. Rapid urbanization was noted, from 18.7% in 1990 to 43.4% in 2010, due to the reclassification of all sanitary districts (once categorized as rural areas) as municipality areas in 1998 by the Ministry of Interior.

Though the overall age dependency ratio has been declining (Table 1.1), the old-age dependency ratio has been increasing while the child dependency ratio has been decreasing. As Thailand became a rapidly ageing society (UNFPA Thailand, 2011), the change in the dependency ratio from child dependants to elderly dependants has shifted the burden on the working age population: they have fewer children to support, but the number of older people who need support has increased. And the number of older people requiring support from the working age population will continue increasing in the future.

Adult literacy rate in 2010 was high (93.5%) with a small gender gap (male 95.6% and female 91.5%) and a high level of female status in the society measured by labour force participation rate among women (40% in 2010, compared with an average 37% among women in middle-income countries), contributing to a high level of child health status.

1.2 Economic context

Thailand has been one of the fastest growing economies in Asia in general and in South-East Asia in particular, experiencing rapid growth between 1985 and 1996; it is a newly industrialized country and a major exporter. Negative economic growth was observed after the 1997 Asian financial crisis. Thailand took 10 years to recover from the crisis; gross national income (GNI) per capita in 2006 was the same as that in 1997. In 2015, when the Association of Southeast Asian Nations (ASEAN) Economic Community emerges, Thailand will face more challenges and be shown

to be less competitive than other ASEAN members – notably Viet Nam, Lao People’s Democratic Republic and Cambodia, which are more attractive in terms of lower labour cost. Meanwhile, there is huge room to strengthen workforce skills, competencies and knowledge-intensive industries through investment in research and development in order to gradually transition from middle-income traps.

Table 1.2 Macroeconomic indicators, selected years

	1980	1990	1995	2000	2005	2010
GDP per capita (US\$)	710	1480	2720	1930	2560	4150
GDP per capita, PPP (US\$)	1050	2800	4550	4800	6350	8120
GDP average annual growth rate for the last 10 years (%)	5.2	11.2	9.2	4.8	4.6	7.8
Public expenditure (% of GDP)	12.3	9.4	9.9	11.3	11.9	13.0
Tax burden (% of GDP)	–	–	–	–	17.2	16.0
Public debt (% of GDP)	–	–	–	–	27.3	28.8
Value added in industry (% of GDP)	28.7	37.2	40.7	42.0	44.0	44.7
Value added in agriculture (% of GDP)	23.2	12.5	9.5	9.0	10.3	12.4
Value added in services (% of GDP)	48.1	50.3	49.7	49.0	45.8	43.0
Labour force (total, thousands)		32 478	32 068	34 805	37 902	39 384
Unemployment, total (% of labour force)	0.9	2.2	–	2.4	1.3	–
Gini coefficient	44.2	45.3	43.5	42.8	42.3	40.0

Source: World Bank (2012a).

The size of the labour force in Thailand has been increasing over time. The number of registered unemployed reduced to 1.3% in 2005, and the unemployment rate in Thailand is reported at less than 1% at present.

Though the labour force engaged in agriculture sector is large, it has been decreasingly contributing to gross domestic product (GDP), to 12% in 2010, down almost a quarter in 1980. The decreasing contribution of the agricultural sector to GDP was replaced by increasing export of manufactured products, from 28.7% in 1980 to 44.7% in 2010, while the service sector contributed around 40–50% of the GDP over the three decades 1980–2010 (Table 1.2). The main manufacturing industries in Thailand are industrial goods, accounting for 75% of total export values, including automobiles and their assembly, computers and their

components and accessories, chemical products, plastic resin, rubber products, and jewellery. Thailand is becoming a centre for automobile manufacturing for the ASEAN market. Manufacturing facilities are mostly located in Bangkok and on the eastern seaboard, which was designated in 1977 as the long-term site for large-scale small, medium and heavy industries.

Despite favourable economic growth, income distribution has not improved much – the Gini index has never gone below 40. The fiscal space – measured by tax burden of 16–17% of GDP, though not high compared to Organisation for Economic Co-operation and Development(OECD) countries, is slightly higher than the average of middle-income countries – facilitates government spending on health and education. Given the limited fiscal spaces, investment in health infrastructure in the 1980s and 1990s was only possible as a result of political commitment and prioritized investment in district health systems, and temporary slowing down of investment in provincial health infrastructure (Patcharanarumol et al., 2011).

1.3 Political context

After the 1932 democratic revolution, the political system was transformed from absolute to constitutional monarchy. The prime minister is the head of government and the monarch is the head of state. By constitution, there are three independent and counterbalanced powers, the judiciary, the executive and the legislative bodies. The prime minister is the head of executive and legislative branches divided into Senate and House of Representatives. Courts of justice have power under the Constitution of the Kingdom of Thailand and Thai law. Thailand has a multiparty system, and a multiparty coalition rather than a single-party government.

After the 1932 democratic revolution, the first constitution was issued and endorsed, since then there have been 18 charters or constitutions, reflecting a high degree of political instability; after King Rama VII resigned from the throne, there were eight coups d'état and 12 rebellions.

More recently, Thailand's popular constitution, called the People's Constitution, was successfully endorsed in 1997 after the 1992 Bloody May incident. However, the 1997 Constitution was mentioned as being among the root causes of political turmoil.

Under the constitution, the King is a symbol of national identity and unity. However, King Bhumibol has a great deal of respect among the population and moral authority to resolve political crises.

The two leading political parties, in terms of number of elected members of parliament (MPs) in July 2011 election, are Pheu Thai (61 of the total 125) and Democrat (44); the remaining nine parties have fewer than five MPs each. Yingluck Shinawatra (Pheu Thai) was the Prime Minister from July 2011, Thailand's first female prime minister. Under the present constitution, the prime minister must be an MP, but cabinet members do not have to be MPs, chosen from the party list. The legislature can hold a vote of no-confidence against the premier and members of the cabinet if it has sufficient votes.

The 2013–2014 political crisis was a period of political instability in Thailand. Anti-government protests took place between November 2013 and May 2014, organized by the People's Democratic Reform Committee (PDRC), a political pressure group set up and led by former Democrat Party MP Suthep Thaugsuban. The protests eventually resulted in the removal of the incumbent prime minister Yingluck Shinawatra, a coup d'état and the establishment of a military junta.

Deeply divisive in Thailand, the primary aim of the protests was the removal of former Prime Minister Thaksin Shinawatra's influence on Thai politics and the creation of an unelected people's council to oversee reform of the political system. Protesters viewed Thaksin as highly corrupt and damaging to real democracy, although he enjoyed strong support in many parts of Thailand. Political parties allied to Thaksin have won a majority in every election since 2001. Critics said it is "money politics" that buy potential politicians into his parties and pay voters, despite strong vigilance by the Election Commission.

The protests were first triggered by a proposed blanket amnesty bill that would have pardoned several politicians from various charges since 2004, including Thaksin. Opposition from across the political spectrum, including the pro-government Red Shirt movement, caused the bill to be rejected unanimously by the Senate. Anti-government protests continued, however, with demonstrators occupying government offices, blocking major road intersections and holding mass rallies in Bangkok to call for the resignation of Yingluck Shinawatra, the sister of Thaksin, and her Pheu Thai Government.

The resignation of 153 opposition Democrat Party members, in December 2013, resulted in Yingluck dissolving the House of Representatives and calling a general election for 2 February 2014. Voting was disrupted in areas of Bangkok and Southern Thailand by PDRC protesters blocking entry to polling stations, leading to an annulment of the result by the Constitutional Court. Violence, including shootings, bomb attempts and grenades thrown at protesters, led to 28 deaths and over 800 injuries during the course of the protests. On 21 January 2014, Yingluck's Government declared a state of emergency in Bangkok and the surrounding areas, but with little effect.

Yingluck and nine ministers were removed from office by the Constitutional Court on 7 May 2014 over the controversial transfer of a senior security officer in 2011. Supporters of Yingluck and critics argued that the move was politically motivated and an abuse of judicial power. On 20 May 2014, the Royal Thai Army declared martial law throughout the nation, followed two days later by a coup which removed the government and placed General Prayuth Chan-ocha as acting prime minister. The political crisis has raised fears of a violent response from supporters of Thaksin, who feel disenfranchised after the governments they have elected in the last five general elections have been removed before completing their terms.

1.4 Health status

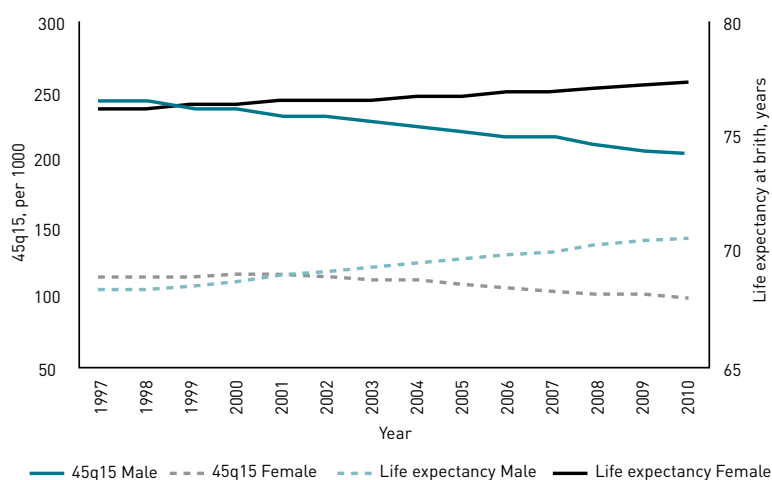
Thailand is on track with the Millennium Development Goals (MDGs) (Waage et al., 2010). Demographic transition started in the early 1970s, life expectancy at birth increased gradually, reaching 70 years for males and 77 years for females in the mid-2000s with a period of stagnation due to HIV/AIDS epidemics in 1990s. Life expectancy of females exceeds that of males, due to higher mortality rate among men attributable to accidents, risk-carrying work and unhealthy behaviour, though women live more with disability. The improvement in life expectancy is partly a result of successful HIV/AIDS prevention which started to reverse the epidemic around the late 1990s (see Table 1.3) (UNFPA Thailand, 2011).

Table 1.3 Mortality and health indicators, selected years

	1980	1990	1995	2000	2005	2010
Life expectancy at birth (years)						
Male	62.7	69.3	68.6	68.8	69.7	70.6
Female	68.4	75.8	76.1	76.5	76.8	77.4
Total mortality rate, adult (per 1000)						
Male	-	-	-	236.7	221.9	204.8
Female	-	-	-	117.0	110.6	101.0

Source: World Bank (2013a)

The adult mortality is the probability of dying between ages 15–59 per 1000 population; it has been declining over time for both males and females (Fig. 1.2). For adult males, the rate declined from nearly 240 per 1000 in 2000 to 205 per 1000 in 2010. Adult mortality among females decreased from 117 per 1000 in 2000 to 101 per 1000 in 2010, though stagnation was observed from 1997 to 2003, probably due to HIV/AIDS (this is consistent with the findings by Rajaratnam et al., 2010). The decline in adult, infant and under-five mortality rates indicate improved life expectancy at birth for both males and females.

Figure 1.2 Life expectancy at birth, adult mortality male and female

Source: The World Bank (2015). World Development Indicators [<http://databank.worldbank.org/data/views/reports/tableview.aspx>, accessed 9 April 2015]

1.4.1 Main causes of death

Table 1.4 shows age-standardized death rates (A-SDRs) per 100 000 by major causes of death in Thailand during 1980–2005. A U-shape of the

A-SDRs of all infectious and parasitic diseases during 1980–2005 has been observed: from the high A-SDR in 1980 (59.4 per 100 000), the rates came down to 35.6 and 27.7 per 100 000 in 1985 and 1990, respectively. The A-SDRs of this cause subsequently went up again after 1990 (32.5, 50.8 and 59.7 per 100 000 in 1995, 2000 and 2005, respectively). However, a closer look shows that HIV/AIDS was the major contributor to this infectious mortality reverse trend.

Table 1.4 Main causes of death, 1980–2005, selected years (age-standardized death rates per 100 000 population)

Cause of death	1980	1985	1990	1995	2000	2005
Communicable diseases						
All infectious and parasitic diseases (A00-B99)	59.4	35.6	27.7	32.5	50.8	59.7
Tuberculosis (A15-A19)	25.2	15.6	9.6	7.9	9.9	7.9
Sexually transmitted infections (A50-A64)	0 ^a	0 ^a	0 ^a	0 ^a	0 ^a	0 ^a
HIV/AIDS (B20-B24)	ND	ND	0*	3.4	12.5	10.8
Noncommunicable diseases						
Malignant neoplasms (C00-C97)	40.6	39.7	52.8	59.7	66.6	74.3
Colon cancer (C18)	1.3	1.1	1.8	2.0	3.3	2.3
Cancer of larynx, trachea, bronchus and lung (C32-C34)	4.2	3.1	4.4	5.8	9.4	11.9
Breast cancer (C50)	1.4	0.9	1.0	1.8	3.5	5.1
Cervical cancer (C53)	1.3	1.2	0.6	0.8	2.8	4.0
Diabetes (E10-E14)	5.6	5.5	7.0	9.2	13.4	11.1
Mental and behavioural disorders (F00-F99)	1.3	0.9	1.3	1.6	0.9	1.2
Circulatory diseases (I00-I99)	80.5	71.2	97.6	114.2	56.3	55.1
Ischaemic heart diseases (I20-I25)	2.1	2.4	1.9	3.5	11.3	17.6
Cerebrovascular diseases (I60-I69)	18.1	13.1	14.2	13.2	14.6	23.4
Chronic respiratory diseases (J00-J99)	27.6	17.4	17.2	44.1	35.6	37.7
Digestive diseases (K00-K93)	34.8	28.0	24.2	20.7	15.2	18.8
External causes						
Transport accidents (V01-V99)	16.6	9.0	14.7	26.7	20.3	16.1
Suicide (X60-X84)	8.2	6.1	6.7	7.0	7.9	5.6
Ill-defined and unknown causes of mortality (R95-R99)	ND	ND	ND	ND	ND	ND

ND: not determined.

Note: a Rates are less than 0.1 per 100 000.

Source: WHO (2012b).

After 2000, it is not surprising that circulatory disease rates declined, because of the change in coding practice –unspecified heart failure was moved from Cerebrovascular diseases to the Ill-defined group in an attempt to improve the cause of death.

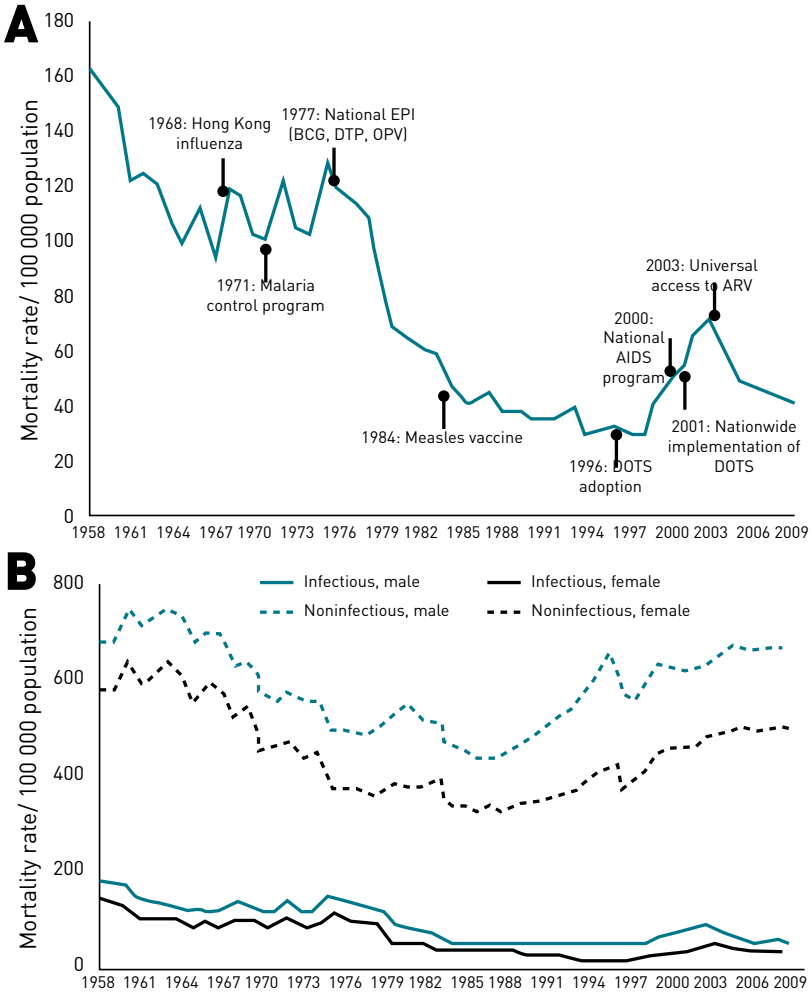
Similar to developed countries, noncommunicable diseases (NCDs) have become the main causes of death. Certain causes, such as malignant neoplasms or circulatory diseases, have A-SDRs higher than for all infectious diseases combined (Table 1.4). Among malignancy, increased trends were observed among cancers of colon, larynx, trachea, bronchus and lung, and breast during 1980–2005. The A-SDR of cancer of the larynx, trachea, bronchus and lung was 4.2 per 100 000 population in 1980, but increased to 4.4, 5.8, 9.4 and 11.9 per 100 000 in 1990, 1995, 2000 and 2005, respectively. Diabetes, ischaemic heart diseases, cerebrovascular diseases, and chronic respiratory diseases all also increased.

Despite active policies to reduce traffic injuries and mortality – such as the Don't Drive Drunk Campaign, Decade of Action for Road Safety, and Year of 100% Helmet Wearing – Table 1.4 shows erratic trend, peaking in 1995. Mortality from transport accidents was double to triple the suicide rate. Perhaps better statistics and reporting of traffic-related injuries, erratic or ineffective interventions may explain this erratic mortality trend. Closer monitoring and effective interventions are on national policy agendas.

Although the epidemiological transition of diseases in Thailand has changed from the stage of infectious diseases to NCDs, the burden of infectious disease still exists. In 1999 and 2004, the Thai Working Group on Burden of Disease conducted a Burden of Disease Study (Table 1.5). For years living with disability, alcohol dependence/harmful use, and depression were the two leading causes among men, while depression and osteoarthritis were prevalent among women. The results from the latter study confirm that the burden from HIV/AIDS resulting from the epidemic in the 1990s remained high, while the burden from the injuries was unchanged (Bundhamcharoen et al., 2011b).

HIV/AIDS contributed to the stagnation of reduction in infectious diseases mortality until universal access to antiretroviral treatment (ART) was launched in 2004 (Aungkulanon et al., 2012) (Figure 1.3).

Figure 1.3 Infectious and noninfectious mortality rates in Thailand, 1958–2009: (A) Infectious disease-related mortality rates, major events and key public health interventions; (B) Comparison of infectious disease-related mortality rates with noninfectious disease-related mortality rates



Source: Aungkulanon et al. (2012).

Table 1.5 Top ten causes of disability-adjusted life year (DALY) loss, 2004, Thailand

Top ten ranking in men	YLLs (x 1000)	YLDs (x 1000)	DALYs (x 1000)	Top ten ranking in women	YLLs (x 1000)	YLDs (x 1000)	DALYs (x 1000)
1. HIV/AIDS	634.2	17.7	651.9	Stroke	267.0	48.5	315.5
2. Traffic accidents	548.6	42.7	591.3	HIV/AIDS	279.5	15.1	294.6
3. Stroke	282.6	54.0	336.6	Diabetes	183.7	108.8	292.5
4. Alcohol dependence/harmful use	18.1	315.2	333.3	Depression	0.0	191.5	191.5
5. Liver cancer	277.3	3.1	280.4	Ischaemic heart disease	129.6	10.7	140.3
6. Ischaemic heart disease	168.4	15.6	184.0	Osteoarthritis	1.2	129.9	131.1
7. COPD	124.8	58.6	183.4	Traffic accidents	15.4	10.8	126.2
8. Diabetes	101.6	79.3	180.9	Liver cancer	123.9	1.7	125.6
9. Cirrhosis	140.5	4.3	144.8	Deafness	-	110.7	110.7
10. Depression	-	136.9	136.9	Anaemia	0.2	109.3	109.5

YLL: years of life lost.

YLD: years lived with disability.

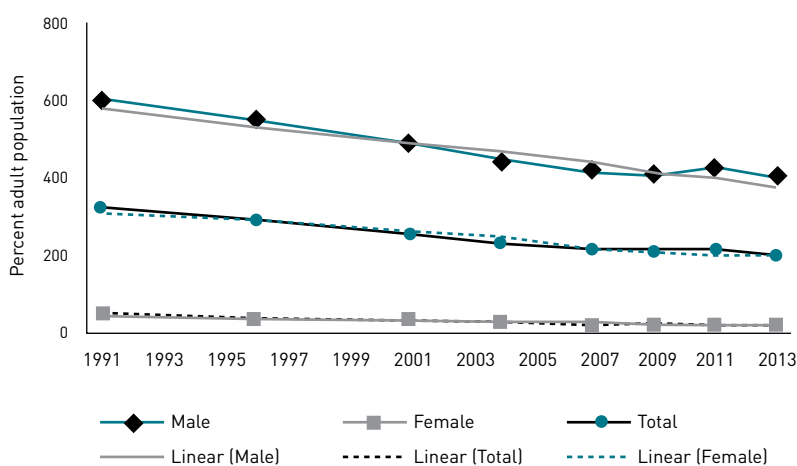
COPD: chronic obstructive pulmonary disease.

Source: Bundhamcharoen et al. (2011b).

There has been a stagnation of the reduction in adult smoking prevalence in recent years, the overall prevalence was 21.2% in 2007 and 19.9% in 2013 (Figure 1.4), only 1.3 percentage points reduction in 6 years; however, there was a slight increase among females, from 1.9% in 2007 to 2.1% in 2013.

Despite advancement in two tobacco control acts legislated before the ratification of the Framework Convention on Tobacco Control (FCTC), reduction in the prevalence of tobacco has slowed in recent years, for which the increase in retail price should be increased in line with the increase in disposable income (increase in cigarette prices is an extremely effective tool for tobacco control). In effective tobacco control strategies, governments should impose tax increases or ban tobacco advertising and sponsorship.

Figure 1.4 Adult smoking prevalence by gender, 1991–2013



Source: TRC (2015).

1.4.2 Maternal, child and adolescent health

While Thailand has achieved success in reducing the fertility of the population and sustained a high level of contraceptive prevalence and equitable access to reproductive health services (Kongsri et al., 2011), new challenges have emerged, such as increased infertility due to delayed marriage, lower than replacement fertility rate, increasing sexual activity among teenagers and young adolescents and unmarried adults, and higher unmet need for contraception than that found in the typical fertility survey (UNFPA Thailand, 2011). Table 1.6 shows some indicators of the reproductive health situation during 1980–2010 in Thailand.

Table 1.6 Maternal, child and adolescent health indicators, selected years

Indicator	1980	1990	1995	2000	2005	2010
Adolescent birth rate (per 1000 women aged 15–19 years)	ND	ND	ND	44.5	43.4	39.5
Infant mortality rate (per 1000 live births)	46.3	26.4	18.0	15.2	13.0	11.2
Under-five mortality rate (per 1000 live births)	60.0	31.8	21.1	17.7	15.1	13.0
Maternal mortality ratio (per 100 000 live births)	ND	42	37	40	34	26*

ND: not determined.

Note: *data for 2013

Source: WHO (2014).

From the mortality database of the World Health Organization (WHO), the improving of reproductive health situation in Thailand is based on three indicators – infant mortality rate (IMR), under-five mortality rate (U5MR), and maternal mortality ratio (MMR). In 1980, IMR was nearly 50 per 1000 live births, while U5MR was 60. These rates gradually reduced to 11 for IMR and 13 for U5MR in 2010. There were many improvements in maternal and child health (MCH) services during this period, including increase in the vaccine coverage. Thailand has achieved good health at a relative low cost due to comprehensive geographical coverage of primary health care (PHC), and expansion of financial risk protection to the population, reaching universal coverage by 2002 (Patcharanarumol et al., 2011; Rohde et al., 2008).

Over the same time period, MMR was also reduced, from 42 per 100 000 live births in 1990 to 26 in 2013. Looking back to the early 1960s, the MMR reported in the Public Health Statistics was around 400 per 100 000 live births. This is a tremendous improvement in the reproductive health in Thailand in half a decade, though more needs to be done to further reduce the MMR.

In terms of adolescent health, there was a slightly decline in adolescent birth rates during 2000–2010 (Table 1.6). However, the births from the early teens (younger than 15 years old) have been increasing over time, from 250 births per 1000 girls in 1960 to 409, 1478 and 2938 births in 1980, 2000 and 2009, respectively (UNFPA Thailand, 2011). Since teenage pregnancies affect both the mother and the quality of the life of their baby throughout its life, the emerging challenges of increased early unprotected sexual activity, and large unmet need for family planning services (in particular among unmarried couples since 2000) should be priority policy interventions. The high level of unsafe abortions is also a major concern.

2 Organization and governance

Chapter summary

The Ministry of Public Health (MOPH) is the national health authority responsible for formulating and implementing health policy. Its role has changed as several autonomous health agencies have been established recently through legislations, notably the Health Systems Research Institute (1992), the Thai Health Promotion Foundation (2001), the National Health Security Office (NHSO) (2002), and the National Health Commission Office (NHCO) (2007). MOPH and these independent agencies form a complex interdependent governing structure, while non-state actors and civil society groups also play increasing roles. The NHCO is mandated to convene annual National Health Assembly (NHA), ensuring participatory engagement by all government and non-state actors in formulating health policy through NHA resolutions. The advent of the NHSO has had a major impact in transforming the integrated model of MOPH as purchaser and service provider, to NHSO as purchaser and MOPH as service provider.

Thailand has a long history of de-concentration of health management to the Provincial Health Office (PHO) and all public hospitals under the MOPH, especially the financial power to retain and use revenue according to regulations, subject to regular audit by the Auditor General. The PHO also holds regulatory power, such as new licence or annual licence renewal of private pharmacies and clinics, and consumer protection on food, drugs and cosmetics in the respective province. The Decentralization Act 1999 requested the MOPH to devolve all public health-care facilities to local elected government units: health centres to Tambon Administration Organizations (TAOs), district hospitals to municipalities, and provincial hospitals to Provincial Administration Organizations. Progress in implementing the Decentralization Act has been slow, in terms of both devolving functions and transferring budget from central to local governments. After a decade, there were 43 MOPH health centres out of total 9768 (0.4%) devolved, as TAOs lacked readiness, capacities and funding, and cannot fulfil the criteria for

assuming responsibility for health centres. Multiple factors contributed to the lack of progress in devolving health centres to TAOs, including shift in central government priorities and unwillingness of MOPH leadership to devolve authority to TAOs; these were exacerbated by the fact that TAOs are not ready to assume these responsibilities.

Significant progress was made on the national household surveys conducted regularly by the National Statistical Office, and their use for monitoring the impact of health policies on households and supporting the estimation of capitation fee for the Universal Coverage Scheme (UCS). The adoption of the locally innovated Diagnosis Related Group in paying hospitals by all three public insurance schemes contributed to significant improvement in inpatient clinical data and development of a national inpatient data set for monitoring outcomes of treatment. Capacity in health technology assessment has been gradually developed since 2007 and has contributed to the inclusion of new medicines on the National List of Essential Medicines and interventions to be included in the benefit package of UCS.

Medicines are regulated by the Food and Drug Administration, which handles market approval and post-marketing control. However, with the exception of essential medicines sold to government bodies, prices are governed by market forces. Medical appliances are regulated, but their social, economic and ethical impacts are only assessed if they cost more than 100 million Baht (US\$ 3.3 million).

Patients have the right to choose their preferred provider from those approved by their insurance scheme, and most have access to a complaints procedure. The public is involved in policy formulation.

2.1 Overview of the health system

The 2007 and subsequent versions of the Constitutions of Thailand guarantee the equal rights of citizens to: (1) receive standard public health services; (2) survive and receive physical, mental and intellectual development (the latter particularly among children and youth); (3) access and use with dignity public welfare, public utilities, and other appropriate support from the State; (4) receive information and explanation and to express their opinions on any government project or activity that may affect their environment, health or well-being; and (5) participate with the State and communities in the preservation of natural resources and

biological diversity and in the protection of an environment that minimizes hazards to health.

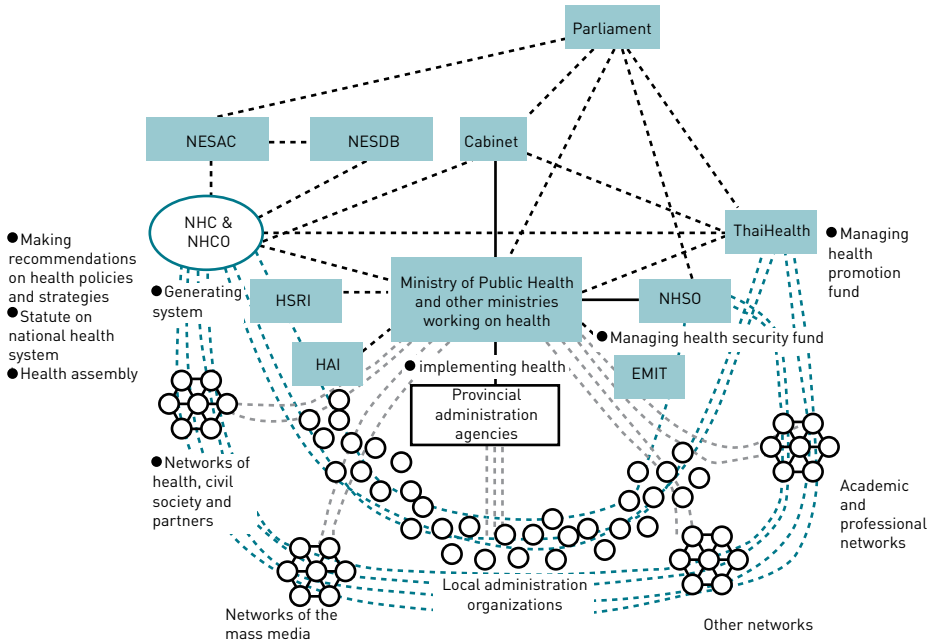
Despite 27 years of efforts to expand financial risk protection to the citizenry using targeting approaches since 1975 (Tangcharoensathien et al., 2009), by 2001 some 30% of the population was still uninsured. In 2002, Parliament passed the National Health Security Act, B.E. 2545 (2002), which aims at setting up a health system that provides essential health services for the people with good quality using universal health coverage approach. As mandated by the Act, the National Health Security Office (NHSO) was established to manage and ensure health security for the rest of the people who were not covered by the Civil Servant Medical Benefit Scheme (CSMBS) and the Social Health Insurance (SHI).

The year 2007 was a major turning point of health system, when the National Health Act, B.E. 2550 (2007) was adopted by Parliament. As described in this Act, health means the state of complete well-being in multiple dimensions including physical, mental, intellectual and social, all of which are considered in a holistic and interconnected way. As mandated by the National Health Act, the National Health Commission (NHC) and the National Health Commission Office (NHCO) were established as the implementing body of the Act and secretariat, respectively. The NHC is mandated to submit recommendations in respective National Health Assembly (NHA) resolutions to the Government through Cabinet Resolution on health policies and strategies for the Government and all sectors in society (Rasanathan et al., 2012).

The multiple governance mechanisms of the national health system are illustrated in Figure 2.1. Increasingly, there are legally established players and foundations, civil society, and the private sector, which are active in shaping health policies and agendas in Thailand. However, the Ministry of Public Health (MOPH), as a national health authority, is the principal agency, although its focus is on the largest health-care delivery systems under its jurisdiction. Other ministries also play a role in health-related activities in various dimensions, while local government plays very limited role in financing and health service provision. For the health security system, three major agencies cover the whole population: the NHSO manages the Universal Coverage Scheme (UCS), the Comptroller General Department (CGD) of the Ministry of Finance manages the CSMBS, and the Social Security Office (SSO) of the Ministry of Labour

manages the SHI. The NHC makes recommendations on health policies using the annual NHA with participation by all stakeholders as a key mechanism of participatory public policy development. Some NHA resolutions are endorsed by Cabinet Resolution, and become legally binding to line agencies in the government to implement and report back to the Assembly.

Figure 2.1 Linkages of governance mechanisms in the national health system



NESAC: National Economic and Social Advisory Council; NESDB: National Economic and Social Development Board; NHSO: National Health Security Office; NHC: National Health Commission; NHC0: National Health Commission Office; ThaiHealth: Thai Health Promotion Foundation; HAI: Healthcare Accreditation Institute; HSRI: Health System Research Institute; EMIT: Emergency Medical Institute of Thailand.

Note: solid lines refer to line of command, reporting and direct accountability, while dotted lines depict intersectoral coordination.

Source: Wibulpolprasert et al. (2011b).

The Thai Health Promotion Foundation (ThaiHealth) manages the Health Promotion Fund, financed by 2% additional surcharges from excise tax levied on tobacco and alcohol. The Fund supports all relevant sectors, public, private and civil society, to carry out active health-promoting activities. The Healthcare Accreditation Institute (HAI), established by a Royal Decree in 2552B.E. (2009) as mandated by the Public Organization

Act 2542B.E. (1999), promotes and supports health-service quality development and accredits all public and private hospitals and other health-care facilities (such as health centres). The Health System Research Institute (HSRI), established by Health System Research Institute Act 2535B.E. (1992) manages and supports health-system research and development. In the light of these multiple actors, most established by laws, MOPH is adjusting its strategy to better coordinate and orchestrate these agencies to achieve national health goals in a synergistic manner.

2.2 Historical background

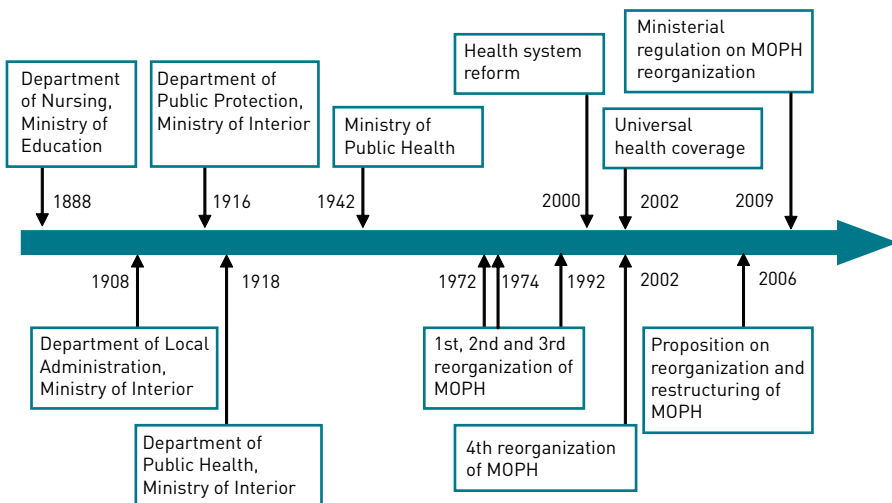
The MOPH is the core agency in the Thai public health system. The development of the MOPH began in 1888 as the Department of Nursing under the Ministry of Education. In 1918, it became the Public Health Department under the Ministry of Interior. The Ministry of Public Health was established in 1942 according to the Reorganization of Ministries, Sub-Ministries and Departments Act, B.E. 2485 (1942). Since then, there have been several reorganizations, first in 1972, a second in 1974, a third in 1992, and a fourth in 2002. In 2006, the MOPH prepared a proposal on its mission and structure, and the formal ministerial regulation on MOPH reorganization was issued in 2009, whereby a few new departments were established, and the government was downsized – including the health sector, where posts of retired persons were terminated (see Figure 2.2).

In 1999, the Decentralization Act was adopted by Parliament in order to transfer various activities held by central ministries, including education and health services, to local government organizations (LGOs). However, in late 2002 all health-care decentralization movements were suspended because of changes in government policy. In 2002, the advent of NHSO responsible for UCS resulted in a major shift of financial power from MOPH to NHSO. The conventional supply-side financing through annual recurrent budget allocation to MOPH-owned health-care facilities ended, with the service-related budget transferred to NHSO; allocation is now based on catchment population for outpatient services and service load for inpatient services. MOPH still retains a regulatory function, consumer protection, implementation of related public health laws, and health-service provision.

This shift, splitting the role of purchaser (NHSO) and provider (MOPH), has had major ramifications on MOPH and its relationship with NHSO. In 2009, there was a major public-sector reform to improve the efficiency of

the government sector, including delegation of tasks and budget to LGOs, downsizing and restructuring; posts were terminated after retirement across all government sectors. As a result, the MOPH, especially at central administration level, will probably become smaller and may play more stewardship functions such as goal-, policy-, strategy- and standard-setting, regulatory and public health functions, monitoring and evaluation, and coordinating with other health and non-health sectors to improve the health of the population. The competence and skill mix in central MOPH administration needs to be reoriented in response to potential future evolution.

Figure 2.2 Evolution of the Ministry of Public Health



Source: Wibulpolprasert et al. (2011b).

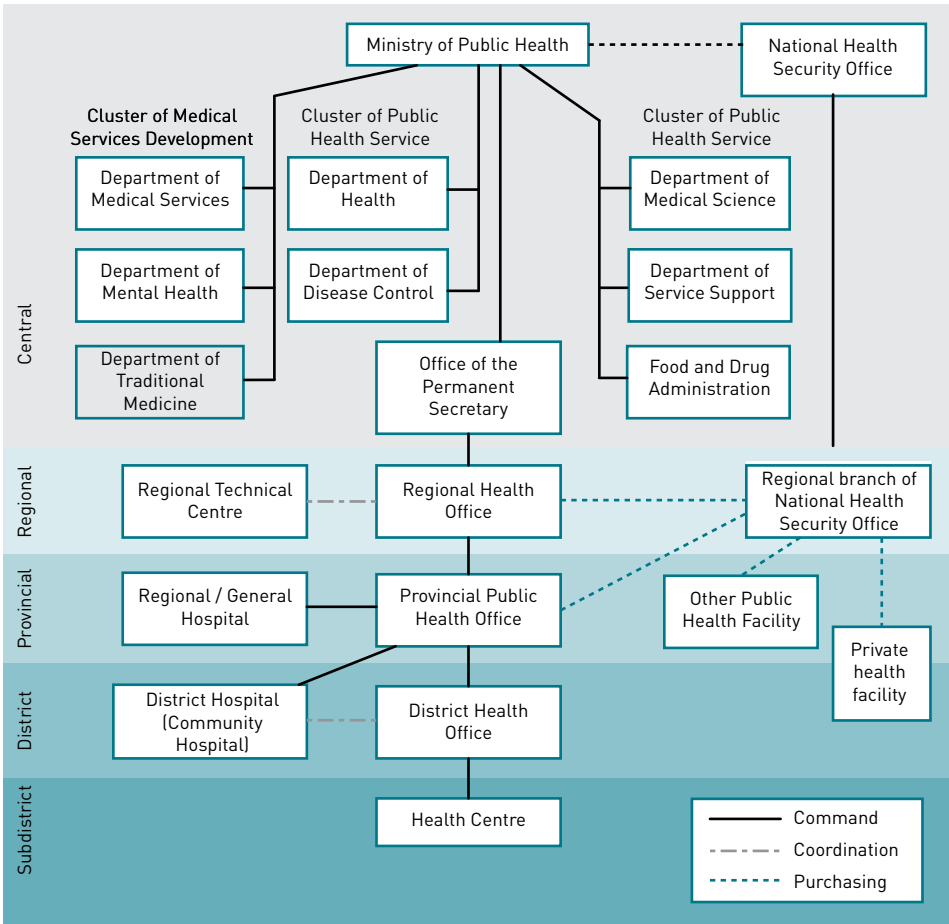
2.3 Organization

The MOPH is the main organization responsible for health promotion, prevention, disease control, treatment and rehabilitation, as well as other official functions as dictated by laws. Other ministries also have health-care provision roles, albeit limited – including the Ministry of Social Development and Human Security responsible for other health-related social services for people with disability (PWD) and older persons; the Ministry of Justice for special population such as prisoners; local governments such as municipalities and Tambon Administration Organizations. The MOPH administrative structure is divided into two levels, central and provincial. The central administration consists of the Office of the Permanent Secretary and three clusters of technical

departments: Cluster of Medical Services Development, Cluster of Public Health Development, and Cluster of Public Health Service Support.

The central ministry also delegates functions to regional health offices and regional technical centres under technical departments in order to monitor and support the work of provincial health offices. The regional health offices are coordination bodies across provinces within a geographical region, responsible for integration of planning and mobilization of resources within a region.

Figure 2.3 Organizational structure and interlinkages between MOPH and NHSO



Source: Synthesis by the Author

The provincial administration is the responsibility of the Provincial Health Office (PHO), which oversees and supports the regional or general hospitals, district hospitals and district health offices within each province. The district health office oversees all health centres in the district and coordinates with district hospital for managing the district health system. In terms of level of care, health centres offer primary health care (PHC) services, while district hospitals provide PHC and secondary care (all district hospitals have clinical capacity to provide admission services, numbers of beds range from 10 to 120) and regional/general hospitals provide tertiary and other specialized care depending on their size and capacity. There are also other public health-care facilities under other ministries and local government, but these make up a very small proportion. Private clinics and hospitals also play a role in providing mostly curative services to match the demand among the better-off who opt to pay despite being covered by CSMBS, SHI or UCS. Note that private hospitals with more than 100 beds are the main contractors for SHI members through registration and annual capitation payment. The private sector had more than 60% of the total 10 million registered SHI members (see Chapter 3 for more details).

NHSO also established regional branches for purchasing of services within regions, covering providers under the MOPH, other public organizations and the private sector (see organization relationship between MOPH and NHSO in Figure 2.3).

2.4 Decentralization and centralization

The MOPH has a long history of de-concentration of health management, devolving mobilization and use of revenue to the PHO and all hospitals since 1975, along with certain degree of decision-making power and financial autonomy.

The Decentralization Act 1999 was promulgated as mandated by Chapter 284 of the 1997 Constitution. The Act mandates that all public services held by central ministries, including health and education, as well as their associated budgets, should be gradually devolved to LGO. LGOs include Provincial Administration Organizations (PAOs), municipalities and Tambon Administration Organizations (TAO). The councils that oversee TOAs are elected members. The First Decentralization Action Plan focused on the establishment of Area Health Boards (AHBs) at the provincial level and transferred all public health-care facilities to AHBs. This was intended to maintain integration of the health system,

instead of fragmenting to PAOs, municipalities and TAOs. The MOPH actively implemented functional AHBs in 10 pilot provinces in 2002 with some successes (Leerapan and Aathasit, 2005) and there was a plan to institutionalize AHBs by law in 2005.

All health devolution was suspended in late 2002 since there were changes in leadership of the MOPH and government policy (Taearak et al., 2008). Between 2001 and 2006, Prime Minister Thaksin's administration initiated several policies affecting devolution – Village Fund and Urban Community Funds, universal health coverage (UHC) and provincial integrated administration policies through the function of the provincial Chief Executive Officer (CEO). Slow progress of decentralization was noted not only in health but also in education. More than 500 000 staff needed to be transferred to the LGO. As a result of the delays, the LGO budget share was only 24.1% in 2006 against the mandated target by Law of 35% (Figure 2.4).

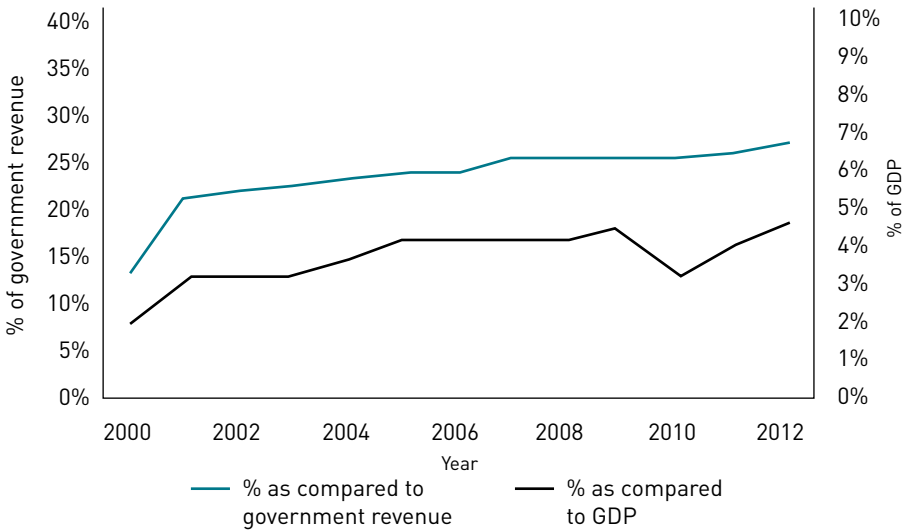
Given the implementation problems, the Decentralization Act was amended in 2006 to set the minimum share of LGO to total government budget at 25%, with a target of 35%. Not only did this change the target of devolved budget, but the model of health-care decentralization as proposed in the Second Decentralization Action Plan (2008 onwards) was also amended. It seems that keeping all health-care facilities together as a network was less of a concern and devolution of health centres to TAOs was clearly defined as a target for health-care decentralization, while district and provincial hospitals had more flexible options (formerly they were to be devolved to the municipalities or PAOs). Establishment of a comprehensive integrated model of AHB was not referred to in this plan (Office of Prime Minister, 2008) and previous pilot implementations of AHBs were terminated.

Slow progress was again noted during the Second Decentralization Action Plan. As of 2015, only 43 sub-district health centres out of the total 9268 were devolved to TAOs, because of the stringent criteria of readiness for TAOs to assume health responsibilities. Positive results among the devolved health centres were reported, such as increased management flexibility, greater responsiveness to community and patients, and increased community participation (Hawkins, Srisasalux & Osornprasop, 2009). In 2009, there was an attempt of the Association of PAOs to demand transfer of the remaining health centres to the PAOs, as indicated in the Action Plan, and provincial committees in 27 pilot provinces were

appointed by the Office of Prime Minister to explore a feasible model to be fitted to the individual provincial context. There was no progress from this effort.

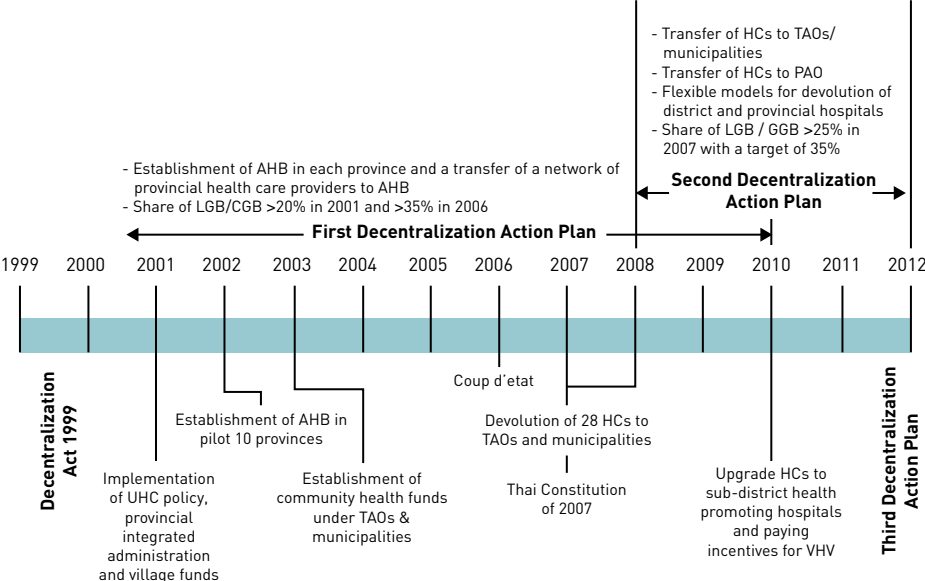
The Third Decentralization Action Plan was approved in 2012 without major change from the Second Action Plan except a model of transfer of a network of provincial health-care providers to PAOs in provinces with large populations is proposed again as an alternative. Progress of health-care decentralization and related policy interventions since 1999 are summarized in Figure 2.5. Criticism is that Thailand runs a risk of de-fragmentation of a well-functioning provincial–district–sub-district health system to individual PAOs, municipalities and TAOs.

Figure 2.4 Local government budget: fiscal year 2000–2012



Source: Office of Decentralization to Local Government Organization Committee.

Figure 2.5 Progress of health-care decentralization and related policy interventions



AHB: Area Health Board; CGB: central government budget; GGB: general government budget; HC: health centre; LGB: local government budget; PAO: Provincial Administration Organization; TAO: Tambon Administration Organization; UHC: universal health coverage; VHV: village health volunteer(s).

Source: Synthesis by the Author

The Decentralization Action Plan also indicated that 34 public health functions needed to be transferred from the MOPH to LGOs. These public health functions were mainly under the responsibility of Department of Health, Department of Disease Control, and Food and Drug Administration. In 2010, there were only seven public health functions under the responsibility of Department of Health being transferred to LGOs (Wibulprolprasert et al., 2011b).

2.5 Planning

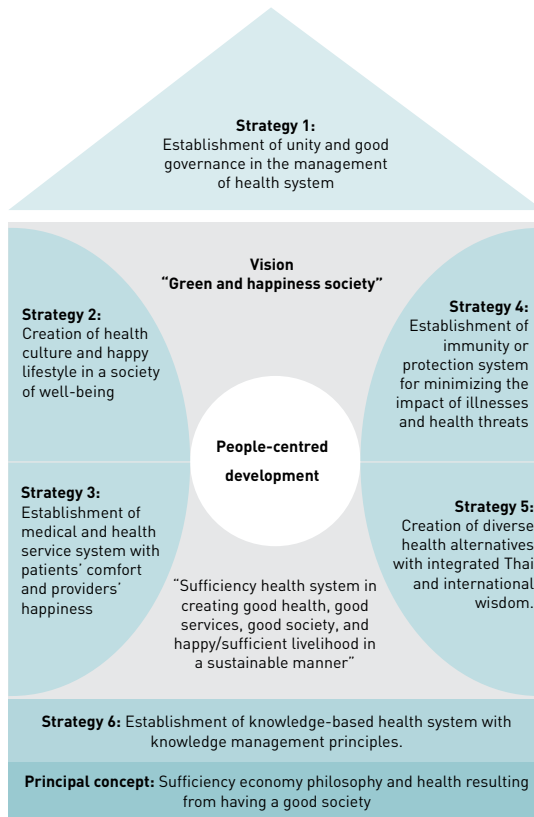
The 2007 Constitution prescribes the directive principles for the development of the people’s health. The MOPH, in coordination with all other relevant sectors, has translated these principles into the 10th National Health Development Plan, 2007–2011, as a strategic plan that builds up the concept and approach to develop the health system in a holistic way. The new concept was based on the philosophy of economic sufficiency, which helps the system to move towards livelihood and health

development in all dimensions, by all sectors at all levels, in accordance with the national development direction.

The 10th National Health Development Plan established a sufficiency health system in a green and happiness-creating health culture, a medical and health service system satisfactory to the clients, while health-care providers are also happy, and an immunization system for minimizing the impact of illnesses and health threats (Wibulprolprasert et al., 2011b).

The strategies for development of the Thai health system in the 10th Plan are shown in Figure 2.6.

Figure 2.6 Relationship of concept, vision and strategies for health and national development



Source: Wibulprolprasert et al. (2011b).

The other type of health development plan is Health Plan of Action under the National Administration Plan Four-Year Plan of Action (2009–2012), MOPH. This is a strategic plan formulated by the MOPH alone in accordance with the Royal Decree on Good Governance Principles and Procedures of 2003. The Plan specifies responsible agencies and budget for use in preparing an annual workplan and an annual performance agreement/certification.

The MOPH plan focuses on the translation of policies, targets, indicators, tactics and operating procedures in the 2009–2011 National Administration Plan related to MOPH, into the MOPH Plan of Action for 2009–2012. It has a rolling budget plan that has to be revised each year, based on the actual budget allocated by all agencies under the ministry and projected for the following 3 years. In its Four-year Plan of Action for 2009–2012, MOPH sets five targets for services with indicators and strategies for its operations, which include 58 products/projects, with a total budget of 1014 trillion Baht (US\$ 32.7 trillion at 2012 exchange rate), of which 81.9 billion Baht (US\$ 2.64 billion) is for capital investment in health during this plan (Wibulprolprasert et al., 2011b).

2.6 Intersectorality

Intersectorality in the health system is demonstrated in the public participatory engagement for policy formulation. There have been movements on tobacco control such as the enactment of the Tobacco Product Control Act of B.E. 2535 (1992) and the Non-Smokers' Health Protection Act of B.E. 2535 (1992). In addition, there have also been movements on healthy cities, healthy schools and healthy workplaces, as well as health-system reforms during 1978–1996, for which intersectoral actions proved indispensable. The implementation of various public policies might have negative impact on health and well-being – for example, agricultural and livestock policies focusing on yield enhancement with widescale utilization of growth-stimulating hormones and pesticides. Conversely, the implementation of public policy which gives positive impact to health and well-being is termed “healthy public policy”, emphasizing the creation of health security – for example, the public policy on road safety, and pesticide-free agriculture and green movement are health-enabling frameworks.

The creation of healthy public policy should be a participatory public policy process with participation by all sectors, including technical and professional sector, popular and social sectors, and political and civil

service sector. In this process, each sector can exert its support of the policy development initiative (Rasanathan et al., 2012).

The National Health Act, B.E. 2550 (2007) was regarded as the first law in Thailand to foster public participation in agenda-setting and policy formulation. The Act provides an innovation platform for stakeholders from all sectors to formulate public policies conducive to the health of the people, such as the Statue on National Health System, the annual NHA, Local Health Assembly, the use of Health Impact Assessment as mandatory tool prior to decisions on major public and private investment projects which may have negative impact on health of the people (Wibulprolprasert et al., 2011b). The progress report of the implementation of various resolutions of the NHAs was mixed, some showed good progress, while others showed stagnation – even when an NHA Resolution was endorsed by the Cabinet and therefore legally binding on government agencies, such as the total ban on chrysotile asbestos.

2.7 Health information management

2.7.1 Information systems

Health information system (HIS) can be categorized into two subsystems: population based and facility based. Population-based HIS includes household surveys regularly conducted by the National Statistical Office (NSO), and civil registration. Facility-based HIS includes clinical, health and management information systems.

Population-based HIS

- **Population and housing census:** The first census was in 1910 and then repeated every 10 years. The most recent census was conducted in 2010 by NSO covering Thai and non-Thai residents. The census data reflect population distribution by age, sex, place and life expectancy, and supports the country's development in various areas including public health (NSO, 2010).
- **Civil registration:** Thailand has had a long history of civil registration since its establishment in 1909. The Civil Registration Division under the Department of Local Administration, Ministry of Interior is responsible for civil registration. The primary registration units, located in all municipalities and in district offices, are responsible for recording the vital events in accordance with the regulations and instructions issued by the Civil Registration Division. By law, any birth

must be registered within 15 days, while death and still birth must be registered within 24 hours. In 1982, the Ministry of Interior launched the Population Identification Number Project, which significantly improved the registration system. It fully computerized the registration data of the entire population – issue of personal identity (ID) card and household registration book were made mandatory. A unique ID number comprising 13 digits is issued to every individual at birth registration. Previously, Thai citizens got their ID cards at the age of 15, this was changed to 7 years in 2011. A citizen's ID card has to be renewed every 6 years. Although the records of birth and death are accurately collected, quality of cause of death information is still a major problem as 60–70% of deaths occur outside hospitals and may be classified as natural cause of death by head of village and civil registration officers who have no medical background (Tangcharoensathien et al., 2006). Many initiatives have been developed to improve the quality of cause of death information, including development of a manual of medical certification of cause of death based on ICD10, the use of verbal autopsy to verify cause of death (Kijisanayotin, 2011).

- **Population surveys:** NSO regularly conducts national household surveys. The Household Socioeconomic Survey (SES), Health and Welfare Survey (HWS), elderly survey and disability survey are useful to monitor policy impacts at household level. The SES was first conducted in 1957, and then every 5 years. It collects information on household income and expenditure, household consumption, changes in assets and liabilities, durable goods and ownership, and housing characteristics. NSO has been assigned to carry out this survey every 2 years since 1987 to respond to the rapid economic growth and to monitor antipoverty policy (NSO, Undated-a). The first HWS was conducted in 1974 and repeated every 5 years. It collects information on health insurance coverage, sickness episodes, health-seeking behaviour and health-care expenditure. However, after the country implemented Universal Coverage Policy in 2001, the MOPH requested the NSO to conduct the HWS every year from 2003 to 2007 to monitor the impact of policy in a timely manner. The HWS has been conducted every 2 years since 2007 (HISO, 2009). All NSO surveys contain a module to assess household ownership of durable goods, which facilitates the computation of the wealth index and quintiles to monitor equity on a regular basis with a very long time trend (Tangcharoensathien, Limwattananon & Prakongsai, 2007).

The MOPH also conducted the first National Health Examination Survey in 1991–1992 through collective effort of the National Epidemiological Board of Thailand and a number of universities. Though costly, the survey contributed to an in-depth understanding of the health status of the Thai population. Subsequent surveys have been conducted every 5 years and financed by MOPH (1996–1997, 2003–2004 and 2008–2009), with the active leadership and funding availability of the HSRI and the MOPH (Jongudomsuk et al., 2012).

In response to the HIV/AIDS epidemic, the national HIV sentinel surveillance survey invested by MOPH contributed to evidence guiding accurate intervention for different subpopulation groups (UNAIDS, 2004).

Facility-based HIS

- **Clinical and health information systems:** Clinical and health information systems include all information systems related to health services provided to patients, such as medical record system, pharmacy information system, radiology and laboratory information systems, records of health promotion, disease prevention and sanitation activities. These systems aim to provide information to support decisions of clinicians and public health personnel to manage individual patients and population health. Outputs of these clinical systems can be used for disease surveillance to be reported to the MOPH. There are 47 notifiable communicable diseases, 11 environmental–occupational diseases; HIV/AIDS and injury are also covered. There is a need to develop disease registries to cope with the increasing trends of noncommunicable diseases (NCDs), as there were only a few registries maintained by university hospitals and some tertiary hospitals within the MOPH. There was an attempt to link these registries together for research purposes, as well as to improve the quality of patient care. The NHSO requests all contracted health-care providers to register NCD patients, e.g. diabetes, hypertension, chronic renal failure, cancer and HIV/AIDS, as part of the disease management system, and this innovation improves disease registries significantly. It is useful when disease registries are linked with mortality data from civil registration through national ID number to assess the survival curve of different diseases and intervention outcomes.
- **Management information systems:** Management information systems include all administrative data needed for effective management at the operational, management and executive levels. Data cover health

insurance coverage of patients, claim data, resources management such as payrolls, medicines inventory.

The MOPH has developed health minimum standard data sets of facility-based HIS; these are the 12-files and 18-files standard data. The 12-files standard data was developed in 1996 as a standard data set for health insurance management; it covers demographic data of individual inpatients, as well as their clinical data, treatments and resources used. Case-based provider payment for inpatient care such as Thai Diagnosis-Related Group (Thai DRG) has been developed based on the 12-files data.

The 18-files standard data was developed in 2002 to be used by PHC facilities. The data cover demographic data, as well as insurance coverage of its catchment population, disease prevention, health promotion and sanitation activities. The 18-files standard data was initially aimed at reducing the workload of health workers in doing reports needed to be submitted to higher levels. Facilities within the MOPH have both 12-files and 18-files standard data as electronic databases, but using different software. Exchange of data between health-care facilities is limited and can be done only for administrative data, especially claim data and some health-service activities. This is because of the lack of HIS standards. Recently, there was an attempt to develop a standard medicine code, the so-called 24-digit system, which was implemented with some limitations. Development of standards of laboratory data is just starting using LOINC system with the support of the HSRI to increase the interoperability (Kijsanayotin & Sinthuwanich, 2012).

2.7.2 Health technology assessment

Health technology assessment (HTA) in Thailand is defined as a form of policy research that measures short- and long-term health, economic, social and ethical consequences of the application or use of health technologies (Teerawattananon et al., 2009). Since 2012, there has been no legal requirement to apply HTA in market authorization by the Thai Food and Drug Administration for diffusion and reimbursement of health technologies including medicines and biological products, except a few medical devices. The revised Medical Device Act B.E.2551 (2008) requires the assessment of the social and economic consequences of medical devices with a cost higher than 100 million Baht (US\$ 3.3 million) before their market authorization. According to the Act, the Minister of Public Health can designate relevant HTA bodies in and outside the country to conduct the assessment, the cost of which is met by the industry.

However, due to a delayed process of issuing subordinate law, the HTA of medical devices has not been implemented since 2008.

In Thailand, HTA has become increasingly popular in recent years, especially after the establishment of the Health Intervention and Technology Assessment Program (HITAP), which is a research arm of the Bureau of Health Policy and Strategy, MOPH (Tantivess, Teerawattananon & Mills, 2009). In early 2007, HITAP was set up with the aim of generating the evidence necessary for priority-setting and resource allocation of health technologies and initiatives, including health-promoting and disease-preventing interventions. In December 2007, the first national methodological HTA guidelines (mainly focusing on health economic evaluation) were developed by local scholars with extensive consultations among stakeholders. The guidelines were eventually adopted by the National List of Essential Medicines (NLEM) Subcommittee and, since then, pharmacoeconomics evidence – including the assessment of cost-utility and budget impact analysis – has been requested by the Subcommittee for assessment of new and high-cost medications. For instance, the NLEM Subcommittee used pharmacoeconomic evidence to support the inclusion of tenofovir for treatment of chronic hepatitis B, pegylated interferon alfa-2a and pegylated interferon alfa-2b for treatment of chronic hepatitis C, oxaliplatin for treatment of colon cancer in the pharmaceutical reimbursement list (Mohara et al., 2012), and to reject the inclusion of osteoporotic drugs in the list (Kingkaew et al., 2012).

In 2010, the NHSO endorsed the HTA guidelines and HTA has been used for the development of the NHSO health benefit package under the UCS. International Health Policy Program (IHPP) and HITAP have been designated to act as programme coordinators, responsible for systematically prioritizing and assessing health interventions in cooperation with several groups of stakeholders, including policy-makers, health-care professionals, civil society, patient groups, academics, industry and lay people (Mohara et al., 2012). At least 10 HTA studies are conducted annually by IHPP and HITAP, and the results are considered by the NHSO Subcommittee. Although the NHSO Subcommittee does not always make decisions in line with HTA results, HTA information is very useful and has increased the robustness of its decisions (Youngkong et al., 2012).

Tantivess, Teerwattananon & Mills (2009) analysed key strategies contributing to the recent success of using HTA to inform policy decisions in Thailand. These include: (i) promoting effective communications between HTA agencies and key stakeholders; (ii) enhancing the image of HTA agencies by, for example, promoting transparent HTA process and strengthening technical capacity; (iii) ensuring validity of research; (iv) insuring policy relevance of HTA topics and research; and (v) establishing appropriate and effective programme management. HTA in Thailand is now recognized as a role model for other low- and middle-income countries (Yang, 2009; Glassman et al., 2012), and HITAP is host of the regional HTA network, namely HTAsiaLink (<http://www.hitap.net/en/activities-network/htasialink>).

2.8 Regulation

2.8.1 Regulation and governance of third-party payers

There are three public health-financing schemes covering the entire population. The SHI covers private-sector employees (without dependants except maternity benefits); the CSMBS covers civil servants, pensioners and their dependents (including spouses, children under 20 years and parents); and the remaining population is covered by the UCS. All schemes have been established by specific laws.

- SHI is a part of the comprehensive social security system, as mandated by the Social Security Act 1990 for non-work-related conditions; and Workmen's Compensation Act 1972 (amended 1974) for work-related injuries, disabilities and mortality. The Social Security Office of the Ministry of Labour manages the SHI.
- CSMBS is mandated by the Royal Decree on Medical Benefits of Civil Servant 1980 and its major amendment in 2010. The Ministry of Finance Comptroller General Department manages the CSMBS.
- UCS is mandated by the National Health Security Act 2002. By law, the NHSO is responsible for managing the UCS.

The characteristics of the governance and management structures of three public health insurance schemes are shown in Table 2.1. Note that they are public agencies and use public funds, and are all therefore subjected to financial audit by internal auditor and external audit by the Auditor General.

Table 2.1 Characteristics of governance and management structures of three public health insurance schemes

	UCS	SHI	CSMBS
Legal framework	National Health Security Act 2002	Social Security Act 1990	Royal Decree 1980 and recent amendment 2010
Type of organization	Autonomous public agency	A department in Ministry of Labour (MOL)	A Bureau of the Comptroller General Department of the Ministry of Finance (MOF)
Governing board	31 members chaired by the Public Health Minister	15 members chaired by Permanent Secretary of the MOL	Advisory board (19 members) chaired by the Permanent Secretary of the MOF
Number of staff ^a	446 (central office)		
365 (regional offices)	2349 (central office)		
3505 (branch offices) ^b	40 in central office		
Branch offices	13 regional offices with 13 regional advisory committees	11 branch offices in Bangkok and another 38 provincial offices	–
Roles of branch offices	Beneficiary registration, contract provision and consumer protection	Managing collection of payroll tax contribution, through wire transfer of employers' and employees' shares, managing benefit disbursement, consumer protection and public education	–
Admin budget ^a	0.8% of total UCS annual budget	10% of total expenditure	Negligible 0.00000008%

Notes:

^a 2009 data.

^b These staff are responsible for all functions as required by Social Security Act, including premium collection, purchasing, pension benefit management, invalidity benefits.

Source: Jongudomsuk (2010).

Table 2.2 Benefit packages of three public health insurance schemes

	UCS	SHI	CSMBS
Health service utilization	At contracting unit of primary care (CUP) both public and private	At registered main contractor hospital (>100 beds), public or private	At any public hospital for outpatient services; or private hospital, except accident and emergency. Only public hospitals for admission services
Health services	Ambulatory and inpatient care including accident and emergency and rehabilitation services, and preventive and health promotion services Note: prevention and health promotion for beneficiaries in all three schemes	Both ambulatory and inpatient care, including accident and emergency and rehabilitation services. No preventive services are provided, but NHSO manages prevention and health promotion for beneficiaries in all three schemes	Both ambulatory and inpatient care, including accident and emergency and rehabilitation services. No preventive services are provided, but NHSO manages prevention and health promotion for beneficiaries in all three schemes
Medicines	Limited; only essential drugs (ED)	Limited; only ED	Limited; only ED, but the use of nonessential (NED) can be approved by 3 doctors in the hospitals
Maternity (Delivery)	Limited; only 2 deliveries	Limited; only 2 deliveries and payment in cash (lump sum 13 000 Baht per delivery inclusive of ANC and PNC services)	No limit
Renal replacement therapy (RRT)	Covered and start with peritoneal dialysis, patient has to pay if choose haemodialysis	Covered; both haemodialysis and peritoneal dialysis, liable for copayment if beyond the ceiling	Covered; both haemodialysis and peritoneal dialysis, liable for copayment if beyond the ceiling
Antiretroviral therapy for HIV/AIDS	Included	Included	Included
Organ transplantation	Kidney and bone marrow covered for treatment of certain cancers	Kidney and bone marrow covered for cancer; corneal covered	No exclusion list
Dental care	Covered, both preventive and curative dental services	Reimburse no more than twice a year (max 300 Baht/treatment)	Covered, no limitation specified
Medical devices	Covers 270 items	Covers 88 items	Covers 387 items

UCS: Universal Coverage Scheme; SHI: Social Health Insurance; CSMBS: Civil Servant Medical Benefit Scheme; ANC: antenatal care; PNC: postnatal care.

Source: Synthesis by the Author

All services, diseases and health conditions are covered by the health insurance schemes, with a few exceptions such as cosmetic surgeries, and services of unproven effectiveness such as stem-cell treatment. Initially in 2001, antiretroviral treatment and renal-replacement therapy for end-stage kidney disease patients were excluded from the benefit package, but these were added in 2003 and 2007, respectively. The benefits packages for beneficiaries of each public health insurance scheme are summarized in Table 2.2. The benefit packages differ as a result of different paces of historical evolution of these schemes. For example, the CSMBS offers a generous benefit package to civil servants and their dependents and its fee-for-service reimbursement model for outpatient services escalates the expenditure of CSMBS to 5 to 6 times higher than those of the other two schemes.

2.8.2 Regulation and governance of providers

In 2008, some 77% of hospitals were public, the vast majority owned by the MOPH, a few by other ministries, while 22% were private, 1% state enterprises and local governments. There were 17 671 private clinics, mostly single-practice, and 17 187 private pharmacies in 2009 (Wibulprolprasert et al., 2011b), almost all located in urban municipalities.

Each ministry and local government has its own regulation mechanisms for its own hospitals. Private health medical institutions are licensed and relicensed annually under the Sanatorium Act 1998 (Medical Premises License Act) in line with stipulated quality and standards. The Bureau of Sanatorium and Art of Healing, Department of Health Service Support, MOPH is responsible for overseeing all private health-care providers. Historically, the Medical Premises Act only applies to the private sector, all public providers are exempt from licensing.

2.8.3 Registration and planning of human resources

Several agencies are involved in the planning and management of human resources for health (HRH): the MOPH, the main employer of health-care workforce; the Ministry of Education, overseeing training institutions, the National Economic and Social Development Board for macro-economic policy, the Civil Service Commission on public-sector employment, and postgraduate training; the Bureau of Budget, overseeing the annual budget proposal; and the professional councils responsible for licensing and or relicensing of professionals. All these organizations work in

isolation, lacking coordination and synergies (Jindawatana, et al., 1996). In 2006, the MOPH led the development of the National Strategic Plan for HRH 2007–2016 in consultation with partners. The Plan was discussed in the National Health Assembly, from where a Resolution was submitted and endorsed by the Cabinet in April 2007. A National HRH Committee, comprised of representatives of all HRH-related organizations, was established to facilitate the implementation of this National Strategic Plan. It also serves an advisory role to the Cabinet on HRH (MOPH, 2009).

The First National Medical Education Forum (NMEF) was convened in 1956. Since then, the Forum has been held every seven years to review progress and redirect medical education in line with country health and health system needs and the requirements of medical curriculum reforms. The Forum includes medical education constituencies and the MOPH. As most decisions by the NMEF have concentrated on medical curriculum reform, it has lost sight of the increasing proportion of specialists despite concerns voiced by the MOPH.

All training institutions, public and private, must be accredited by Ministry of Education, while curricula are accredited by concerned professional councils before student recruitment. The numbers of training institutions and their graduates in 2009 are summarized below (Leerapan & Aathasit, 2005):

- **Medical doctors:** 19 medical schools – 18 public, 1 private. Average annual number of medical doctor graduates between 2000 and 2009 was 1423.
- **Dentists:** 10 dental schools – 9 public, 1 private. Average annual number of graduate dentists between 2000 and 2009 was 415.
- **Pharmacists:** 14 pharmacy schools – 11 public, 3 private. Average annual number of graduate pharmacists between 2000 and 2009 was 1159.
- **Nurses:** 75 nursing schools – 65 public, 10 private. Average annual number of graduate nurses between 2000 and 2009 was 5091.

The professional councils – Medical, Dental, Pharmacy and Nursing and Midwifery – are responsible for their particular national licence examination as required by all students to obtain licence for professional practice, in order to ensure similar qualification and professional standard regardless of their training institutions.

2.8.4 Regulation and governance of pharmaceuticals

The Thai Food and Drug Administration (FDA), of the MOPH is a national regulatory agency of pharmaceutical products which, according to Thai laws, include modern and traditional medicines and biological preparations such as vaccines, toxoids and blood derivatives (Drug Act B.E. 2510 (1967)). Regulation of psychotropic substances and narcotics with therapeutic uses also falls under responsibility of the FDA. To undertake pre- and postmarketing control of all categories of pharmaceuticals, the FDA works closely with the Department of Medical Sciences (DMSc) of the MOPH, which is the national laboratory agency. Furthermore, the FDA serves as secretariat of the National Committees for Drugs, Psychotropic Substances, and Narcotics, the missions of which are to determine national policies and guidance in relation to regulation of these products.

Entry to the market

Market authorization is required for all pharmaceuticals, either locally manufactured or imported. Exceptions have been given to the importation and production managed by public agencies, including MOPH departments, the Government Pharmaceutical Organization (GPO), the Defence Pharmaceutical Factory and the Thai Red Cross Society. Production of medicines in hospitals and freshly prepared products for individual patients are also exempt from the regulation as stated in the Drug Act (Drug Act B.E. 2510 [1967]). However, the production of psychotropic substances and narcotics for any purposes has to follow the provisions in respective laws. It should be noted that despite the exception, the GPO –the MOPH-controlled state enterprise – voluntarily follows the market authorization requirements.

Market approval of pharmaceutical products generally involves assessments of their safety, efficacy, effectiveness and quality (Teerawattananon et al., 2003). Importers or manufacturers of particular products are required to submit application for registration, together with the content of container labels and package leaflets, drug formula (active and nonactive ingredients and their amounts), and dossiers showing that the products meet legal requirements. For new drug products, i.e. products containing new chemical entities, new combinations or those with new routes of administration, evidence from preclinical and clinical studies are mandatory submission.

Modern medicines are classified into three categories, over-the-counter (OTC) drugs, dangerous drugs, and specially controlled drugs. OTC products can be distributed through any premises, without requirement for the qualifications of the sellers (Teerawattananon et al., 2003). Dangerous and specially controlled medicines are available only in pharmacies, clinics and hospitals, and may be only dispensed by pharmacists or medical doctors. Dispensing of specially controlled drugs requires a physician's prescription. The sale and dispensing of traditional medicines is allowed by traditional drug stores under supervision of licensed traditional doctors or pharmacists. Advertisement of pharmaceutical products of all categories is regulated by the FDA (Teerawattananon et al., 2003). Advertising medicines requires FDA approval of the materials, sounds and related scripts. Only OTC and traditional drugs can be advertised to the general public.

Quality of medicines

Registration of all locally produced or imported medicines requires information on their specifications including quality standards, protocol for quality assurance and testing be submitted to the FDA. Bioequivalence data are required in case of generic drugs whose original products have obtained approval in the country since 1991. Product samples submitted with registration files are sent to the DMSc laboratory for testing of their quality and analysis.

The quality of pharmaceutical products manufactured in Thailand is ensured through the enforcement of Good Manufacturing Practice (GMP); this is a legal requirement for manufacturing premises, including the infrastructure, personnel, manufacturing and quality-assurance processes. Compliance with GMP standards among local drug producers is inspected by FDA officials. Regarding manufacturers in foreign countries, the Thai authority requests GMP certificates issued by national regulatory agencies in the country of origin. At the postmarketing phase, FDA inspectors and pharmacists in Provincial Health Offices, in collaboration with DMSc scientists, monitor the quality of pharmaceutical products on the market through testing of samples from the shelves. Container labels, leaflets, expiration, registration status and storage conditions are also inspected during the official visits to drug stores.

Pharmaco-vigilance as recommended by the World Health Organization (WHO) is overseen by the FDA as an integral part of postmarketing control of medicines. Major sources of information on adverse drug

reactions (ADR) are mandatory reports by all health-care professionals in hospitals, clinics and pharmacies. At the same time, global evidence generated by the Upsala Monitoring Center contributes significantly to effective risk-management measures such as product withdrawal and revision of warnings/precautions illustrated on product leaflets. The FDA works closely with the MOPH Bureau of Epidemiology to conduct case investigation of all reportedly severe ADR and determine their causal relationship with specific products, and provide the evidence and recommendations to the appropriate subcommittee and the Drug Committee for appropriate actions (Health Product Vigilance Center, 1992). For new drugs, the manufacturers and importers are responsible for safety monitoring and reporting for at least two years after market approval (Jirawattanapisal et al., 2009). The monitoring period will be extended in cases where questions arise.

Pricing and market access

Price regulation of pharmaceutical products is not well established in Thailand (Jirawattanapisal et al., 2009). As a laissez-fair market, there was no mechanism in place to control retail and wholesale prices and margins; however, price negotiations are conducted daily at different levels, such as the Subcommittee for the Development of the National List of Essential Medicines (NLEM), the NHSO responsible for UCS as a strategic purchaser, and Pharmacy and Therapeutic Committee in individual hospitals. The reference pricing scheme for drugs on the NLEM is promulgated by the appropriate subcommittee under the Committee for National Drug System Development. However, reference prices recommended by this scheme are effective only for drugs purchased by government hospitals and health programmes.

The NLEM is referred to as the pharmaceutical benefit package by all three health insurance schemes (CSMBS, UCS and SHI). The formulation of this List is undertaken by a subcommittee under the Committee for National Drug System Development. The drugs to be listed must have market approval by FDA. The subcommittee reviews the safety, effectiveness and some elements concerning quality of the products, in comparison with drugs of the same category. Prices, health needs and burden of disease are also taken into account. Cost-effectiveness and budget impacts are analysed for expensive drugs.

In practice, beneficiaries of the CSMBS are privileged, as drugs outside the List – nonessential medicines (NEMs) – can be fully reimbursed

if their physicians consider them necessary. Patients covered by UCS and SHI are unlikely to obtain expensive NEMs, owing to incentives for cost containment. It is evident that medicines prescribed to members of CSMBS differ from, and are more expensive than, those acquired by beneficiaries covered by UCS and SHI.

At national level, there is no regulation regarding generic substitution. Although guidelines on this practice exist in public and private hospitals, significant variation occurs across settings (Tantai & Yothasamut, 2012). It has been argued that capitation payment applied by SHI and UCS and its consequence on budget constraints encourage the use of generic drugs, especially in hospitals; generic substitution is de facto applied extensively for beneficiaries covered by SHI and UCS (Tarn et al., 2008). In most settings, generic substitution is not allowed for particular drugs, such as life-saving ones and drugs with narrow therapeutic index.

Increased problems have been noted with direct sale, mail-order and internet pharmacies. Although selling medicines through these channels is prohibited by law, there is no effective solution to contain such practices.

As member of the World Trade Organization (WTO), Thailand has adopted a patent policy as suggested in the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPs). The Patent Act provides 20-year protection for both product and process of innovations, including pharmaceuticals. Although TRIPs flexibilities such as government-use licences are legalized according to Thai law, policy-makers are reluctant to introduce these measures to improve access to essential medicines, as the country has experienced strong protests from patent holders, associations of transnational pharmaceutical companies, including threatening trade sanctions by governments of industrialized countries (Wibulpolprasert et al., 2011a). To improve access to these patent products in public health emergencies, the government had successfully introduced TRIPs flexibilities on government use for a few antiretroviral medicines. Intellectual property protection beyond TRIPs, which will result in extension of period of market exclusivity and delayed market entry of generic products, has been sought by some countries through bilateral trade negotiations. Extension of market exclusivity beyond those agreed in the TRIPs has negative impacts on access to essential medicines (Akalephan et al., 2009).

Rational use of medicine (RUM) has long been a point of concern at country level, as efforts to combat irrational use first appeared in the National Drug Policy of 1981. Since then, several measures have been developed and introduced with the aims of changing professional practice and consumer behaviour. Such efforts involve the introduction of regulatory, management, education and information measures. Despite this, inappropriate use of pharmaceutical products is prevalent in communities and health-care facilities. Only a few measures, especially those connected to health-care provider payments, have proved effective (Tantivess, Teerawattananon & Mills, 2009). Pilots such as Antibiotic Smart Use have been successful but still need to be scaled up nationwide (Sumpradit et al., 2012). Drug-use evaluation (DUE) and preprescription authorization are recommended and enforced in hospitals as conditions for prescribing a number of very expensive medicines on the NLEM. The measures are successful in preventing irrational use of these drugs among UCS beneficiaries.

The pharmaceutical industry sponsoring medical professionals for domestic and international medical conferences and other unethical market promotion activities has been regularly reported (Layton et al., 2005). These unethical practices and involvement by some practitioners – violating trust in and integrity of health-care professionals – led to the National Health Assembly adopting a resolution in 2009 to terminate the unethical practices of drug market promotion, and subsequent establishment of ethical criteria for drug promotion in Thailand (National Drug Development Committee, 2012) with reference to the WHO ethical criteria (WHO, 1998). The Code of Conduct applies to all concerned parties such as prescribers, dispensers, pharmaceutical industry, who are all obliged to observe and implement the Code. The National Health Assembly is responsible for monitoring progress of implementation of the Code, especially on its effectiveness and responses from all stakeholders.

2.8.5 Regulation of medical devices

The Medical Device Control Division of the FDA is responsible for regulating, controlling and monitoring the use of medical devices in Thailand (Teerawattananon et al., 2003). By law, a device is licensed in the market if it achieves the performance intended by the manufacturer and meets standards for personal safety. Unlike pharmaceutical products, there is no requirement for clinical efficacy evaluation from randomized control trial before market approval. The Medical Device Control Division also controls postmarketing, such as inspection of manufacturing factory and implementation of appropriate measures when the unsafe medical devices are reported.

According to the revised Medical Device Act B.E.2551 (2008), the assessment of the social, economic and ethical impact of medical devices with a cost exceeding 100 million Baht (US\$ 3.3 million) is mandatory before market authorization (Teerawattananon et al., 2009). The MOPH needs to designate HTA units in- and outside the country to conduct these assessments, the costs of which shall be shouldered by the industry. There is neither a price ceiling nor a reference set for medical devices such as orthopaedic instruments or services provided such as computed tomography (CT) scanners. Price is determined entirely by market demand and supply. There is no reimbursement list for medical devices. Their distribution is controlled implicitly by the suppliers. The coverage of use of medical devices varies greatly across the three public health insurance schemes. The CSMBS covers almost all medical devices using a fixed-rate fee-for-service payment, whereas the UCS and SHI schemes include use of medical devices as part of their basic health-care packages and support based on prepaid capitation. As a result, inequitable access to and use of expensive medical devices has been widely noted, for example, CT scans, magnetic resonance imaging (MRI) and mammography between CSMBS and UCS and SHI beneficiaries (Teerawattananon et al., 2009).

2.8.6 Regulation of capital investment

During the early phase of health-care infrastructure development in Thailand, the National Economic and Social Development Board and the MOPH played a pivotal role in planning for capital investment through the use of the 5-year National Economic and Social Development Plan. As a result, Thailand rapidly built up good geographical coverage of rural health-care infrastructures within the 25 years from the first Plan (1961–1966) to the fifth Plan (1982–1986) (Wibulprolprasert, 2002). A capital investment plan was developed later based on demand of public hospital managers, or local resources mobilized by reputable monks, with reference to criteria such as standards of hospitals at different levels. During the last two decades, the government has established specific policies to improve health-care infrastructures and these have led to a substantial increase in capital investment budget. These policies included:

- decade of health-centre development (1992–2001);
- health-care infrastructure investment plan under economic stimulus policy (2010–2013)(National Economic and Social Development Office & MOPH, 2009).

Before the implementation of the UCS in 2002, the highest proportion of capital investment budget to the total health budget was 34.0% in 1997 and the average proportion of capital investment budget to the total health budget during 1994–2001 was 21.16% (Na Ranong & Na Ranong, 2005). The UCS totally changed the planning and capital budget allocation. Budget for the UCS was calculated on a per-capita basis (capitation rate). Part of the capitation budget covers capital replacement or depreciation cost, calculated as 10% of budget for ambulatory and inpatient care (Prakongsai et al., 2002) and this was intentionally misinterpreted by the Bureau of Budget as a capital investment budget and bar for new capital investment in the MOPH hospitals for some years. The NHSO managed this capital-replacement budget by transferring part of it directly to their contracted health-care providers and keeping some to manage at the central level to strengthen health-care infrastructures at the PHC level and some excellent centres such as trauma, cardiac and cancer centres in consultation with the MOPH. This capital replacement budget was reduced from 10% of curative budget to 6% in 2012 (Health Insurance Information Service Centre, 2012). The MOPH complained that the new system operated after the establishment of the UCS substantially decreased its total capital investment budget. The Bureau of Budget then allowed the MOPH to request a capital investment budget directly from the government.

Private-sector investment in infrastructure is usually focused in urban provincial areas where people have high purchasing power. The government has a policy to support private investment in poorer areas where there are inadequate health-care facilities through corporate income tax incentives for eight years and import duty exemption for major medical devices (Thailand Board of Investment, Undated).

2.9 Patient empowerment

2.9.1 Patient information

Thai people can obtain health information through various media. The most popular media for rural people are television (29.7%), newspapers (17.7%), radio (16.3%), personal contacts (8.8%), magazines (8.2%), village broadcasting service (7.7%), leaflets (6.1%) and posters (2.8%). When the people are sick, they seek advice from health personnel (90.6%) and friends/relatives (28.5%). People's opinions on the accuracy of health information varies according to its source, with health personnel as the most trusted (85.3%) followed by television/radio (10.7%), journals (3.5%) and village broadcasting service (0.5%) (Uphayokin, et al. 2005).

Literacy among Thai students is low compared to other countries in the region such as Singapore, Republic of Korea, People's Republic of China and Japan. This would unavoidably affect the health literacy of the Thai population and limit access to understanding and use of information on ways to promote and maintain good health. This was confirmed by the recent study: the majority of Thai people could not access health information and were not aware of their rights, and health-care providers provided limited information to their patients since they were afraid of being sued by the patients using that information (Wongchai, et al. 2008).

2.9.2 Patient choice

Patients can go to any health-care facility if they pay the cost of health services from their own pockets. The PHC gatekeeping system started in the low-income Medical Welfare Scheme (MWS) in 1975 and was extended to the Health Card Scheme (HCS) in 1984 (Thamatacharee, 2001) and the UCS in 2002. The SHI requires its insured persons to register with hospitals with more than 100 beds as their main contractor. SHI members have to use the contractors they are registered with as first-contact health-care providers, except in case of accidents and emergency. This exception is also applied to the beneficiaries of the UCS. The members of CSMBS can use health services in any public health-care facility and in private health-care facilities under certain conditions. The Government adopted a policy to allow every Thai citizen to access emergency medical services at any health-care facility, both public and private hospitals, from 1 April 2012.

2.9.3 Patient rights

Patient rights have been guaranteed by several mechanisms. Access to essential health services has been considered as a basic right since the promulgation of the Thai Constitution in 1997. Professional organizations including the Medical Council, the Nursing and Midwifery Council, the Pharmacy Council and the Dental Council have adopted the Declaration of Patient's Rights since 1998 and request all health-care providers to ensure that patient rights are fully observed in their clinical and professional practices (Faculty of Medicine, Chiang Mai University, Undated). The enactment of the National Health Act 2007 provided a legal framework to guarantee patient rights in many sections of Chapter 1. In summary patient rights include:

- the right to use essential health services without discrimination by social status, race, nationality, religion or others factors;

- the right to get adequate information before obtaining health service and the right to consent to or refuse treatment except in case of emergency life-threatening situation;
- the right to get urgent attention and immediate relief in case of critical condition or near death regardless of whether the patient requests assistance;
- the right to know the full name and speciality of the health-care provider who provides health service to them;
- the right to request a second opinion and opt for another health-care provider;
- personal health information shall be kept confidential – the only exceptions being with the consent of the patient or due to legal obligation;
- the right to demand complete information regarding their role as subjects in research and the associated risk, in order to make informed decision to participate in, or withdraw from, research carried out by a health-care provider;
- the right to know and demand full and current information about their medical treatment as in the medical record;
- the father/mother or legal representative may use their rights on behalf of a child under the age of 18 years or who is physically or mentally handicapped whereby they cannot exercise their rights;
- the right to live in a healthy environment;
- health of women, children, disabled persons and older people shall be appropriately promoted and protected;
- the right to request for an assessment and participate in the assessment of health impact resulting from a public policy; and
- the right to make a living will in writing to refuse health service which is provided merely to prolong their terminal stage of life or to stop severe suffering from illness.

2.9.4 Complaints procedures (mediation, claims)

If patients are harmed, injured or suffer adverse outcome from iatrogenic medical services, they or their relatives can complain to the Medical Council and request an investigation. The Medical Council can initiate the investigation process by itself without any request from the victim,

or publicity in the media. This mechanism aims to protect patients by ensuring medical and ethical standards of physicians.

Among the three public health insurance schemes, the UCS has a clear legal framework, well-established complaint-handling mechanisms and enforcement by NHSO. UCS beneficiaries can complain through various means such as call centre with a 24-hour hotline number, email, letter, facsimile or contact the office directly. In 2010, there were 4186 complaints, the majority (15.3%) of which were issues related to the standard of medical services. As mandated by the law, all complaints must be investigated and settled within 30 days; 97% of the complaints were completed by 30 days in 2010. Some of these complaints (0.39%) needed to be investigated by the Health Service and Quality Standards Committee, a national committee established by the National Health Security Act 2002, and health-care providers may be penalized if they violate the law (NHSO, 2011b).

However, the Social Security Office sets up a complaint-handling system for SHI members without a clear legal framework. SHI members can seek information and complain through call centre hotline, letter or website; the SHI hotline received about 2.6 million calls in 2012, covering all benefits under the Social Security Act including social health insurance. While civil servants and their dependents have a generous benefit package, there is no effective system for handling complaints (Hawkins, Srisasalux & Osornprasaop, 2009).

2.9.5 Public participation

Public participation is an essential component of the UCS. There are representatives of civil society groups on both the National Health Security Committee and Regional Health Security Committees to oversee UCS implementation. In addition, there is a specific national subcommittee and a bureau within the NHSO to support public participation. Initiatives that support public participation include establishment of health insurance-coordinating centres in 104 communities, establishment of six patient groups and their supported networks, and establishment of community health funds with matching funds from local government budget. In 2010, there were 5508 community health funds nationwide, coverage of 70.8% of local authorities (NSO, 2012).

There is less participation in the governance bodies of SHI and CSMBS. The Social Security Committee is a tripartite governance, consisting of 15

members, namely five government representatives from the Ministry of Labour, Ministry of Finance, MOPH, Budget Bureau and the secretary general of the Social Security Office; five employee representatives (all trade union representatives); and five employer representatives. The CSMBS was administered by the Comptroller General Department (CGD) of the Ministry of Finance. As CGD is a department answerable directly to the director general, there is no need for a governing body; however, it has an advisory board representing government and a few CSMBS members, but neither civil society nor health-care providers are represented.

The NHSO also conducts a satisfaction survey of health-care providers and beneficiaries, annually by outsourcing an independent polling agency affiliated with Assumption University. From 2003 to 2010, satisfaction of beneficiaries on the result of their treatment was very high (90%) and stable. Satisfaction of health-care providers with the system was lower (6 out of total 10), but improving trend was noted (NSO, 2012).

2.9.6 Patients and cross-border health care

Thailand is a leading Asian country for medical tourism. In 2007, there were 1.4 million international patients including medical tourists, general tourists and foreigners working or living in Thailand or neighbouring countries. Unlike general tourists and expatriates, medical tourists are increasing at a rapid pace – from almost none to 450 000 a year in less than a decade (Na Ranong & Na Ranong, 2011). The government actively promoted medical tourism for a decade, but it was implemented mainly by private hospitals. Recently, many university hospitals have requested additional budget to invest in infrastructure to respond to medical tourists. Civil society groups have expressed concerns on the negative impact of this policy on access to care by Thai citizens, especially when Thailand still has a shortage of physicians; this issue is still contentious and under public debate, and has been brought to the attention of the National Health Assembly (National Health Commission Office, 2010).

3 Financing

Chapter summary

When Thailand achieved universal health coverage in 2002, public expenditure on health gradually increased from 63% in 2002 to 77% of total health expenditure (THE) in 2011. Out-of-pocket (OOP) expenditure reduced from 27.2% to 12.4% over the same period. The major sources of funds are from general tax, followed by direct OOP payment, social health insurance and private insurance premiums. External sources were insignificant, less than 0.5% of THE in 2011. There was a significant increase in general government health expenditure from 8–11% of general government expenditure in 2002 and 2003, to about 11–13% in 2006–2010. Curative expenditure dominates total health spending (about 70% of total), of which 30% is for inpatient services and 40% for outpatient services. Expenditure for prevention and public health services went down to 4.5% of total personal health-care expenditure in the Universal Coverage Scheme (UCS) in 2008; the Governing Board of the National Health Security demanded achievement of 10% of overall UCS expenditure by 2011, as UCS manages health promotion and diseases prevention for the whole population (not only UCS members). By 2010, budget allocation to prevention and health promotion managed by NHSO has increased to 11% of the capitation budget formula.

Thailand legislated an earmarked sin tax for health promotion, using 2% additional surcharge on tobacco and alcohol excise tax for campaigning on various key health risks such as tobacco, alcohol, HIV/AIDS, noncommunicable diseases and road safety.

By 2002, the entire population was covered by the three public health insurance schemes – civil servants and their dependents by Civil Servant Medical Benefit Scheme (CSMBS), private-sector employees by the Social Health Insurance scheme (SHI), and the rest of the population by the UCS. This resulted in three main public purchasers with the purchaser-provider split fully implemented; supply-side financing was fully replaced by demand-side financing. Thailand applied a mix of provider payment

methods, though close-ended payment is dominant, notably capitation for outpatient payment was applied by SHI and UCS, while fee-for-service is used by CSMBS outpatient payment. Diagnosis-related group inpatient payment was widely applied by CSMBS and UCS though with some variations, and partially applied by SHI. Fee-for-service reimbursement model was generally applied by private voluntary health insurance though coverage is still low – an insignificant proportion compared to the three main public insurance schemes.

3.1 Health expenditure

Evidence from the Thai National Health Accounts (Thai NHA Working Group, 2013) indicates that total health expenditure (THE) as a proportion of gross domestic product (GDP) has not changed much: it was 3.5–4.5% between 1994 and 2012 [see Table 3.1]. THE per capita increased from US\$ 86 in 1994 to US\$ 256 in 2012.

Table 3.1 Total health expenditure and selected indicators on health spending, 1994–2012, current year prices

Indicator	1994	2000	2001	2002	2005	2008	2009	2010	2011	2012
Total health expenditure (THE (million Baht)	127 655	167 147	170 203	201 679	251 693	360 272	377 226	392 368	434 237	512 388
THE as proportion of GDP	3.5%	3.4%	3.3%	3.7%	3.5%	4.0%	4.2%	3.9%	4.1%	4.5%
Public expenditure as proportion of THE	45%	56%	56%	63%	64%	76%	74%	75%	77%	76%
Private expenditure as proportion of THE	55%	44%	44%	37%	36%	24%	26%	25%	23%	24%
THE per capita (Baht per capita)	2 160	2 701	2 732	3 211	4 032	5 683	5 938	6 142	6 777	7 949
THE per capita (US\$)	86	67	61	75	100	171	173	194	222	256
Exchange rate (Baht per US\$)	25	40	44	43	40	33	34	32	30	31

Source: Thai NHA Working Group (2013).

The proportion between government and private (nongovernmental) financing sources experienced two significant shifts, first in 1997 after the Asian financial crisis and second in 2002 after the introduction of Universal Coverage Scheme (UCS). Prior to 1997, the share of public

health financing sources ranged from 45% to 47%. After the economic crisis, despite all the government budget cuts, the health budget was firmly protected, and the share of public financing sources increased to approximately 54–56% from 1997 to 2001. As a result of UCS implementation in 2002, the proportion of public financing sources increased considerably from 63% in 2002 to 77% in 2011; meanwhile, private health spending reduced significantly from 55% in 1994 to 23% in 2011. The Thai health system relies mainly on domestic funds; donor or development partner sources are negligible (less than 0.5% of THE).

Table 3.2 shows a consistent pattern of expenditure on curative services dominating the total health spending: 70% of THE, of which about 30% is for inpatient services and 40% for outpatient services. Note that medicines prescribed for inpatient and outpatient services are included in inpatient and outpatient services. Medical goods that are mainly paid for by households are self-prescription in private pharmacies, which has never exceed 6.5% of THE. Spending on capital formation substantially reduced from 13.7% of THE in 1994 to 5% in 2001, and stabilized at about 3–5% thereafter.

Prevention and public health services accounted for 7–8% of THE during 1994–2001. This increased sharply to 12.4% in 2002 when the UCS was launched, but declined gradually to 6.6% and 4.5% in 2007 and 2008, respectively. As the National Health Security Office (NHSO) is entrusted by the government to manage prevention and health promotion actions for the whole population, not only UCS members, the budget for prevention and health promotion was set at 10% of total personal health care at the inception of the UCS in 2001–2002; but the budget for the curative component has gradually increased, and the proportion of prevention and health promotion decreased. The NHSO Board had a clear direction to boost health promotion and public health services for the entire population to the level of 10% of total personal health services by 2011. By 2010, budget allocation to prevention and health promotion managed by NHSO has increased to 11% of the capitation budget formula.

Table 3.2 Health-care spending profile, percentage of total health expenditure, 1994 to 2012

	1994	2000	2001	2002	2005	2008	2009	2010	2011	2012
Inpatient care ^a	26.2	30.8	32.6	30.2	33.8	36.2	31.0	30.4	31.9	34.3
Outpatient care	42.6	40.7	40.3	43.8	43.3	42.3	41.2	42.1	40.6	29.2
Ancillary services	0.0	0.1	0.2	0.3	0.4	0.2	0.1	0.1	0.2	0.2
Medical goods ^b	6.5	6.3	6.1	4.0	4.3	4.4	4.9	5.2	4.9	5.8
Prevention & public health services	7.1	8.2	8.0	12.4	4.9	4.5	9.7	10.3	9.4	6.2
Health administration	3.9	7.9	7.9	4.8	8.9	6.8	7.3	7.2	5.9	12.6
Other health-care services not elsewhere classified (n.e.c.) ^c	-	-	-	-	-	-	-	-	-	0.1
Total recurrent	86.3	94.1	95.0	95.4	95.6	94.4	94.2	95.3	92.9	88.4
Gross capital formation	13.7	5.9	5.0	4.6	4.4	5.6	5.8	4.8	7.1	11.6
THE	100	100	100	100	100	100	100	100	100	100

THE: total health expenditure.

Note: a including long-term care and rehabilitation services; b Expenditure on medicines and medical devices paid by households and mainly self-prescribed; c This item was proposed by a new guideline in the 2011 System of Health Account, and it was introduced into the Thai national health account in 2012.

Source: Thai NHA Working Group (2013).

In 2011, spending on ambulatory services (outpatient care) and inpatient care was the lion's share, at over 70% of THE; prevention and public health services shared 9.4%. The proportions of health administration and capital formation were 5.9% and 7.1%, respectively. The ancillary service was a tiny amount (0.2%), due to the fact that most expenditure on ancillary services was included in outpatient care; also expenditure on long-term nursing care was included in inpatient and rehabilitation services and was not a separate item.

3.2 Sources of revenue and financial flows

3.2.1 Sources of funds

The Thai health system has been financed by a mixture of financing sources, namely general taxes, social insurance contributions, private insurance premiums and direct out-of-pocket (OOP) payments. The introduction of the UCS in 2001, which was fully implemented by 2002, significantly increased public share in THE, while household OOP payments significantly reduced (Table 3.3).

Table 3.3 Health-care spending by source of fund, percentage of total health expenditure, 1994 to 2012 (selected years)

	1994	2000	2001	2002	2005	2008	2009	2010	2011	2012
Government general expenditure	41.7	50.8	49.6	57.7	56.2	68.7	66.3	66.6	70	68.4
Social Health Insurance	2.9	5.3	6.6	5.6	7.9	6.9	7.6	7.7	7.2	7.3
Out-of-pocket	44.5	33.7	33.1	27.2	27.2	14.7	15.4	14.2	12.4	11.6
Private voluntary health insurance	1.8	3	3.1	2.9	3.3	3.8	5.1	5.6	4.6	4.7
Traffic insurance	2.4	2.6	2.8	2.5	2.3	2.6	2.2	2.3	2.3	1.8
Employer benefit	6.2	4	4.1	3.3	2.3	1.6	2.1	2.1	1.9	1.6
Non-profit-making institutes	0.5	0.6	0.5	0.6	0.5	1.4	0.9	1.1	1.1	0.9
Rest of the world	0.1	0	0.1	0.3	0.3	0.3	0.3	0.3	0.4	3.8
Total	100	100	100	100	100	100	100	100	100	100
Million Baht	127 655	167 147	170 203	201 679	251 693	356 275	371 832	384 902	434 237	512 388

Source: Thai NHA Working Group (2013).

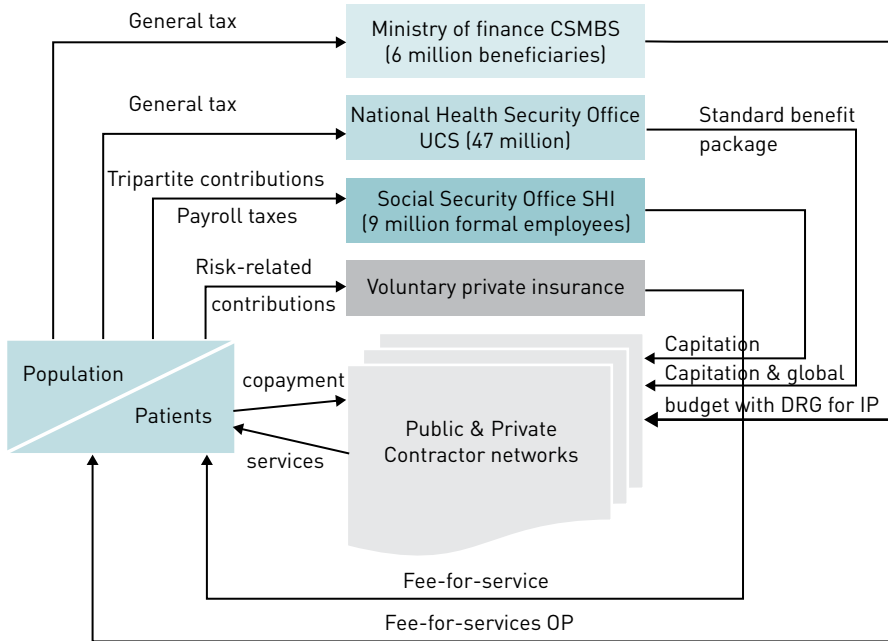
Figure 3.1 conceptualizes the relationships among three stakeholders: (a) the population who are responsible to pay personal income tax or corporate tax (in case of employer) or indirect tax through consumption items such as 7% value added tax or contribute to Social Health Insurance (SHI) fund if they are private-sector employees or employers (these beneficiaries may fall ill and become patients); (b) the three main public

purchaser organizations that manage the three schemes; and (c) the public and private health-care providers throughout the country.

After achieving universal health coverage in 2002, there have been three public insurance schemes for the entire population.

In addition to these three main public fund managers for the whole population, voluntary private insurance also provides insurance coverage on a competitive basis mostly to the high-income earners. Note that in Figure 3.1 voluntary insurance schemes usually reimburse the patients after they have paid up front, and do not directly deal with health-care providers.

Figure 3.1 Health financing and service provision in Thailand after achieving universal coverage in 2002



CSMBMS: Civil Servant Medical Benefit Scheme; DRG: diagnosis-related group; IP: inpatient; OP: outpatient; SHI: Social Health Insurance; UCS: Universal Coverage Scheme.

Source: Synthesis by the Author

3.2.2 General government health expenditure (GGHE)

Between 1995 and 2007, GGHE fluctuated within the range of 7–11% of general government expenditure (GGE); while GGE increased from 17% of GDP in 1995 to 23% in 2010 with fluctuation in some years (Table 3.4). There was a large increase in GGHE as percentage GGE from 8% in 2002 to 11% in 2003, as Thailand implemented the UCS, and thereafter was about 11–13%.

Table 3.4 Key national health account parameters on GGHE, 1994–2010

	Gross domestic product, GDP (million Baht)	General government consumption expenditure, GGE (million Baht)	GGE as percentage of GDP	GGHE, excluding SHI (million Baht)	GGHE, excluding SHI, as percentage of GGE
1995	4 186 212	712 860	17%	64 468	9%
1996	4 611 041	835 795	18%	77 537	9%
1997	4 732 610	1 046 851	22%	95 478	9%
1998	4 626 447	1 148 059	25%	86 055	7%
1999	4 637 079	1 219 891	26%	81 034	7%
2000	4 922 731	943 244	19%	84 924	9%
2001	5 133 502	1 062 437	21%	84 505	8%
2002	5 450 643	1 374 641	25%	116 325	8%
2003	5 917 369	1 127 931	19%	121 627	11%
2004	6 489 476	1 269 376	20%	132 575	10%
2005	7 092 893	4 02 682	20%	141 506	10%
2006	7 844 939	1 534 263	20%	176 653	11%
2007	8 525 197	1 769 209	21%	208 543	12%
2008	9 080 466	1 922 500	21%	244 779	13%
2009	9 041 551	2 112 177	23%	246 669	12%
2010	10 104 821	2 318 115	23%	256 247	11%

Source: WHO (2013).

Taxation is the main source of the Thai Government's revenue, collected by three departments of the Ministry of Finance –Revenue Department, the Excise Department for excise tax, and Customs Department. Their collections account for 85–90% of total government revenue (see Table 3.5). The Revenue Department is responsible for collecting personal and corporate income tax and value-added tax, it contributes more than half of the total tax collected.

In the tax revenue structure, the direct tax (personal income and corporate tax) is the largest portion, followed by consumption tax (including value-added tax and a very limited portion of business tax paid by smaller enterprises), excise tax, and import and export duties. However, indirect tax combining all items has a larger share than direct tax. This tax profile did not change between 1994 and 2007, except in the years 1998 and 1999, two years after the 1997 Asian economic crisis, when consumption tax was larger than direct tax due to corporate shutdown, unemployment and reduced disposable income. The main source of direct tax is personal income tax, which applies progressive tax rates (Table 3.6).

The Revenue Department has improved the effectiveness of tax collection with fully electronic submissions by March every year for personal income tax. However, the tax base is still narrow. There is no political will to introduce property and inheritance tax though these were discussed by Parliament in 2009.

There is only one earmarked tax to health care: 2% levies on tobacco and alcohol consumption is transferred by the Excise Department on a daily basis to the Thai Health Fund. The Fund is governed by a board chaired by the prime minister, aiming to campaign against tobacco, alcohol and for active health-promoting activities by funding NGO, civil society and government agencies to strengthen the health-enabling environment (Tangcharoensathien et al., 2008).

Table 3.5 Structure of government revenue, 1994 and 2007

Year	A			A2		A2.1	A2.2	A2.3	B		C=A+B	
	Tax	A1	A2	Indirect tax	Consumption tax, including VAT	Excise tax	Import-export duties	Non-tax revenue	Total	Total (million Baht)		
1994	88%	29%	59%	23%	20%	16%	12%	100%	707 546			
1995	89%	30%	59%	24%	19%	16%	11%	100%	815 143			
1996	90%	32%	58%	25%	19%	14%	10%	100%	895 291			
1997	88%	31%	57%	26%	20%	11%	12%	100%	909 049			
1998	88%	28%	61%	33%	19%	8%	12%	100%	815 681			
1999	86%	28%	58%	29%	21%	8%	14%	100%	793 346			
2000	87%	30%	57%	26%	20%	10%	13%	100%	817 595			
2001	88%	31%	57%	26%	20%	10%	12%	100%	874 766			
2002	89%	31%	57%	26%	22%	10%	11%	100%	958 373			
2003	89%	31%	58%	25%	22%	10%	11%	100%	1 104 627			
2004	91%	34%	57%	27%	22%	8%	9%	100%	1 258 805			
2005	90%	35%	55%	28%	19%	7%	10%	100%	1 472 935			
2006	90%	38%	52%	29%	17%	6%	10%	100%	1 581 524			
2007	90%	39%	51%	29%	17%	5%	10%	100%	1 666 824			

Source: Fiscal Policy Office (2013).

Table 3.6 Progressive tax rates of Thai personal income tax^a

Taxable income (Baht per annum)	Tax rate (%)
0–150 000	Exempt
150 001–500 000	10
500 001–1 000 000	20
1 000 001–4 000 000	30
4 000 001 and over	37

Note: a Rates applicable from 2008 onwards.

Source: Revenue Department (2014).

Through annual budget allocation, general government health-care expenditure covers expenditures by Civil Servant Medical Benefit Scheme (CSMBS); UCS, which includes basic salary for all health staff (some additional payments are from general budget, some from hospitals' own revenues); capital investment of all public health-care facilities and contributions to the SHI, as part of the tripartite contributions.

3.2.3 Compulsory sources of financing

By law, there are three statutory financing sources in Thailand, SHI and Workmen's Compensation Scheme are payroll tax financing, while the Traffic Accident Protection Insurance Scheme is non-payroll tax financed.

Social health insurance

Comprehensive social protection (including medical benefit, death compensation, disability compensation, child allowance, unemployment and old age pension) was offered to private-sector employees through the enactment of Social Security Act in 1990. Short-term benefit including SHI component was implemented first in April 1991, while other long-term benefits such as child allowance, unemployment and old age pension were gradually implemented in a later phase. SHI covers employees in the formal private sector, excluding spouses and children, financed by tripartite contribution, equally from employee, employer and the government, and managed by the Social Security Office (SSO) of the Ministry of Labour.

Since the launch of SHI in 1991, the maximum salary for assessed contribution was fixed at 15 000 Baht per month and has not been increased since then. In 1991, the minimum wage was 3000 Baht per month. The rich-poor gap for contributory wage was five-fold. The minimum wage has been adjusted annually to catch up with inflation,

while the maximum salary has not been adjusted. Hence, there is not much difference in contributions between the minimum wage blue-collar workers and the high-income white-collar workers whose salary may have gone up to 80 000–100 000 Baht.

The four short-term benefits (medical, maternity, invalidity and death) require 1.5% payroll tax contribution by each of the three parties. Wage of each employee is reportable by employers and registered with SSO, so that at the end of each month, employers are liable to deduct 1.5% from employee payrolls and contribute an equal amount, all wire-transferred to the Social Security Fund. Employers who fail to comply are subject to fine and imprisonment. Government contribution to the fund is through an annual budget allocation to SSO. In some financial crunch years when the government has been unable to pay its contribution on time, the dues have been paid retrospectively.

In addition to a statutory insurance coverage for the employee, SHI also offers insurance coverage to voluntary members according to article 39, i.e. retirees or members who have lost their employment. Contribution for these members is solely by themselves; neither employer nor the government provides matching contribution. The population coverage of the voluntary component is low. To avoid duplication of coverage, these voluntary SHI members are not covered by UCS, as the national beneficiary dataset of the three public insurance schemes are shared daily across the three scheme managers.

Workmen's Compensation Scheme

The Workmen's Compensation Scheme (WCS) was formally established through Government Regulation on 16 March 1972 to cover medical expenditure related to work injuries and occupational diseases, death and disability compensation. After more than two decades of implementation, the 1994 Workmen's Compensation Act replaced the outdated 1972 regulation. It was managed by Workmen Compensation Office, part of the SSO. WCS is solely financed by employers on an annual basis. The contributions are assessed on total wages of employees multiplied by the contribution rate according to the type of business, which varies from 0.2% to 1.0% of wages based on risk rating of establishment type by industrial classification. The rate is used for the first four years of contribution. In the fifth year, this basic rate of contribution may increase or decrease depending upon the accident record (and hence size of compensation to employees) of each enterprise. This is termed the

experience rating. Higher accident records and higher claims from the fund result in a higher experience rate and thus the basic rate in the fifth year is adjusted accordingly. Similar to SHI, employer's failure to comply with the contribution is subject to fine and imprisonment.

Traffic accident protection insurance

The Traffic Victim Protection Act, promulgated in 1992, requires all vehicle owners to pay a premium to the scheme which covers treatment for traffic injuries and funeral grants for victims. Though it is a mandatory public scheme, it is managed by private for-profit insurance companies – the loss ratio of this scheme was low (approximately 40%), with huge administrative expenditure and profit. In the light of achieving universal health coverage in 2002, the provision of this Act duplicates the UHC; however, previous reform attempts have failed due to entrenched benefit across all stakeholders involved in this businesses: the insurance brokers, insurance companies, the Insurance Association of Thailand, and the Department of Insurance of Ministry of Commerce. There have been public complaints of inadequate attention by insurance companies, and disputes with hospitals on who is responsible for the bills.

3.3 Overview of the statutory financing system

3.3.1 Coverage

Population coverage

Since 2002, Thailand has had three main public health insurance schemes covering the whole population. The CSMBS is a fringe benefit to government employees and dependents to compensate the relatively lower salary (compared to market rates) in the public sector. This is a tax-financed noncontributory scheme. Government employees and pensioners and their dependents (parents, spouses and not more than three children less than 20 years old) are provided with a wide range of medical services.

The SHI protects 9-10 million private-sector employees in firms having more than one employee, for non-work related conditions, while the Workmen's Compensation Fund covers work-related injuries, illnesses or deaths. The SHI covers the individual worker, not their dependants, except maternity benefit which covers the spouse of a male beneficiary. It is a mandatory tripartite payroll-tax financed scheme equally contributed to by employers, employees and the government for non-work-related

illness and injuries, maternity and cash allowances for disability, old age pension and death compensation. The scheme started with coverage of employees in enterprises with more than 20 workers when it was launched in 1991. It was then gradually extended to cover enterprises with more than 10 employees, more than five and finally more than one worker in April 2003.

The UCS covers the population who are neither CSMBS nor SHI beneficiaries. In addition to three public health insurance schemes, private health insurance covers voluntary individuals, 2.2% of total population (National Statistical Office of Thailand, 2006). Table 3.7 gives the key characteristics of these schemes.

Table 3.7 Characteristics of public and private health insurance schemes

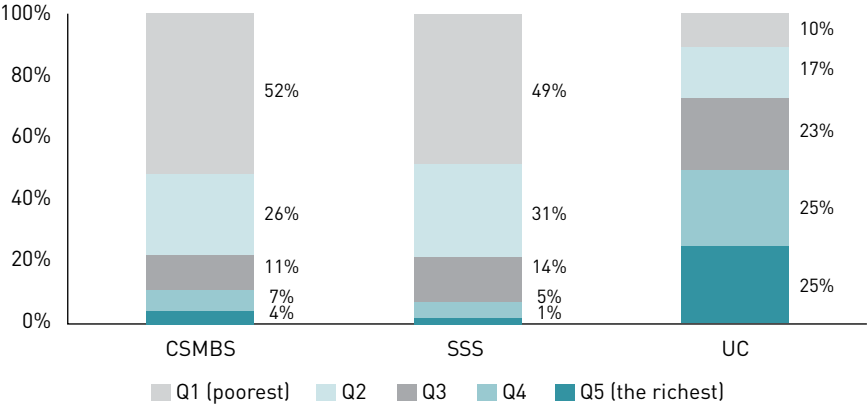
Insurance scheme	Population coverage		Financing source	Mode of provider payment	Access to service
Civil Servant Medical Benefit Scheme	Government employees plus dependants (parents, spouse and up to two children age <20 years)	9%	General tax, noncontributory scheme	Fee for service, direct disbursement to mostly public providers and DRG for inpatient care	Free choice of public providers, no registration required
Social Health Insurance	Private-sector employees, excluding dependants	16%	Tripartite contribution, equally shared by employer, employee and the government	Inclusive capitation for outpatient and inpatient services plus additional adjusted payments for accident and emergency and high-cost care, utilization percentile and high-risk adjustment	Registered public and private competing contractors
Universal Coverage Scheme	The rest of the population not covered by SHI and CSMBMS	75%	General tax	Capitation for outpatients and global budget plus DRG for inpatients plus additional payments for accident and emergency and high-cost care	Registered contractor provider, notably district health system
Private health insurance	Additional health insurance scheme for those who can afford premiums	2.2% (additional insurance)	Health insurance premiums paid by individuals or households	Retrospective reimbursement	Free choice of health-care providers, either public or private

DRG: diagnosis-related group.

Source: Synthesis by the Author

Analysis of the national household representative survey on health and welfare 2004 conducted by the National Statistical Office clearly shows that beneficiaries of the UCS are mostly poor, 25% belong to the poorest quintile, 25% belong to the poor quintile. In contrast, CSMBS covers mostly the rich group; 52% belong to the richest quintile. Among SHI members, 49% belong to the richest quintiles.

Figure 3.2 Scheme beneficiaries by income quintile, 2004



Source: Health and Welfare Survey 2004.

As the UCS applies the capitation contract model, beneficiaries are required to register with a preferred provider. UCS beneficiaries are required to register with the district health-care provider networks local to their residence. Due to geographical monopoly in rural areas, UCS beneficiaries have few choices. Normally, their provider network in their domicile districts is the MOPH district provider network (consists of district hospital and 10–15 health centres). For UCS members who reside in urban areas, there are choices of different public and private networks from which they are free to choose a network near their home. UCS members can change their provider network twice a year. This is to facilitate the internal temporary migration. To achieve this, applicants need to prove that they reside in that area through one of the following proofs: (a) certification letter by house owner where they reside, (b) by the village head or other community leader, or (c) by electricity or piped-water bills (showing their residency).

Beneficiaries are entitled to free services only from the registered provider network plus referral. Self-referral by patients is liable to full OOP payment. If the registered hospital cannot provide appropriate

treatment, patients are transferred to a higher-level health-care facility such as a provincial or regional hospital, and sometimes a university hospital without any cost sharing; the transferring provider is responsible to pay for services rendered by higher level of outpatient care except admission services. This design is called fundholder primary care network.

Similar to UCS, SHI beneficiaries are required to register with either a public or a private facility which is under a contract with SHI. They are free to choose their preferred facility and they have a right to change it twice a year.

With the application of fee-for-service payment for outpatient care, CSMBS beneficiaries have free choice to go to any public health-care facility to receive health services where they have to pay the bill and are reimbursed later. In 2007, CSMBS encouraged its beneficiaries to register with a preferred public hospital in order to receive outpatient services without having to pay upfront and claim reimbursement later, as the Scheme directly reimburses these providers.

Scope of benefit coverage

All three public insurance schemes apply a negative-list concept, in which all services are included except those defined on the negative list. Included in the negative list are services without proven clinical effectiveness or that are nonessential such as cosmetic surgery. The CSMBS benefit package includes outpatient services and hospitalization, medical and surgical services, emergency services, operations, expensive health services and medicines. However, the benefit package excludes some services such as cosmetic surgery and preventive services, except for annual health check-up. The benefit package of the three public health insurance schemes is similar. The exception is CSMBS, whose members were entitled to stay in a private ward while the major difference from the other two schemes (UCS and SHI) is the provider-payment method.

The 1990 Social Security Act article 62 states that the SHI benefit package includes diagnostic and medical treatments; hospitalization including room, nutrition and other treatments; pharmacy and medical supplies for which quality is not lower than those included by the National Drug list (Valee-Ittikul, 2002). These benefits apply to all diseases except self-inflicted illness or injuries. Health services must be provided until the patients have completely recovered. Conditions that are not a medical

necessity (e.g. for cosmetic purposes) and those that are considered too expensive are excluded from the benefit package. The Scheme applies some negative lists, i.e. non-medical necessity such as cosmetic purpose.

In the design of the benefit package for the UCS, the benefit package is very similar to that covered by the SHI. It provides a comprehensive benefit package, including ambulatory care, hospitalization, laboratory investigation, dental care, disease prevention, health promotion and many expensive medical services such as radiotherapy and chemotherapy for cancer treatments, surgical operations, and renal replacement therapy (RRT) for end-stage renal disease (ESRD) patients. Prescription drugs are also free of charge.

It should be noted that dental care differs between the UCS and SHI. The UCS limits dental conditions covered (e.g. extraction, filling, scaling and acrylic partial and full dentures). SHI limits the maximum reimbursement level per annum.

CSMBS and SHI do not cover prevention and health promotion. The UCS provides prevention and health promotion for the whole population by extension of health promotion and disease prevention to CSMBS and SHI members.

The benefit package of curative services of the three public health insurance schemes is more or less similar. However, the difference on provider payment method (fee-for-service under CSMBS and capitation under SHI and UCS) can lead to differences in services provided; for example, brand-name medicines outside the National List of Essential Medicines under CSMBS, while locally made medicines are normally used under UCS and SHI.

In the light of scientific advancement, new technologies such as pharmaco-genomics, surgical procedures and diagnostic imaging are expensive and unaffordable. Organisation for Economic Co-operation and Development (OECD) experiences have shown that technology advancement is an important cost driver (Oxley and MacFarlan, 1994) for which appropriate mechanisms should be introduced to generate evidence of cost-effectiveness and other information to guide decisions on technology adoptions.

The UCS Board is facing high demand from stakeholders, e.g. health-care providers and patient groups, over technology advancements (e.g. new medicines, diagnostics and interventions). Since 2009, a subcommittee on the benefit package has called for evidence-based policy decisions on specific interventions. The evidence comprises (a) selection of topics or interventions by stakeholders; (b) economic appraisal of the selected interventions based on incremental cost–effectiveness ratio (ICER); (c) budget impact analysis; and (d) other essential information, e.g. supply-side capacity to provide services. The evidence has been regularly produced twice a year by a research team from the International Health Policy Program (IHPP) and the Health Intervention and Technology Assessment Program (HITAP), and translated into policy process for the final decision made by the UCS Board. Examples of studied interventions are tobacco cessation services, adult diapers for elderly patients.

These processes of producing the evidence and evidence-informed policy decisions are transparent and based on scientific methodology. Importantly, a multi-stakeholder participatory process facilitates fine-tuning the benefit package for the UCS (Jongudomsuk et al., 2012; Mohara et al., 2012). It is hoped that this transparent, inclusive and accountable process of evidence-based policy decisions for benefit package will be applied to SHI and CSMBS sooner or later.

3.3.2 Collection

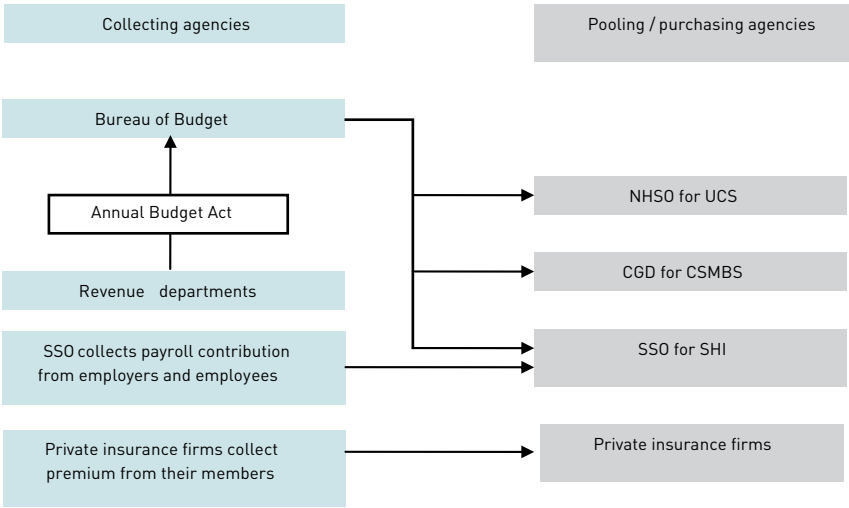
In 1994, the share of health-care spending by GGHE was less than the private spending (private health insurance and OOP) (Table 3.3). However, the proportion of GGHE gradually increased and overtook private spending, and became the dominant financing source after the 1997 Asian economic crisis and the emergence of the UCS in 2002.

SHI is not a major contributor in health-care expenditure. SHI accounted for 2.9% of THE in 1994 and gradually increased to about 7–8% during 2005–2010. It has never gone beyond 8% of THE due to the limited population of employees in the formal private sector. Household OOP was the lion’s share in 1994, at 44.5% of THE, until the 1997 Asian economic crisis and then slowly and steadily dropped to 13.9% in 2010. Funding from external sources is negligible. Details of revenue collection are described in sections 3.2.2 and 3.2.3.

3.3.3 Pooling of funds

There are four major pooling agencies, Comptroller General Department (CGD) for CSMBS, SSO for SHI, NHSO for UCS, and private insurance firms for voluntary health insurance schemes. These agencies play two roles – pooling funds and purchasing services on behalf of their respective members.

Figure 3.3 Flows of funds to pooling agencies



SSO: Social Security Office
 NHSO: National Health Security Office
 CGD: Comptroller Generals Department
 CSMBS: Civil Servant Medical Benefit Scheme
 SHI: Social Health Insurance
 Source: Synthesis by the Author

NHSO and CGD do not have collection roles; their funding for beneficiaries and administration is from government budget through the annual Budget Act. Collection is the responsibility of responsible revenue departments of the Ministry of Finance.

SSO plays a double role of revenue collection and pooling, through mandatory electronic transfer by employers of the payroll tax contributions on a monthly basis. In addition, SSO receives an annual government contribution as part of the tripartite SHI contributions. Administrative costs of SSO are subsidized by an annual operating government budget for SSO as it is one of the departments under the jurisdiction of the Ministry of Labour.

Private insurance companies also play a double role – collecting and pooling premiums from their members on an annual basis, as policies are renewed (or terminated) annually, and purchasing services for their members, often from private providers.

The characteristic of the market structure of collecting, pooling and purchasing is multiple noncompeting insurers/purchasers. Multiple natures as there are four purchaser agencies. Noncompeting as each of the three public insurers covers a distinct population. The three public insurance schemes do not compete for members, as CSMBS and SHI are occupation linked, while UCS is the entitlement for anyone not covered by CSMBS or SHI. When SHI members become unemployed, they are automatically transferred to UCS, or child dependants of CSMBS once they reach 20 years are automatically transferred and covered by the UCS unless they are employed in the private sector, in which case they are covered by SHI. When UCS members are employed in the private sector, they are covered by SHI and removed from the UCS. Members of these three public insurance schemes are not allowed to opt out from the schemes; though they are free to enrol in the voluntary private health insurance schemes.

The size of the budget for UCS is negotiated annually between the NHSO and the Budget Bureau, and the final decision is made by the National Health Security Board, chaired by the Minister of Health. The budget is proposed on the estimated total expenditure per UCS member for that budget year, based on the previous year's utilization rate of outpatient and inpatient services, and projections for that budget year, and the cost per outpatient and inpatient, plus other components such as prevention and health promotion services. In the past, the budget has been increased significantly for service utilization and labour costs as a result of annual 6% government salary adjustments and inflation of other medical products.

The size of the CSMBS budget is proposed by the CGD based on historical total expenditure trend and projection. However, as a result of fee for service for outpatient services, there were significant cost escalations for these services. Expenditure on inpatients was stabilized as a result of conventional DRG payment. CGD has overspent the approved budget for the last 20 years since 1994, but was cross-subsidized by the Central Fund earmarked for national contingencies such as flood and drought. Recently, cross-subsidy has not been permitted by the Constitution,

and legal approval for overspending is required by Parliament. Recent interventions include tight control of outpatient expenditure through stringent approval of the use of nonessential medicines; introducing individual prescriber's name in the dataset for close monitoring among 34 priority hospitals having a major share of outpatient reimbursement (mostly teaching and super-tertiary hospitals). Rate of increase in outpatient expenditure was thereby curbed.

The per-capita expenditure for SHI is fixed by SSO and adjusted every few years. Similar to UCS, the SHI estimates per-capita total expenditure for that budget year based on service utilization rate and unit cost of services, including some other service components covered outside the capitation.

Other parallel government health systems, such as MOPH for public health programmes, Ministry of Defence for armed forces' medical services and Ministry of Justice for prison medical services, are based on annual budget allocation, based on historical budget with slight adjustment.

3.4 Out-of-pocket payments

OOP have steadily declined since 1994 (see Table 3.3). This is because Thailand has gradually expanded health financial risk protection using several approaches; for example, social welfare for the poor and vulnerable, including older people and children under 12 years old; voluntary public subsidized health insurance for the non-poor informal sector. When universal health coverage was achieved in 2002, benefit packages were comprehensive and OOP dropped to 27.2% of THE. OOP gradually declined further to 12.4% of THE in 2011. Households are liable to pay OOP for services provided by public or private health-care facilities not covered by the benefit package of the three public health insurance schemes, e.g. self-prescribed medicines in private pharmacies, services provided by private clinics and hospitals or public provider network without referral by their registered network (the self-referrals), or for services on the negative lists announced by SHI and UCS.

Services provided by the contracted providers are free without copayment for UCS and SHI members. There are no deductibles, no maximum ceiling of coverage and no extra-billing allowed by health-care providers. However, some services covered by SHI such as dental care, have 250 Baht reimbursable per service and not more than two services per annum. Service beyond 250 Baht has implicit copayment. In 2010, SHI

gave a lump sum of 12 000 Baht per pregnancy for all related services such as antenatal care, delivery and postnatal care; there is an implicit copayment when the actual payment by members goes beyond the lump sum. In SHI, the fee schedule for haemodialysis is 1500 Baht per session, and not more than 3000 Baht per week; there is implicit copayment if the fee paid by members goes beyond the schedule; and SSO does not actively control the private market price. These are SHI services covered outside the mainstream capitation for outpatient and inpatient services.

Unofficial or under-the-table payment is almost nonexistent and is socially unacceptable. Services are literally free under all three schemes. There are still some practices of gratitude payment put in an envelope for the special private attendance by obstetrician during birth delivery particularly commonly practised by CSMBS members and the high-income groups (Hanvoravongchai et al., 2000; Riewpaiboon et al., 2005).

User charges were adopted in 1945 and historically played a critical role in financing health services in Thailand. The finance ministry allowed public health-care facilities to keep any revenue generated and use it following rules and regulations of the MOPH or other concerned ministries, all subject to external audit by the auditor general.

After the UCS launch in 2002, members were liable to copay a flat fee of 30 Baht (US\$ 0.7) per visit or admission; until in November 2008 the then new government abolished this copayment not only for political reasons, but also because some poor UCS members who were supposed to be exempted from copayment still had to pay due to poor exemption mechanisms. In 2012, the government reintroduced 30 Baht copayment for political reasons, but this was not practised in reality – it is socially unacceptable to UCS members. There are 21 groups of population who are exempted from copayment, and there is a group of persons who are not willing to pay. Hence, in practice there is no copayment.

There have been some attempts to introduce copayment for medical care for UCS members who chose to stay in a private room, but the Council of State ruled this practice unlawful as it is against the National Health Security Act. Hospitals can only charge for the private room and board, but not for medical care. Also there is currently an attempt to introduce additional payment for medicines outside the national essential drug list (which is the available drug package under UCS, CSMBS and SHI) or brand-name products. This was discouraged by the government for fear of undermining the national essential drug policy and the lower-cost

generic products, and the fear that it may result in two-tier systems, and loss of confidence by patients in the non-copayment systems.

Arguments in favour of cost sharing to discourage moral hazard by beneficiaries has been counteracted by the fact that using close-ended payment methods to providers (e.g. capitation for outpatient and global budget plus DRG for admissions) sends a strong signal about cost containment and protects against effects of information asymmetry– it is very unlikely to see moral hazard by the patients, in particular when the patients have to trade-off with a period of waiting time.

3.5 Voluntary health insurance

In 1993, Thailand introduced a public voluntary health insurance (called the Health Card Project), which was partially subsidized by the government budget. When UCS was fully implemented in 2002, the Health Card Project was automatically terminated and replaced by UCS. Only private voluntary health insurance is now available.

Private commercial insurance has been operating in the Thai market since 1929 mostly for the better-off population. There are two major types of private health insurance policies: the majority of schemes provide health insurance as part of life insurance policies, and there is a very small market of providing health insurance alone. Both types also provide individual and group insurance policies (Pitayarangsarit & Tangcharoensathien, 2002; Surasiengsang, 2004). Private insurance companies are regulated by an independent commission established by the 2007 Insurance Business Regulation and Support Act, the Office of Insurance Commission (Office of Insurance Commission, 2007). This is a major reform, as formerly regulation of insurance business was done by the Department of Insurance of the Ministry of Commerce.

Membership is on a voluntary basis. Prior physical screening and exclusion of existing conditions are common practices. Older people beyond 60 years old are usually not accepted. The health insurance policy is renewed (or terminated) annually, when premiums are adjusted based on previous year risk and actual use of services and reimbursement. The population coverage by voluntary private insurance is low, only about 2.2% of the total population.

Personal income tax relief is applied for the premium paid for voluntary health (including life) insurance. The premium is deducted as annual

expenditure, in order to provide incentives for coverage. There is no complementary private insurance to offer additional services with a reduced premium, as the three public insurance schemes' benefit packages are comprehensive. There has never been any policy discussion to introduce such complementary benefit packages. With full premium, all private voluntary health insurance offers similar benefits to the three public health insurance schemes, but with more choices of private hospitals. Society seems to tolerate the supplementary payment in addition to payment of taxes which finance public insurance.

3.6 Other financing

3.6.1 Parallel health systems

Other parallel systems are very small and mostly historical. For example, the State Railways runs a small hospital in Bangkok in its headquarters at Makasan, mainly providing services to State Railway employees; the Tobacco Monopoly of Thailand also runs a small hospital in Khlong Toey. Employees and dependants of state enterprises also apply CSMBS rules and regulation with slightly higher benefits. Note that armed forces and defence personnel are fully covered by CSMBS.

3.6.2 External sources of funds

External funding makes up a very small portion of Thai health financing, only 0.1–0.3% of THE between 1994 and 2011 (Table 3.3). This is mostly funding from The Global Fund to Fight AIDS, Tuberculosis and Malaria for combatting the HIV/AIDS epidemic, but is still small-scale compared to government budget on antiretroviral therapy (Patcharanarumol et al., 2013).

3.6.3 Other sources of financing

Voluntary charitable funds play an insignificant role in financing health in Thailand. Most are small scale and have limited funding roles, such as helping the poor who could not afford to pay hospital bills prior to 2002. Chinese Foundation Poh Tek Tung also mobilizes charitable funds to maintain prehospital emergency services for traffic accidents. However, the emergency medical services system was formalized by the 2008 Emergency Medical Services Act. These prehospital emergency services and referral are fully funded by the National Institute for Emergency Medicines, free to the whole population. The Institute was established by the Emergency Medicine Act 2551 B.E. (2008) and fully financed by annual budget allocation.

3.7 Payment mechanisms

3.7.1 *Paying for health services*

In Thailand, the MOPH owns a lion's share of the health-care facilities, a monopoly on health centres and the largest share of public hospital beds (see details in Chapter 4). These public providers earn their revenue from the three public health insurance schemes, with additional revenue from OOP payments by patients who opt out their entitlement.

The dominant form of organizational relationship between purchasers and providers in Thailand is a contract model, except some government parallel systems that apply an integrated model, such as the State Railway, which sets its budget to purchase services from its own State Railway hospital in Makasan. The State Railway employs its own hospital staff and provides an annual budget to finance the operation. The Department of Correction prisoner medical service owns a number of hospitals, employs staff and funds them directly. However, these parallel systems play a very small role in provision.

In the contract model, public and private health-care providers are independent from and are contracted by the third-party payers– the CGD for CSMBS, SSO for SHI and NHSO for UCS. There is a separation between purchaser and provider function in the contract model, commonly referred to as the purchaser–provider split.

The three public health insurance purchasers have distinct purchasing mechanisms. UCS estimates age-adjusted capitation for outpatient services to a contractor, typically a district health-care provider network (including a district hospital and 10–12 sub-district health centres serving a population of 50 000) based on the total number of members registered with the network. NHSO also sets a national global budget ceiling for admission services; based on electronic submission of every inpatient discharged from hospitals and the information on DRG, NHSO reimburses the total fund for admission services incurred to individual hospitals throughout the country on a monthly basis. There are also some other additional payments such as for high-cost services (e.g. bone marrow transplantation), for which a fee schedule is applied to certified providers. NHSO annual budget is a close-ended (or hard) budget, for which by the end of the year, budget for medical services will be fully disbursed to providers. It is not possible to carry forward to the next fiscal year or to overspend.

Table 3.8 shows that the approved budget per capita for UCS members slowly increased from US\$ 35.4 in 2003 to US\$ 73.5 in 2010, the annual growth rate ranged from 5.2% in 2009 to 18.8% in 2006.

Table 3.8 Different components of approved budget per UCS member, 2003–2010

	2003	2004	2005	2006	2007	2008	2009	2010
Outpatient services	47.7	37.3	38.2	35.1	33	29.6	29	30.2
Inpatient service	25.2	32	31.2	27.7	26.2	38.7	36.5	35.8
Prevention–promotion	14.6	15.7	15	13.6	12.7	11.6	11.4	10.9
High cost	4.7	6.6	8.9	14.7	13.3	6.7	7.8	7.4
Other	7.8	8.4	6.7	8.9	14.8	13.4	15.3	15.7
Total	100%	100%	100%	100%	100%	100%	100%	100%
Baht per capita ^a	1202.4	1308.5	1396.3	1659.2	1958.3	2184.7	2296.3	2497.3
US\$ per capita	35.4	38.5	41.1	48.8	57.6	64.2	67.5	73.5
Annual growth (%)		8.8	6.7	18.8	18	11.5	5.2	8.8

Note: a includes all items of special payment such as dialysis, antiretroviral treatment and other additional payments. Baht per capita in nominal price.

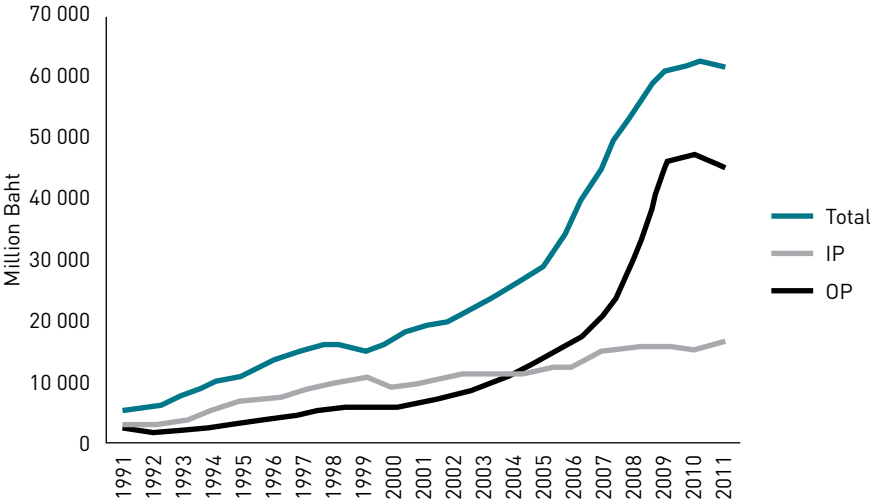
Source: NHSO documents, for fiscal year 2003 to 2010

SHI allocates inclusive capitation for outpatient and inpatient services to contracted hospitals based on the number of members registered with that contractor. SHI capitation is non-risk adjusted as it covers only working age people less than 60 years old, unlike NHSO which applies age-adjusted capitation to provider networks. Public and private hospitals are competing contractors for SHI members; private contractors have higher share (65%) of total SHI members. Members have the choice to change their preferred provider registration twice a year, or when they change employer or domicile, to facilitate better access to care. In return, contractors have to report the service output of both outpatients and inpatients (including DRG information) to the SSO on a monthly basis. The number of registered members is updated monthly. There are also payments to providers based on a fee schedule, such as dialysis and other high-cost treatments. These additional payments aim to mitigate the negative impact of capitation in terms of underprovision of services.

CSMBS has directly reimbursed health-care providers for outpatient bills on a monthly basis since 2007. Before 2007, it was a fee-for-service

reimbursement to CSMBS members, where members had to pay for service upfront and obtain reimbursement later. For admission services, CGD has not set a global budget ceiling (unlike NHSO), but fully applies a conventional DRG, the reimbursement rate per relative weight varies by hospital. Individual hospitals have different compensation per DRG relative weight. As a result, expenditures on outpatients increased significantly, while inpatients have been stabilized. There was a rapid cost escalation of CSMBS in 2008 after direct disbursement was fully applied (Figure 3.4); although direct disbursement had been piloted in 2004 for some chronic diseases, and in 2006 for pensioners.

Figure 3.4 CSMBS expenditure, 1990–2011, nominal price



Source: CGD, internal documents on expenditure, 1991 to 2011.

Voluntary health insurance purchases services mostly from private providers. However, it introduces implicit copayment as there are ceilings for all items of services, e.g. room and board, medical and surgical interventions.

Table 3.9 summarizes how the different health services are paid for by the three public and the voluntary health insurance schemes. There is harmonization of payment for health services by NHSO and SSO as they apply the close-ended provider payment contract mode, while the CGD applies fee-for-service open-ended provider payment for outpatient services and conventional DRG for inpatient services.

Table 3.9 Paying for health services

Paying for services	Universal Coverage Scheme	Social Health Insurance	CSMBS ^a	Voluntary health insurances
Primary/ambulatory care	<p>Capitation to contractor provider network (mostly district health-care providers including the district hospital + all health centres or PHC units in the district) based on number of registered beneficiaries.</p> <p>Capitation rate is based on utilization rate and unit cost of services in the previous year, annually negotiated between NHSO and the Budget Bureau. Downstream allocation to contracted provider network is based on age-adjusted capitation for outpatient services.</p> <p>Additional fee-for-service payments in case of specific services and medical equipment</p>	<p>Inclusive capitation for ambulatory care and admissions based on number of registered beneficiaries for competing public and private hospitals (having more than 100 beds and other facility and professional requirements).</p> <p>Additional risk-adjusted fixed payment per beneficiary for effective managing of chronic and high-cost diseases, additional payment per beneficiary for utilization in the past year.</p> <p>Additional fee-for-service payments in case of specific services and medical equipment</p>	<p>Fee for service, directly reimbursed to providers not beneficiaries.</p> <p>Note: only public providers are eligible</p>	<p>Fee for services with various conditions, more favourable benefit for higher premium</p>
Inpatient care	<p>Annual global budget set based on utilization and unit cost. Within this budget, case-based payment using actual relative weight points earned by providers (mostly public).</p> <p>Additional fee-for-service payments in case of specific services and medical equipment</p>	<p>Inclusive capitation for ambulatory care and admission.</p> <p>Additional fee-for-service payments in case of specific services and medical equipment</p>	<p>Prior to 2008, conventional fee for service, with combination of fee schedule for room and board, medical appliances, and other specialized services.</p> <p>Conventional DRG was applied in 2008, Baht per relative weight announced upfront</p>	<p>Fee for service with ceiling of total reimbursement per admission</p>

Table 3.9 Paying for health services (cont.)

Paying for services	Universal Coverage Scheme		Social Health Insurance		CSMBS ^a		Voluntary health insurances	
	Prevention and health promotion [personal preventive and health promotion services]	Maternity and pregnancy, including antenatal and postnatal care	Rehabilitation services	Palliative care	Renal replacement therapy			
Prevention and health promotion [personal preventive and health promotion services]	Capitation for providers (mostly public) covers the whole Thai population (not only UCS members) as a national scheme	Covered in inpatient care	Fee for service	Covered in inpatient care and supply of morphine for community palliative care	Not covered	Not covered	Not covered	Not covered
Maternity and pregnancy, including antenatal and postnatal care	Covered in inpatient care	Additional fixed payment for antenatal services, delivery and postnatal care, per confinement to beneficiary, not more than 2 confinements	Fee for service with ceiling(2000 Baht/month for outpatients and 4000 Baht/month for inpatients)	NHSO negotiates purchase of peritoneal dialysis solution through Government Pharmaceutical Organization delivered to district hospitals. NHSO purchases haemodialysis from public and private centres based on fix fee, copayment is fixed per haemodialysis session by NHSO	Mostly covered in inpatient care	Mostly covered in inpatient care	Mostly covered in inpatient care	Mostly covered in inpatient care
Rehabilitation services	Fee for service	Fee for service with ceiling(2000 Baht/month for outpatients and 4000 Baht/month for inpatients)	Fee for service	Similar arrangement to SHI, separate additional payment, fixed fee per session of dialysis (but higher than SHI), free choice by beneficiaries, no control of provider fee schedule, implicit copayment when actual fee beyond the rate given by CGD	Not covered	Not covered	Not covered	Not covered
Palliative care	Covered in inpatient care and supply of morphine for community palliative care	Covered in inpatient care	Covered in inpatient care	Additional payment, fixed fee per session of dialysis, free choice by beneficiaries, no control of provider fee, implicit copayment when actual fee beyond the rate given by SSO	Not covered	Not covered	Not covered	Not covered
Renal replacement therapy	NHSO negotiates purchase of peritoneal dialysis solution through Government Pharmaceutical Organization delivered to district hospitals. NHSO purchases haemodialysis from public and private centres based on fix fee, copayment is fixed per haemodialysis session by NHSO	Additional payment, fixed fee per session of dialysis, free choice by beneficiaries, no control of provider fee, implicit copayment when actual fee beyond the rate given by SSO	Additional payment, fixed fee per session of dialysis, free choice by beneficiaries, no control of provider fee, implicit copayment when actual fee beyond the rate given by SSO	Similar arrangement to SHI, separate additional payment, fixed fee per session of dialysis (but higher than SHI), free choice by beneficiaries, no control of provider fee schedule, implicit copayment when actual fee beyond the rate given by CGD	Not covered	Not covered	Not covered	Not covered

Table 3.9 Paying for health services (cont.)

Paying for services		Universal Coverage Scheme	Social Health Insurance	CSMBS ^a	Voluntary health insurances
Antiretroviral services	NHSO purchases antiretroviral medicines through Vendor Managed Inventory, additional payment to providers for VCT, viral load tests, registration of patients required	SSO purchases and distributes antiretroviral medicines to providers, additional payment to providers for VCT, viral load tests, registration required	Fee-for-service methods, covered in ambulatory care	Not covered	
Public health services	National programme under responsibility of MOPH, e.g. diseases surveillance, covers the whole population	By law, services not covered, it is covered by national programme	By law, services not covered, it is covered by national programme	Not covered	
Pharmaceutical care	Pharmaceutical benefit referred to medicines on the national Essential Drug (ED) List is fully covered in capitation fee for ambulatory care and global budget + case-based payment for inpatient services	Drug benefit referred to National ED lists. Drug payment is included in the inclusive capitation for ambulatory and inpatient services	Drug benefit referred to National ED lists. National ED lists. Fee for service for drugs in ambulatory care, and DRG for admissions	Covered in ambulatory and admission care	
Rehabilitation	Covered in in- and outpatient budgets, fee schedule for community rehabilitation from a separate rehabilitation and disabled budget	Covered in the capitation budget	Fully covered in facilities		
Long-term care	Not covered	Not covered	Not covered	Not covered	
Emergency Medical Services [prehospital care]	NHSO proposes budget for prehospital care and referral to its beneficiaries, fee per three different types of services	Not covered	Not covered		
Dental care	Covered except cosmetic procedures and integrated in the ambulatory care payment	Fee for service with ceiling, 2 services per annum	Not covered except a few basic dental services	Mostly not covered	

Table 3.9 Paying for health services (cont.)

Paying for services		Universal Coverage Scheme	Social Health Insurance	CSMBS ^a	Voluntary health insurances
Mental health care	Fully covered in ambulatory care. For admission, any psychotic episodes were fully covered either as outpatient or inpatient	Acute psychotic episode is covered not more than 15 days of admission	No limitation, fully covered by ambulatory and admission	Not covered	
Health care for special population, e.g. prisoners, military personnel	Not covered, medical services for prisoners are covered by Department of Correction, routine budget allocation, the department also manages some hospitals, or referral to MOPH hospitals for which payment is mostly fee for service		Civil servants, military personnel and their dependants are fully covered by CSMBS		

Note: a There are increasing numbers of local government officials and employees of independent public organizations. The provider payment mechanism often applies the CSMBS reimbursement model. Any reform in the CSMBS may have effects on these groups.

Source: Synthesis by the Author

3.7.2 Paying health workers

Table 3.10 shows how different health personnel who work in different levels and public and private health-care services are paid no matter what the source of finance. There are quite large discrepancies across the different public-sector and between public and private providers. This indicates a need for further harmonization of payments within the public sectors as discrepancies can have an impact on morale and out-migration. Note that dual practice among public practitioners exists, no permission is required. However, observations suggest that there are no negative consequences as quality is maintained via peer and social pressure as well as disciplinary mechanisms.

Table 3.10 Paying for health personnel

Category of professional	PHC centre	MOPH district hospital	MOPH provincial/regional hospital	University hospital	Private sector: private clinic	Private sector: hospital
Medical doctor in clinical services	No MD at this level of care	Mostly non-specialists, they are salary paid (salary scale is standard for all civil servants across sectors, based on grade on entry into service), additional pay includes non-private practice allowance, overtime allowance, hardship allowance, lump sum allowance, speciality allowance	Mostly specialists, salary paid, similar salary scale to a civil servant, grades are higher than district hospital doctors due to seniority and specialist training. Other allowances similar to those of district hospital though neither hardship nor lump sum allowance are payable	Mostly specialists, recent reforms when most universities hospitals become autonomous bodies, higher salary scale than civil servants (1.4Đ higher), other allowances	Private clinics provide diagnosis and dispensing medicines. Charges for service include doctor fee and dispensing medicines	Different modes, most common is fee for service with minimum monthly guarantee. Rate of pay varies by seniority and speciality, e.g. fee per consultation, surgical fees or anaesthesiologist fees. Other modes are payment per session of service, e.g. 4 h of outpatient consultation
Professional nurse	They can be either civil servants or non-civil servants depending on availability of civil service posts. This means they will be introduced to the same payment mechanism as professional nurses in district hospitals	Civil servants are salary paid plus other allowances, such as hardship allowance, health professions, overtime payments.				

Table 3.10 Paying for health personnel (cont.)

Category of professional	PHC centre	MOPH district hospital	MOPH provincial/regional hospital	University hospital	Private sector: private clinic	Private sector: hospital
Non-civil servants, e.g. contract staff, are salary paid but higher rate than civil servants as they are not entitled to medical and pension benefits. Otherwise they will get the same allowances and pay as those government officers	Similar to that of MOPH district hospitals. Usually higher income from overtime shifts (and private practices)	When university hospitals become autonomous, nursing staff are contract staff (non-civil servant status), are salary paid (with higher scale than civil servants), plus other allowance and incentives	Not common	Salary paid, plus other incentives such as nursing licence, or specialization such as nurses in intensive care unit, cardiac care unit, dialysis unit; plus other allowances, annual bonus		
Dentist	Dental nurses and dental assistants are usually civil servants, they are salary paid	Similar to doctors in district hospitals, almost all are civil servants and salary paid, plus other incentives, e.g. overtime payment, hardship allowance, non-private practice incentives, and lump sum allowance	Similar to those working in district hospitals	Status and payment are quite similar to those of doctors in university hospitals	Private dental clinics earn living from dental services, based on fee for service for different services rendered. The fees cover medical supplies, material and their wages	Almost all paid based on doctor fee for different services provided, annual bonus

Table 3.10 Paying for health personnel (cont.)

Category of professional	PHC centre	MOPH district hospital	MOPH provincial/regional hospital	University hospital	Private sector: private clinic	Private sector: hospital
Pharmacist	Not applicable at this level	Mostly they are civil servants, but increasing number of contract staff; all are salary paid, with a lower level of incentives and allowance compared to doctors and dentists	Similar to those working in district hospitals	Similar to those working in provincial hospitals	Pharmacists in private pharmacy earn living from selling prescribed medicines and OTC medicine based on fee for service for each item of medicine, for which the mark up covers their wage. The mark up varies greatly	Salary paid, plus other incentives such as overtime payment, and annual bonus
Public health worker	Salary paid as most are government officials	Salary paid as most are government officials	Salary paid as most are government officials.			
However, not so many staff in provincial hospitals	Not applicable	Not applicable	Not applicable			
Allied professionals: physiotherapist, therapist, medical technologist	Not applicable at this level of care	Salary paid as most are government officials	Salary paid as most are government officials	Salary paid, contract staff in autonomous university has higher salary scale than civil servants	Not applicable	Salary paid with overtime payment

MD: medical doctor; OTC: over-the-counter
Source: Synthesis by the Author

4 Physical and human resources

Chapter summary

As a result of strong political commitment to the health of the population, during the 1980s there was a heavy investment in government health-care delivery systems: health centres covered all sub-districts for an average population of 5000; a district hospital in every district, size ranging from 30 to 120 beds for an average population of 50 000; a provincial hospital in each of the 77 provinces; and regional hospitals as referral centres at regional level. Health delivery systems are dominated by the public sector, for which MOPH has the majority share; local government has almost no role in primary care and hospital service provision. Public hospitals account for 75% of all hospitals and 79% of beds. Private hospitals make up the remainder (25% and 21%, respectively). Most private hospitals are small, with 69% having fewer than 100 beds. Large private hospitals include several hospital chains that are registered on the stock market; they are located in Bangkok and offer services to international patients. Private non-profit-making charity-run hospitals account for a negligible share of hospital beds. The extensive geographical coverage of primary health care (PHC) and hospital services down to sub-district and district levels is the foundation for successful implementation of universal health coverage, especially pro-poor health service utilization and public subsidies.

Thailand is self-reliant in health-care workforce production with high quality and standard; the health-care workforce density per 1000 population is slightly above the 2.28 indicative benchmark of doctors, nurses and midwives. To ensure adequate health-care workforce serving the rural health services, continued efforts of multiple interventions were applied, such as education strategy with recruitment of students from rural backgrounds, curriculum reflecting rural health problems, mandatory rural service by all graduates, doctors, nurses, pharmacists and dentists since 1972, financial and non-financial incentives such

as social recognition; also task shifting has been applied throughout, such as nurse practitioners and other specialized nurses, dental nurses and pharmacist assistants. Quality is ensured through national licence examination for all cadres of professionals, licensing by professional councils, and relicensing for professional nurses every five years, requiring cumulative number OF credits of continued nursing education.

An adequate number of competent and qualified health-care professionals in rural health services make PHC functional and contributes to service coverage, health outcomes and resilience to accommodate the upsurge of health service utilization as a result of universal health coverage in 2002, as there is no significant increase in number of health-care workforce. As a result of the 2002 public-sector reform, the downsizing of the public sector, including health, resulted in the termination of all retirement posts and termination of compulsory services after graduation by nurses and pharmacists (only doctors and dentists are retained), as there are no posts to employ them. Nurses and pharmacists become contract workers paid by hospital revenue, but do not have civil servant status. This has negative ramifications on health-care workforce morale in the whole system. Political pressures exerted by contracted health personnel sometimes has resulted in reactive reforms approved ad hoc by the cabinet, such as the approval of new posts.

4.1 Physical resources

4.1.1 Capital stock and investment

Current capital stock in 2012

It took three decades from the 1970s to the 2000s of gradual investment in health-service delivery infrastructure in urban and rural areas for Thailand to achieve the targeting 100% geographical coverage (Patcharanarumol et al., 2011). In 2012, the total 734 community (or district) hospitals were the main health-care facilities at district level, covering all districts; and 94 regional/general hospitals (excluding Bangkok Metropolitan) served as tertiary referral hospitals located in large provincial cities in 76 provinces throughout the country. The size of community hospitals varies from 10 to 120 beds, while general/regional hospitals have larger capacities, at least 150 beds. The largest regional hospitals have more than 1000 beds. Other government hospitals include 64 military hospitals, 11 university hospitals, 61 specialized hospitals, 8 hospitals under other ministries, 12 hospitals under local government (municipalities and Bangkok Metropolitan Authority) and a few state enterprises.

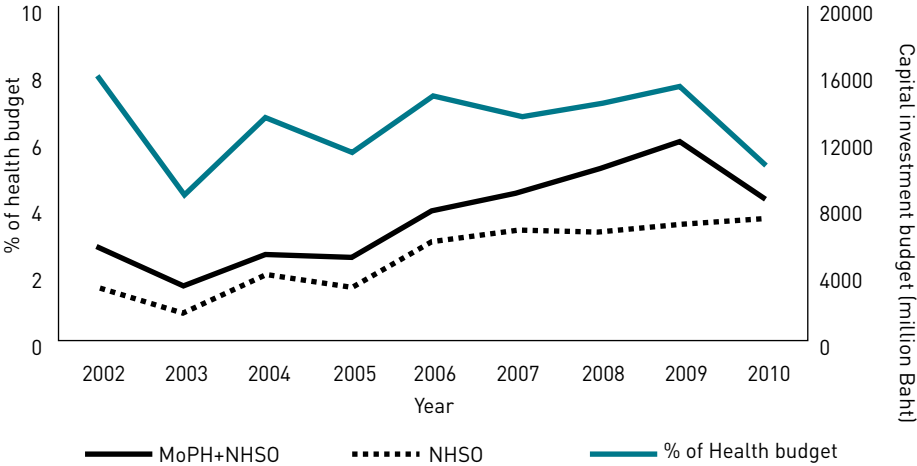
There are 322 private hospitals, 30% of which are located in Bangkok. At primary health care (PHC) level, 9768 health centres offering PHC services at Tambon (sub-district) level, as well as 352 municipal health centres in urban areas. The availability and functioning of health-care facilities and health-care workforce in public and private sectors have been routinely assessed through an annual Health Resources Survey conducted by Bureau of Policy and Strategy of the Ministry of Public Health (MOPH). Thailand Health Profiles (Wibulprolprasert, 2002; Wibulprolprasert et al., 2011) were published on a regular basis to provide a compendium of availability and use of health resources and other key health statistics. The numbers of beds, intensive care unit (ICU) beds and selected medical equipment are included in annual Health Resources Survey. Recently, the MOPH has been conducting a new survey to assess the assets of all general/regional and community hospitals. This information is fed into decision-making on capital investment.

Investment funding

Two investment funding sources for public health-care facilities emerged after the advent of the Universal Coverage Scheme (UCS) in 2002: capital replacement budget included in the UCS budget is managed by the National Health Security Office (NHSO), and the MOPH budget for major new constructions and medical equipment. The capital replacement budget increased from about 3 billion Baht (US\$ 67.8 million) in 2002 to about 7 billion Baht (US\$ 218.8 million) in 2010 (Figure 4.1). The capital fund for new investment was small compared with capital replacement held by NHSO, except in 2009 when MOPH had a larger share. Total capital fund fluctuated around 4.4–7.9% of total health budget between 2002 and 2010.

The capital replacement fund from NHSO is allocated to public and private health-care facilities according to the size of the population registered with them. NHSO allocates capital replacement fund to MOPH for further allocation to different levels of health-care facilities. As the private provider network has limited UCS member registration, they have a lower share, e.g. 335 million Baht out of the total of 6500 million Baht (5.2%) in 2012. MOPH is a legal entity, while public health-care facilities are not legal entities, as it cannot enter into legal contract, and are not allowed to borrow money for capital investment.

Figure 4.1 Capital investment budget and percentage of total health budget, 2002–2010



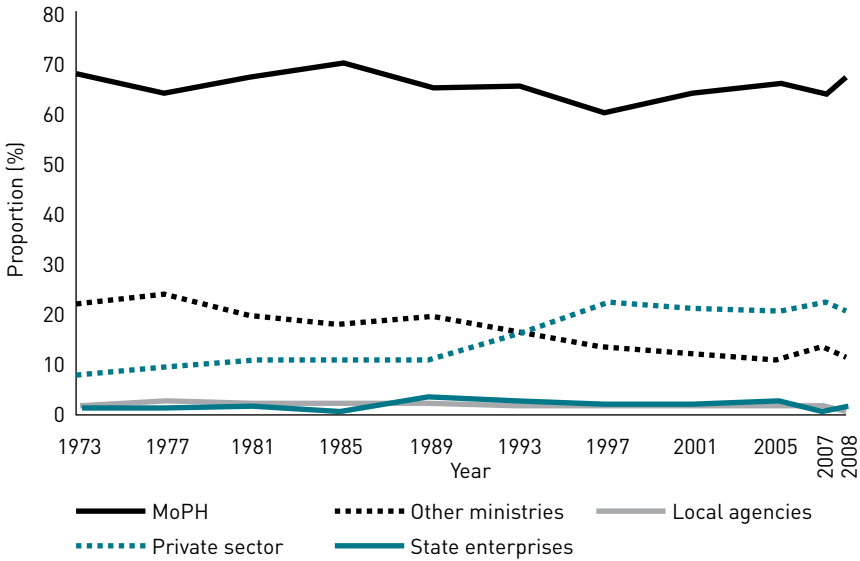
NHSO: National Health Security Office.
 Source: Bureau of Policy and strategy, MOPH.

4.1.2 Infrastructure

Almost all hospitals are designed for acute care. There are 61 specialized hospitals, including 13 psychiatric hospitals under MOPH, while there are no long-term care institutions. In 2010, there was a total of about 134 000 beds throughout the country. MOPH has the largest share (67% of total beds), followed by private hospitals (20% in 2008) (Figure 4.2). A rapid increase in the proportion of private-sector beds was noted between 1989 and 1997 due to increase in private hospital demand before a big slump after the 1997 economic crisis. Note that local government has no role in health-service provision, which has major negative implications on PHC in urban areas, one of the weakest links in the health system.

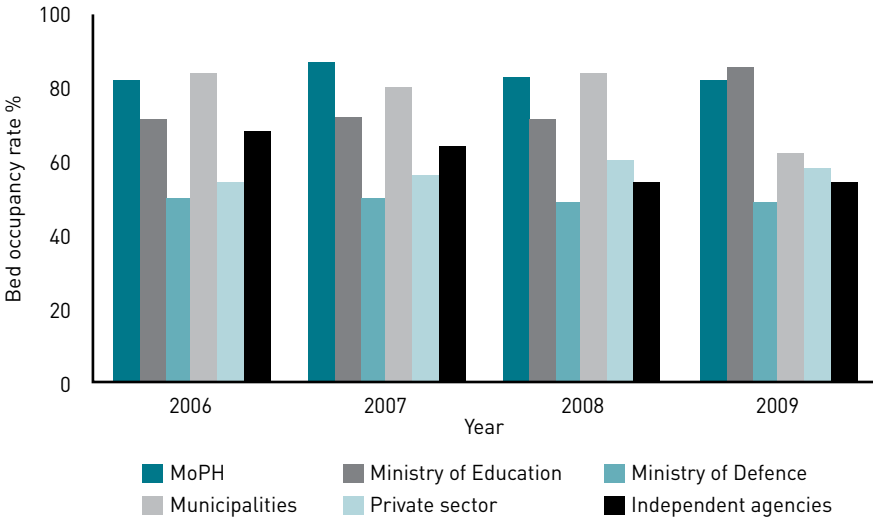
MOPH hospitals have the highest bed occupancy rate (>80%), while private hospitals have lower rate (50–60%)(Figure 4.3). Average length of stay was quite static at about four days during the decade 1999–2009(Figure 4.4). This is much shorter than length of stay in Japan (18 days in 2011), the highest among Organisation for Economic Co-operation and Development (OECD) countries, and the average length of stay for all causes across OECD countries (eight days in 2011;OECD, 2013); however, the proportion of older people (>65 years old) in OECD countries is higher, average 14.8% in 2010, while Thailand has only 7.4%.

Figure 4.2 Proportion of hospital beds by agency, 1973–2008



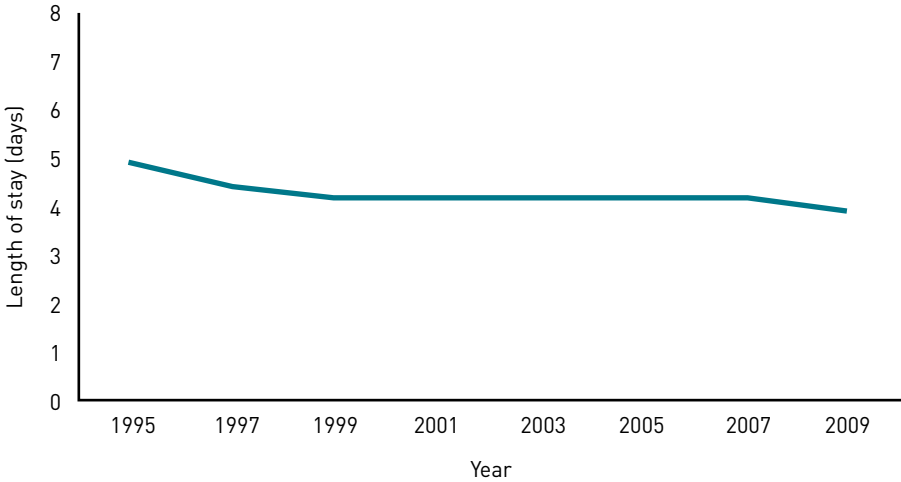
Source: Report on health resources, Bureau of Policy and Strategy, MOPH (2011).

Figure 4.3 Bed occupancy rate by agency, 2006–2009



Source: Thailand Health Profile 2008–2010, MOPH.

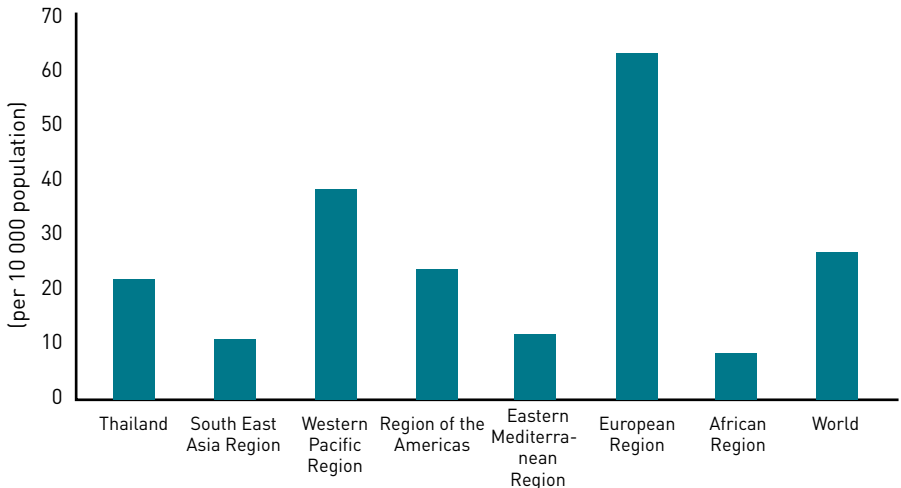
Figure 4.4 National average length of stay, all hospitals, 1995–2009



Source: Report on health resources, Bureau of Policy and Strategy, MOPH (2011)

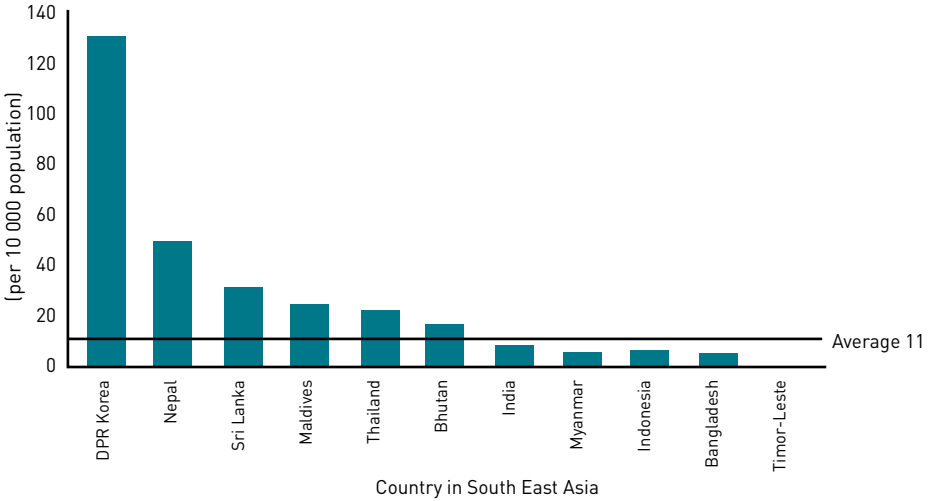
In 2009, there were 22 hospital beds per 10 000 population. This was higher than the South-East Asia regional average of 11 per 10 000, but lower than global average of 27 (Figure 4.5). Within South-East Asia, Thailand had fewer hospital beds per 10 000 population than the Democratic People’s Republic of Korea (132), Nepal (50), Sri Lanka (31) and Maldives (26) (Figure 4.6).

Figure 4.5 Hospital beds per 10 000 population, Thailand and six WHO regions and global average, 2009



Source: WHO (2010).

Figure 4.6 Hospital beds per 10 000 population, countries in WHO South-East Asia Region 2009



Source: WHO (2010).

4.1.3 Medical equipment

Investment in high-cost medical equipment is concentrated in larger specialized or tertiary care regional hospitals using the MOPH new capital investment budget, while private hospital investment in high-cost medical equipment is decided by the hospital’s executive team in response to increased demand and positive return on investment. There are regional discrepancies in the availability of major medical devices. There were 6.3 computed tomography (CT) scanners and 0.8 magnetic resonance imaging (MRI) units per million population in 2009. Bangkok had higher concentration than the national average and all other regions for all major medical equipment, as Bangkok hosts a majority of super-tertiary care hospitals including most of the medical schools (Table 4.1).

Table 4.1 Ratio of high-cost medical devices per 1 million population by region, 2009

Region	Ratio of medical devices per 1 million population				Discrepancy index			
	ESWL	CT	MRI	Mammography	ESWL	CT	MRI	Mammography
Bangkok metropolis	1.6	22.5	3.0	20.5	1.3	3.6	3.7	6.0
Provincial areas	1.1	4.7	0.6	1.7	0.9	0.7	0.7	0.5
Central	1.3	8.3	0.8	3.1	1.1	1.3	1.0	0.9
North	1.5	4.7	0.5	1.0	1.3	0.7	0.6	0.3
Northeast	0.7	2.3	0.4	1.2	0.6	0.4	0.5	0.4
South	1.4	4.1	0.8	1.3	1.2	0.7	1.0	0.4
Nationwide	1.2	6.3	0.8	3.4	1.0	1.0	1.0	1.0

CT: computer tomography; ESWL: Extracorporeal shock wave lithotripsy; MRI: magnetic resonance imaging.

Source: Thailand Health Profiles 2008-2010

4.1.4 Information technology

Hospital information technology has significantly improved since 1990s and contributed to effective implementation of UCS, which requires hospital inpatient details for reimbursement under diagnosis-related group (DRG) within a global budget.

With the growth of the Internet, 29% of the population were Internet users in 2013 (World Bank, 2014). Though civil registration of all births and deaths was mandatory by law from 1909, rapid progress was only observed in 1982 when a unique citizen identification number, assigned to all citizens at birth, was initiated and gradually transformed to computerized systems. All births and deaths must be reported by law and registered with local civil registration office within 15 days and 24 hours, respectively. Computerized civil registration covering almost all births (98.4% of total births had been properly registered and 96.7% received birth certificates) and deaths (98.4% had registered the death and 95.2% received death certificate) (NSO, 2006) supports the development of a membership database by the three insurance schemes. The sharing and

interoperability of this database ensure citizen entitlement to health care. For example, all births are daily registered to UCS or as child dependant with CSMBS (SHI does not cover dependants), the unemployed SHI members are automatically transferred to UCS, and a UCS member, once employed will be transferred to SHI. Once a CSMBS child dependant exceeds the legal age of 20 years old, they are transferred to UCS, or SHI if employed. The daily sharing of births and deaths, and updating membership across schemes results in real-time accuracy ensuring entitlement to health benefits by members, as all health-care providers can access the membership database via the Internet.

Most public hospitals have advanced information technology development to facilitate service provision and reimbursement of inpatient costs based on DRG systems; some hospitals have developed paperless systems covering all medical records, ancillary service requests, reports, and discharge summaries. Lack of MOPH technical leadership has resulted in different software being developed in various hospitals by different vendors, efforts are under way to achieve harmonization and ensure interoperability.

Quality and accuracy of inpatient discharge summary, in particular diagnosis, comorbidity and complications using the International Classification of Diseases (version 10) has significantly improved; as these information are vital for e-claiming for inpatient services for UCS patients to NHSO and for CSMBS to Comptroller General Department (CGD). Upcoding in DRG systems (so-called DRG creep) was curbed by stringent NHSO audits, so the amount overclaimed is returned to NHSO and NHSO makes additional payment for amounts underclaimed. Accuracy of discharge summary is facilitated by diploma training of medical coders responsible for medical records in hospitals (KMPHT, 2014). The inpatient claims under DRG system facilitate a complete and accurate national inpatient dataset, in full electronic form. When the inpatient dataset is linked with civil registration (anonymously using data encryption), the mortality outcome of selected conditions can be compared across the three insurance schemes.

In addition to hospital inpatient claims, the standard dataset for PHC was developed to capture minimum databases on individual outpatients and services offered by health centres and PHC units to provinces and MOPH. The current innovation is to develop full electronic medical record systems in MOPH hospitals.

4.2 Human resources

4.2.1 Health workforce trends

The numbers of staff in the four cadres of health-care professionals (doctors, dentists, pharmacists and professional nurses) and population density increased between 1997 and 2009 (Table 4.2). By 2009, there were 23 909 doctors (0.37 per 1000 population), 10 108 dentists (0.156 per 1000), 24 814 pharmacists (0.38 per 1000) and 109 797 professional nurses (1.74 per 1000). Expansion of the workforce has been a key feature of government policy since 1996, and in recent years it has increased significantly.

Table 4.2 Numbers of four cadres of health-care professional and their density per 1000 population

Year	Number				Health workforce density, per 1000 population			
	Doctors	Dentists	Pharmacists	Professional nurses	Doctors	Dentists	Pharmacists	Professional nurses
1979	6 619	1 013	2 487	17 212	0.14	0.022	0.05	0.37
1981	6 931	1 091	2 657	19 674	0.15	0.023	0.06	0.41
1983	7 902	1 237	2 918	23 565	0.16	0.025	0.06	0.48
1985	8 496	1 344	3 307	26 019	0.16	0.026	0.06	0.50
1987	9 580	1 447	3 645	30 752	0.18	0.027	0.07	0.57
1989	12 731	2 212	4 017	37 515	0.23	0.038	0.07	0.68
1991	12 803	2 452	4 436	40 685	0.23	0.042	0.08	0.80
1993	13 634	2 811	4 744	46 671	0.23	0.048	0.08	0.80
1995	14 181	2 903	4 740	54 262	0.24	0.049	0.08	0.92
1997	16 596	3 387	5 927	56 366	0.27	0.056	0.10	0.93
1998	19 500	3 914	5 932	63 704	0.32	0.064	0.10	1.04
1999	18 140	6 524	6 032	68 008	0.29	0.106	0.10	1.10
2000	25 039	6 793	6 360	70 978	0.29	0.110	0.10	1.15
2001	18 947	7 206	6 833	78 042	0.31	0.116	0.11	1.26
2002	18 987	7 511	6 269	84 683	0.30	0.121	0.10	1.35
2003	22 465	7 754	7 071	91 615	0.29	0.125	0.11	1.46
2004	18 919	7 974	7 414	95 900	0.30	0.128	0.12	1.53
2005	19 546	8 486	7 925	101 461	0.31	0.136	0.13	1.63
2006	19 663	8 813	7 938	101 797	0.31	0.141	0.13	1.63
2007	22 542	9 331	8 517	103 817	0.17	0.149	0.14	1.68
2008	22 757	9 619	8 987	105 398	0.36	0.152	0.14	1.74
2009	23 909	10 108	24 814	109 797	0.37	0.156	0.38	1.90

Sources: Thailand Health Profile (2008-2010); Office of the National Economic and Social Development Board on mid year population (1979-2009).

The health workforce at PHC level is critical in contributing to basic health services and health outcomes. Most health centres are managed by four-year trained public health officers. In a small proportion, professional nurses or nurse practitioners support clinical service provision. Adequate competence and skill mix in managing chronic noncommunicable diseases (NCDs), catering for changing health needs due to ageing and disability such as home health-care services and primary prevention, screening and management have yet to develop.

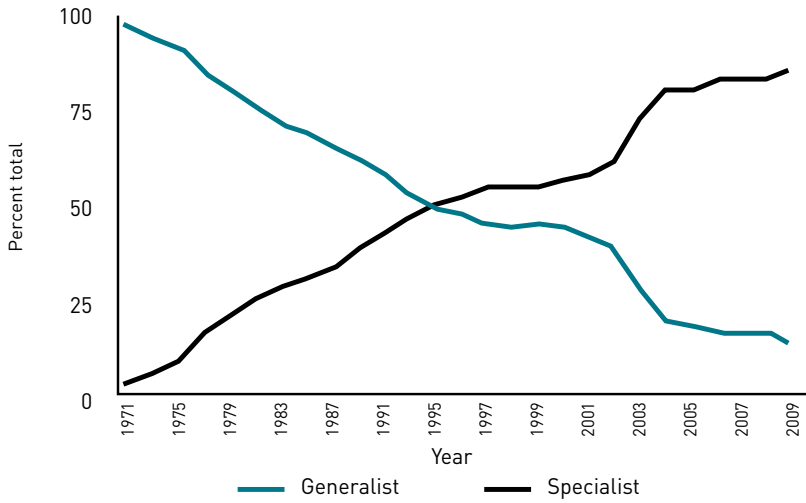
Doctors

In 2009, some 12 791 doctors (53.5% of the total) worked for MOPH, 5427 (22.7%) worked in other ministries, 1028 (4.3%) in hospitals owned by local governments, 4088 (17.1%) worked on full-time basis in the private sector, and 547 (2.4%) in state enterprises.

Off-hour private practices among public-sector doctors are legally permitted. Among all part-time health-care providers, between 50% - 60% are doctors. As a result of improved doctor density, regional disparities declined significantly between 1979 and 1989. However, regional disparity widened again between 1989 and 1997, as a result of increased demand for private hospital services due to favourable economic growth. After the 1997 economic crisis, a positive trend in doctor distribution across regions was regained, reverse migration from private to public MOPH hospitals was noted, consistent with closure of quite a number of private hospitals due to slump in household demand for private hospital care. Between 2001 and 2009, the regional gap in doctor density improved; though Northeastern region was the worst off, while the Northern, Southern and Central regions had comparable doctor density. For the seven-year period 2002–2009, the health resources surveys revealed that doctors at district hospitals had the highest workload, followed by those working in general hospitals, while those at university hospitals had the lowest; doctors at private hospitals had workloads close to those of doctors at regional hospitals. The workload of doctors in district hospitals has been declining, but those at other agencies have remained stable.

Though most are general doctors, increased proportion of specialists has been noted due to the social prestige and financial benefits. In some years, postgraduate training of specialists surpasses family medicine. General doctors provide service in the district hospitals, while specialists work in general or regional hospitals. The proportion of specialists increased from 3% in 1971 to 85% in 2009 (Figure 4.7).

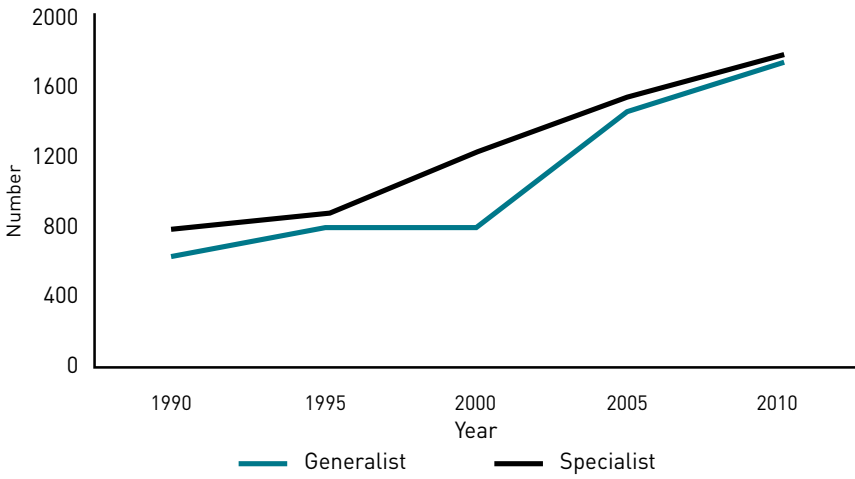
Figure 4.7 The proportions of generalist and specialist doctors, 1971–2009



Source: Thai Medical Council (various years).

The survey in 2011 (Pagaiya et al., 2012) showed that 13–18% of new medical graduates intended to apply for specialist training after one year (out of the three years) of mandatory rural service, 61–73% will do so after their three-year compulsory rural service. Figure 4.8 compares production trend of generalists and specialists between 1990 and 2010.

Figure 4.8 Trends of production of generalist and specialist doctors, 1990–2010



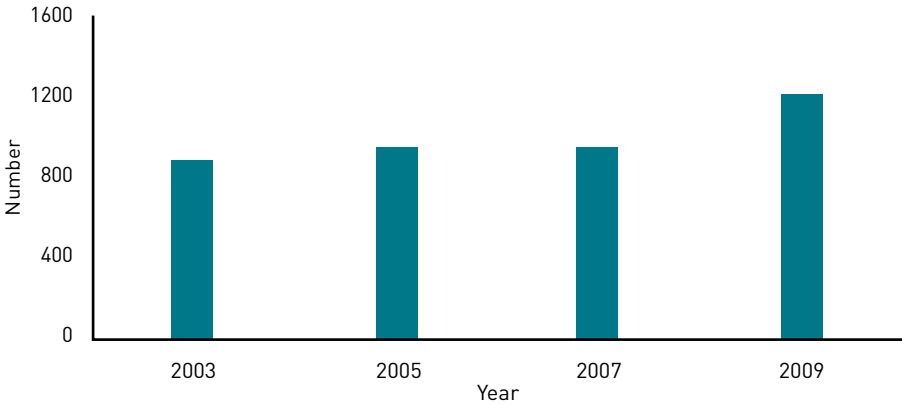
Source: Thai Medical Council (2011).

Dentists

In 2009, most dentists (3116; 64.8% of total) worked in MOPH hospitals, 1000 (20.8%) in health-care facilities owned by other ministries, just 154 (3.2%) in local government agencies, 346 (7.2%) in the private sector, and 192 (4%) in state enterprises. Between 1971 and 1995, the proportion of dentists in the public sector declined, while an increase was observed in the private sector. Dentist density in the poorest Northeastern region has improved consistently as a result of the three-year mandatory rural service by all health-care professional graduates, including dental doctors; despite this improvement, however, density in Northeastern region between 2006 and 2009 was the lowest across regions.

Dental nurses (two-year diploma trained) are key in providing dental health promotion and prevention to the population, especially schoolchildren in remote areas. Recognizing the importance of dental auxiliaries who can provide a wide range of basic public dental health services, the MOPH has scaled up the education programme. This has resulted in an increase in the number of dental nurses working in health centres from around 900 in 2003 to more than 1200 in 2009 (Figure 4.9).

Figure 4.9 Number of dental nurses in health centres



Source: Human Resources for Health and Development Office (2011).

Pharmacists

Most pharmacists work in the public sector. In 2009, there were 6158 (73.4% of the total) pharmacists working in MOPH hospitals, 822 (9.8%) in other ministries, 126 (1.5%) in local government agencies, 1233 (14.7%) in the private sector, and 51 (0.6%) in state enterprises. Between 1971 and 1985, about half of pharmacists worked in the private sector (drug manufacturing, import companies and pharmacies), while the other

half worked in the public sector. However, after the MOPH launched the mandatory rural service for all pharmacist graduates, the proportion of pharmacists working in the public sector increased significantly between 1984 and 2006 (reflected in the figures above).

The gaps in pharmacist density across regions has improved consistently. The pharmacist density in the poorest Northeastern region has improved and is now comparable with other regions.

Professional nurses

Most nurses work in MOPH hospitals. In 2009, there were 80 591 (73.4% of the total) professional nurses in the MOPH, 13 066 (11.9%) in other ministries, 2635 (2.4%) in local government agencies, 11 748 (10.7%) in the private sector, and 1757 (1.6%) in state enterprises.

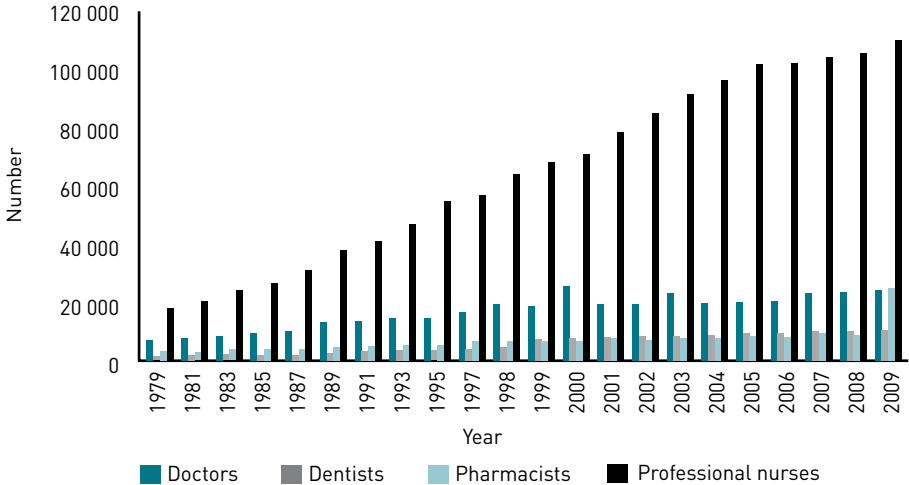
Off-hour part-time work in the private sector is allowed. Among all part-time health-care providers, professional nurses had the second highest proportion (after doctors). The regional gaps in nurse density have improved consistently: the poorest Northeastern region now has comparable density to other regions.

Other health-care professionals

There are many categories of health-related personnel, e.g. community public health officers, physiotherapists. The numbers and distribution of these are difficult to retrieve by years and by health-care facilities. Public health personnel work mainly in health centres. They primarily offer health promotion and prevention services and other public health actions, though basic health services are offered such as continued medication for well-controlled hypertension and diabetes patients. In addition to professional nurses, task-shifting is commonly applied to this group, such as screening of NCD and simple clinical management. It is estimated around 21 000–25 000 health workers belong to this category working in the health centres in the 2000s.

It should be noted that data on numbers and distribution of the health-care workforce are still not reliable despite efforts to improve the health-care workforce information systems. This indicates a need for immediate action for improvement.

Figure 4.10 Doctors, dentists, pharmacists and professional nurses, 1979–2009.



Source: plotted based on data in table 4.2

4.2.2 Mobility of health workers

Expert opinion suggests that international migration of health personnel is not a major problem; though there are no data on out-migration of health-care workers from Thailand. The Thailand Nursing and Midwifery Council has reported, since 2002, that there are annually 300–400 registered nurses requesting endorsement of their licences for application to work abroad.

During the Viet Nam war in the 1960s and 1970s, there was a large demand for doctors in the United States of America, which resulted in a large out-migration of 1500 doctors (25% of total graduates) to the USA; most of them have never returned (Wibulpolprasert & Pengpaibon, 2003).

A rapid exodus of Thai medical graduates in the 1970s prompted the government to initiate compulsory three years rural service upon graduation (Patcharanarumol et al., 2011; Balabanova et al., 2013). This was in line with the 1978 Alma Ata Declaration of Health for All that promoted the rapid development of health infrastructures in rural areas with a more equitable health system. This resulted in a significant increase in the number of rural doctors. The difference between the doctor-to-population ratio of the Northeastern, the poorest region of Thailand, and Bangkok dropped from 21 times in 1979 to 8.6 times in 1986 (Wibulpolprasert & Pengpaibon, 2003).

Internal migration of well-trained health-care professionals from rural to urban areas, from public to private sector, and from public to public institution is a major policy concern. In the 1990–1997 economic boom period, there was large and increased demand for private hospital care, which resulted in massive resignation of public-sector doctors to join private services (Tangcharoensathien et al., 1994). In April 1997, at the peak of the economic boom, 21 rural district hospitals did not have a single full-time doctor. Reverse migration from private to public MOPH hospitals was observed after the 1997 economic crisis, in line with massive shut down of private hospitals (Tangcharoensathien et al., 2000); migration and private hospitals are sensitive to economic boom and bust.

In the 2010s, the government's active policy to promote Thailand as a medical hub of Asia to attract international patients has had positive impact, contributing 0.4% of gross domestic product (GDP), while at the same time catering for 400–500 thousand international patients a year has a negative impact on health-care workforce internal mobility (Na Ranong & Na Ranong, 2011). The country neither adopts a policy for foreign health-care professionals to practise in Thailand nor encourages Thai health-care professionals to practise abroad. The medical hub policy has created a new market for Thai health-care professionals: they can find better employment in the international hospitals, both private and public medical centres. This leads to an increase in the internal brain drain. Studies estimate that the proportion private doctors increased from 7% in 1970 to 24% in 2000 (Noree, 2008) and professional nurses from 6.8% to 12.2% in the same period (Wibulprasert et al., 2011b).

Push and pull forces for professional nurses have become evident. Private hospitals offer packages of higher salaries, better welfare, overseas training and better work conditions to attract new, and retain, nurses. While MOPH is constrained by the public-sector downsizing policy since 2006, whereby posts are terminated after retirement, young nurses become annual contract workers, and their health benefit is covered by SHI. Hard work and lower pay are strong pushing forces from the public sector. The result is high turnover rate: 48% of them leave for private hospitals during the first year of MOPH employment, as there are limited opportunities to move from contract worker status to become a civil servant.

4.2.3 Training of health workers

Undergraduate education takes six years for doctors and dentists, and four years for nurses. Two curricula are available for pharmacists: five-year course and six-year course for clinical pharmacist. All four categories are trained in accredited public and private universities at bachelor degree. Postgraduate training is available in most universities.

The Secretariat of Higher Education Commission, Ministry of Education is the statutory body responsible for all higher-education (undergraduate and postgraduate) training for any course or discipline. However, health-care professional training, both the curriculum and the institutes, are subject to additional accreditation and certification by related professional regulatory bodies which are the concern of professional councils, before operating the training institute. The executive board of each school has to undertake quality assurance and conduct continuous quality improvement programmes in their schools to maintain the certification by professional council. With regard to related Health Professional Acts, all graduates have to pass a national licensing examination and registration with their professional council before clinical practice. Table 4.3 summarizes each health-care professional's study period, its regulatory authority and the degree which the graduates receive.

Table 4.3 Study years, regulatory bodies and degrees

Health professional	Study duration (years)	Regulatory body	Degree
Doctor	6	Thai Medical Council	Bachelor: Doctor of Medicine
Nurse	4	Thailand Nursing and Midwifery Council	Bachelor: Registered Nurse (RN)
Dentist	6	Thai Dental Council	Bachelor: Doctor of Dental Surgery (DDS)
Pharmacist	5–6	The Pharmacy Council	Bachelor: Doctor of Pharmacy (PharmD)

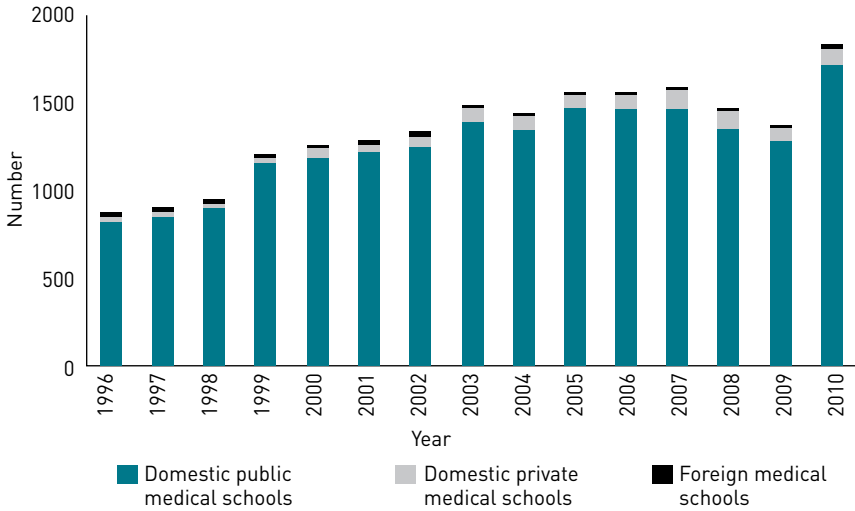
Source: Synthesis by the Author

Doctors

In 2013, there were 19 medical schools in Thailand, all but one being public medical faculties. Figure 4.12 shows the dominant contributions of public medical schools in training medical graduates. In 2010, there were approximately 1800 graduates gaining licences – double the number in 1996 as a result of rapid expansion of number of new and training

capacities of the existing public medical schools, from 13 to 18 over the previous 15 years (Suwannakij, Sirikanokwilai & Wibulpolprasert, 1998). The only private medical school had expanded its production capacity three fold, from 30 in 1999 to 93 graduates in 2010. Licensed physicians from foreign countries played a negligible role, average 15 per annum.

Figure 4.11 Medical graduates gaining licences from public and private domestic and foreign medical schools, 1996 and 2010, Thailand



Source: Thai Medical Council (2011).

After completing the six-year course, all domestic medical graduates have to pass the examination held by respective schools for diploma; and have to sit and pass the National Licensing Examination held by the Thai Medical Council in order to gain licence to practise in Thailand. The national licence examination for physicians is divided into three parts – the basic sciences, preclinical and clinical examinations – students must pass all three parts.

Likewise, all foreign medical graduates are required to hold a diploma from a medical school recognized by the Thai Medical Council and hold licence to practise in that country (Medical Council of Thailand, Undated-a) prior to applying to sit in the National Licensing Examination held by the Council before gaining licence to practise in the Thai territory.

A doctor’s licence for practice is lifelong, no renewal is required. There was an attempt led by the Thai Medical Council to enforce mandatory

continuous professional development (CPD) as a requirement for medical relicensing in order to ensure medical competency. However, resistance was exerted by the medical communities where there is no consensus on mandatory licence renewal.

Graduates who wish to continue with specialist training have to comply with Thai Medical Council's regulation: a minimum of three years' experience in rural practice is required by most residency training programmes (e.g. general surgery, internal medicine, paediatrics), with some exceptions (e.g. psychiatry, forensic medicine, pathology), which the MOPH aims to rapidly scale up, due to scarcity of human resources in these disciplines.

Study period of the residency training programmes range from three years in some specialities (internal medicine, obstetrics and gynaecology, psychiatry, paediatrics, etc.) to five years in others (e.g. neurosurgery, thoracic surgery, urology).

Unlike undergraduate medical training, for which medical schools are responsible, any public or private tertiary hospital can offer residency training programmes, but require accreditation and certification by the Thai Medical Council and the relevant royal college of specialty. The involvement of a number of health-care facilities in residency training has led to a substantial increase in specialist training from around 500 to over 1500 per annum between 1990 and 2010 (Medical Council of Thailand, Undated-b). Postgraduate specialist training is heavily subsidized, although training institutes benefit from these residents supporting clinical coaching and tutoring of medical students.

Nurses

Historically, nursing faculties in universities under the Ministry of Education had limited capacity to produce the numbers of nurses and midwives needed to meet demand for scaling up MOPH rural health services. In response to this challenge, in 1961, the MOPH established its own nurse and midwifery colleges, which were licensed and certified by the Thai Nurse and Midwifery Council.

In 2012, there were 78 nursing schools of which 52 were public and 26 private, with an annual production capacity of 9000–10 000 nurses to respond to national target of one nurse to 400 population by 2017. The four-year professional nurse bachelor curriculum combines nursing

and midwifery. The Thai nursing and midwifery council decided in 1982 to combine both nurse and midwife into one curriculum and standalone midwifery course is not appropriate to Thai health systems. Thai health systems require that a nurse can provide midwifery service for the catchment population. Professional nurses are more highly qualified than those from most Association of Southeast Asian Nations (ASEAN) countries, where the majority of nurses are trained for less than four years at diploma level.

Professional nurses are trained for four years and receive bachelor degrees. In response to the rapid increase in the number of district hospitals in 1980s, scaling up the production of nurse personnel became a key policy goal. To do this, instead of nurses having four years of training, in 1982 a policy was introduced to produce a two-year trained diploma course for technical nurses. After a few years of mandatory rural service, these technical nurses continue with an additional two years of postservice training after which they were upgraded to professional nurses. To implement this policy, the MOPH benefited from its existing nursing colleges. There was no opposition from professional associations due to the undersupply of nurses. Producing more nurses eased the huge service loads in the public sector and had spillover benefits for the private health sector. The Thai Nursing and Midwifery Council approved the technical nurse curriculum for a limited period of 10 years, ensuring that all nurses ended up becoming professionally qualified.

There are various clinical specializations, such as emergency care, orthopaedic nursing, medical or surgical nursing and oncology nursing, for in-service capacity-building as required by tertiary care hospitals. For postgraduate education, there are 15 and 7 nursing schools offering annual training of 1000 master and 70 doctoral students, respectively.

Nurses who have completed two years of experience in nursing career and wish to become clinical nurse specialists (CNS) are eligible to apply for one-year training, such as nurse anaesthetist or apply for two-year masters in nursing programme. After completing the masters course, if they wish to become advance practice nurse (APN) (Tarn et al., 2008) they can apply for a two-year training programme known as the APN Residency Training programme.

In addition, all nurses wishing to continue nursing practice are subject to renewal of their professional licences every five years. This is in line with the regulation, endorsed in 2002, by the Thai Nursing and Midwifery

Council. All professional nurses are required to gain 50 credits of CPD to maintain nursing knowledge, skills and competence for licence renewal. Failure to do so results in termination of licence.

4.2.4 Doctors' career path

Doctors in the public sector have their career path quite similar to other professions in the public services. Most clinical practising doctors in public hospitals are civil servants and usually start their career path at level 4 (of a total 11 levels) of the Position Classification (PC) system (Wibulpolprasert, 1999). To lift themselves up to a higher PC level, they have to be approved and evaluated, for either their academic or administrative performance, by their hospital directors. The framework of evaluation is a merit-based approach imposed by the Office of Public Sector Development Commission (OPDC)(Office of Permanent Secretary, 2010).

In Thailand, as doctors are universally recognized as leaders of health-care professional teams, they are usually promoted to at least PC level 7 or 8, equivalent to director of a division in the central MOPH office, within 10–12 years (Wibulpolprasert, 1999). In addition, since October 1996, the MOPH has adopted strategies to address the internal brain drain of rural doctors. These include the promotion of rural doctors' career paths: doctors who serve in rural areas for a long period are promoted to PC level 9, equivalent to the provincial chief medical officer and the deputy director general of the central department in the MOPH (Wibulpolprasert & Pengpaibon, 2003).

Based upon an interview with a key informant involved in the evaluation of career promotion of health personnel, it is clear that promoting doctors through technical and performance assessment was not strongly influenced by political interference by their directors or influential staff in the MOPH. This is in contrast to the promotion in the administrative career such as provincial chief medical officer, deputy or directors general which are much more influenced by political decisions and also restricted by the availability of vacant posts.

It should be noted that the civil servant reform in 2008 has resulted in the modification of mechanisms for career promotion by not using the conventional PC system. The PC was renamed whereby positions are clustered by type of work, e.g. academic or technical cluster, administrative cluster and supportive cluster. This was to improve the

efficacy of the civil servants' performance. Nevertheless, in reality there has not been a significant change of this mechanism.

During the first three years of compulsory rural service, most doctors' movements are to community and provincial hospitals, mostly in the same province.

4.2.5 Other health workers' career paths

Nurses

Nursing careers offer a wide variety of roles and broad scope of responsibility. The Thai Nursing and Midwifery Council reported that, in March 2012, there were 15 558 registered nurses of which 78.2% were actively working in nursing, most of them were public employees and worked in hospital settings, only 11.0% were employed by the private sector. Out of the total, 3.1% of Registered Nurses were lecturers in nursing schools, 85% were nurses in health-care service and 11.9% were nurse administrators. The two main career paths of nurses consist of professional career path and nursing management career path.

Professional career promotion is based on level of knowledge, qualification, experience and competence. There are several types of nursing careers, each with a different set of responsibilities. Clinical career promotion, CNS, includes certified nurse anaesthetist, nurse practitioner, infection-control nurse and other CNS in various clinical specializations in hospitals. To gain this type of promotion, a registered nurse is required to have more than two years' experience in nursing and to have completed one year training in CNS. Further, the APN (Tarn et al., 2008) is a registered nurse who has fulfilled the specialized registered nurse requirements, and passed certification exam for APN or CNS and who continues on to study at the doctorate level. The APN Residency Training programme takes two years.

Some nurses want to go into management, supervising others and handling day-to-day administration responsibilities. In general, bachelor degree-registered nurses gain experience as a health-care team member; they have opportunities to be promoted to senior-level positions in nursing management. Not more than 10–15% of total nurses in each hospital can go into the managerial path due to limited vacant posts. A number of steps are in-charge nurse, assistant unit manager, unit manager, senior nurse manager/supervisor, and chief nurse officer or director of nursing department. Increasingly, however, nurses find that

it is important to get a postgraduate degree in nursing management in order to jump more quickly into high-level positions such as director or chief nurse.

A registered nurse who working in the public sector for the first six years following graduation, is appointed to position level 3–5 (practitioner level); the registered nurse will be further promoted to professional level 6–7 in their 7th to 10th year of experience. In the MOPH, most of registered nurses finish their career at level 7 due to limited post availability: only about 10% of registered nurses became senior professionals (level 8) and a very small number, only 50 registered nurses are promoted to Chief Nursing Officer or Director of nursing department of the regional or general hospitals at an expert level (this is equivalent to level 9).

Apart from health-care professionals, there are more than one million village health volunteers supporting the health activities in communities throughout the country. Their contribution is significant in particular in the chronic NCD era (see Treerutkuarkul, 2008).

5 Provision of services

Chapter summary

Thailand has a multilevel health-care system aiming to improve geographical access of the population, in addition to enhancing system efficiency through rational use of service by level and proper referral systems. Public providers, especially hospital beds for acute care, dominate the system. There is at least one health centre in each sub-district, which covers approximately 5000 people. At the district level, there is at least one district hospital with 30–120 beds covering a population of approximately 50 000. At the provincial level, there is a general hospital covering a population of approximately 600 000 and some general hospitals have been upgraded to be regional hospitals for referrals in particular regions. At the top level of the system, there are 11 medical school hospitals, five of them located in Bangkok. More than one third of contractor providers under the Social Health Insurance Scheme were private hospitals, while a few private hospitals and clinics have been recruited as providers under the Universal Coverage Schemes, as they do not meet the requirement of the scheme to provide a comprehensive set of benefit package to members including prevention and promotion services; moreover, the payment rate of the scheme has been less attractive for them.

Health promotion and disease prevention services are handled by the Universal Coverage Scheme (UCS) for the whole population. In addition, the Thai Health Promotion Foundation fund, financed by additional surcharge of tobacco and alcohol excise tax, support the tackling of social determinants of health (e.g. alcohol, tobacco and road traffic injuries) and was managed by an autonomous public organization.

Primary health care (PHC) under the Universal Coverage Scheme is delivered through contracting units for primary care (CUP), which have minimum staffing requirements and consist of networks of several health centres and a hospital. In the private sector, a CUP is often just one PHC unit in urban settings.

Secondary and tertiary care are provided by the hospitals, often on referral up the system (from PHC to district to provincial/regional). Access to and use of specialized services (e.g. open-heart surgery, renal replacement therapy) in hospitals has been increasing over time. Levels of accreditation (increasing) and standardized mortality rates (decreasing) indicate that hospital care quality has been improving.

Emergency medical services (EMS) is now effectively universal and fully financed by general tax, both prehospital and hospital Accident and Emergency services with patients able to access the nearest emergency department to them at the time of need. Prehospital care is divided into first response, basic life support, intermediate life support and advanced life support.

Outside of hospitals, medicines are available in private pharmacies, which must be operated by a registered pharmacist, who can dispense “dangerous” and “specially controlled” drugs. Other personnel such as nurses, can dispense a number of medicines, especially in health centres.

Access to rehabilitation services and assistive devices has increased, but major geographical inequities remain, with those in urban areas having much greater access than those in rural areas.

Long-term care is traditionally and culturally a family responsibility (children and grandchildren do the caregiving) in Thailand. However, increasing numbers of older people without access to family-based care has meant that state and private provision of long-term care has increased in a variety of ways from home-based support and paid caregivers to institutional care. Meanwhile, palliative care is an area of growth. Historically, even health-care professionals have been ignorant of the value of certain drugs (especially opiates) in managing palliative care and chronic pain relief and this has only recently been added to various health training curricula. Opiate availability for medicinal use has been growing rapidly in recent years, though the morphine consumption per capita was still lower than the global average.

Though general hospitals provide mental services, most of the mental health care is under the jurisdiction of the Department of Mental Health. There are 17 mental hospitals, and 122 mental health outpatient facilities; other health personnel were recruited to support mental health service provision, prevention and promotion. However, this is an area that still suffers stigma.

Dental/oral health care is available in all levels of the public health service, but utilization is low (just 9% of Thais receive dental services) and there are massive regional differences in dentist availability.

Thai traditional medicine (TTM) and other complementary and alternative medicine are fully recognized in Thailand, but only TTM has full registration procedures and integration with conventional modern medicine.

5.1 Public health

5.1.1 Organization and provision of public health services

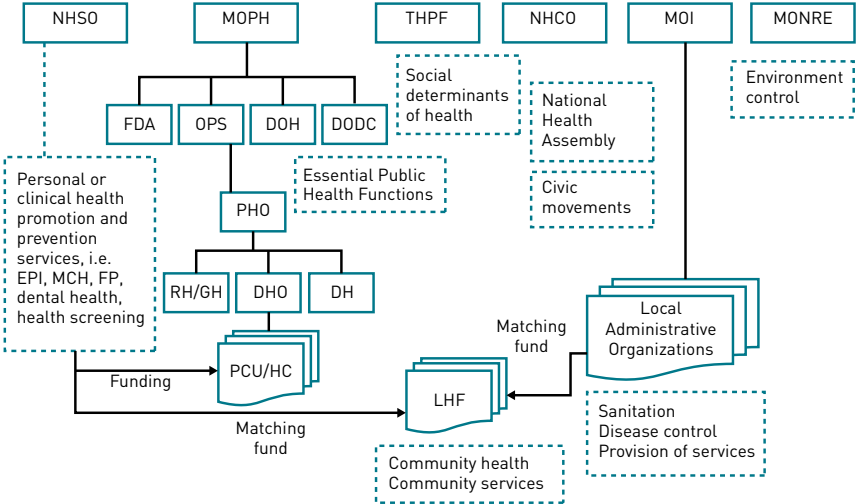
In the past, provision of public health services was solely the responsibility of the Ministry of Public Health (MOPH) and its facilities. However, there have been continued reforms and evolutions since 1990s, these included the public-sector reform, the decentralization of public administration, the Universal Coverage Scheme (UCS), the establishment of the Thai Health Promotion Foundation (ThaiHealth) and the National Health Commission Office (NHCO), and the local health funds initiative. These reforms and initiatives resulted in increased complexity of the system in handling public health services as shown in Figure 5.1.

Following the 2002 public-sector reform and the Decentralization Act 1999, some public health services have been decentralized from the MOPH to other public organizations, e.g., environment protection to the Ministry of Natural Resources and Environment, sanitation and disease control services to local government units. Following the introduction of the UCS in 2002, the main financial source for personal health services including personal health promotion and prevention services has shifted from the MOPH to the National Health Security Office (NHSO), which is responsible for the UCS. It should be noted that the UCS health promotion and prevention budget covers not only UCS members but also all other Thais; all prevention and promotion services had been provided by the MOPH free of charge to the whole population prior to the introduction of the UCS. This also has negative consequences on non-Thais because the UCS budget has been interpreted as being for Thais only. However, according to unclear boundary between personal health services and public health programmes and the new roles of the Department of Health (DOH) and Department of Disease Control (DODC) that focus mainly on technical support and knowledge generation, many public health programmes have been significantly supported by the UCS budgets since its 2001 inception.

ThaiHealth was established in October 2001 according to the promulgation of the Thai Health Promotion Foundation Act 2001. ThaiHealth receives a 2% annual surcharge on alcohol and tobacco excise tax from the Government. The office supports both public and private non-profit-making organizations, including local governments, to tackle major social determinants of health. Another initiative in the 2000s was the establishment of the NHCO according to the promulgation of the National Health Act 2007. The NHCO emphasizes social movement towards healthy public policies through the mechanism of a health assembly.

In order to tackle community health problems and community health services to reach underprivileged groups, an initiative of Local Health Fund (LHF) with matching funding from the NHSO and local governments was piloted in 2004 and expanded to cover nearly all local governments (7700 or 99%) in 2012. Contracting units for primary care (CUP), which are mostly district hospitals together with their networks, primary health care (PHC) units and health centres, are the key providers for health promotion and prevention services to the targeted populations in their localities.

Figure 5.1 Organization of public health services in Thailand



NHTSO: National Health Security Office; MOPH: Ministry of Public Health; THPF: Thai Health Promotion Foundation; NHCO: National Health Commission Office; MOI: Ministry of Interior; MONRE: Ministry of Natural Resources and Environment; FDA: Food and Drug Administration; OPS: Office of Permanent Secretary; DOH: Department of Health; DODC: Department of Disease Control; PHO: Provincial Health Office; DHO: District Health Office; RH/GH: Regional or General hospitals; DH: District hospital; PCU = primary health-care unit; HC: health centre; LHF: Local Health Fund; EPI: Expanded Programme for Immunization; MCH: maternal and child health; FP: family planning.

Source: Synthesis by the Author

Communicable disease control is supported by the DODC and operated by the MOPH and local governments. The Bureau of Epidemiology is responsible for disease surveillance and outbreak detection. Disease surveillance is routinely performed by public health-care facilities. Health centres and hospitals report patients with specific communicable diseases to the province and the central ministry. Outbreak control is primarily managed by the local health authority at the district and provincial levels under close monitoring and support from DODC, except for some situations (especially emerging diseases) that are directly managed by the central MOPH.

There is also a surveillance system for occupational and environmental diseases, to detect cases presenting at health-care facilities. The Bureau of Occupational and Environmental Diseases under DODC is responsible for monitoring and developing policies and strategies on prevention and control of occupational and environmental diseases. For noncommunicable disease, surveillance of behavioural risk factors is conducted by the Bureau of Noncommunicable Diseases in order to monitor risky behaviour that contributes to chronic diseases.

The basic health prevention and promotion services for Thai populations are covered in the benefit package of the UCS. These services cover essential programme for immunization, antenatal and postnatal care, family planning, nutritional surveillance, dental health promotion, routine health checkup, risk and disease screening for diabetes, hypertension, cervical cancer and other diseases. These services are covered by per-capita budget for health-care facilities with some top-up payments. Most services are provided by hospitals and health centres for the catchment population in each area. However, some private clinics participate in providing these services as well. For community health promotion activities and campaigns, the area-based health promotion and prevention budget is allocated to each region and province and local health-care facilities. These activities cover promotion of health-promoting behaviour such as exercise, healthy diet, safe sex, control of alcohol drinking and smoking, as well as environmental control.

5.1.2 Accessibility of public health services

Access to basic health promotion and prevention services such as immunization, family planning and antenatal care is generally high among targeted populations given the establishment of basic health infrastructure, i.e. district hospitals and health centres covering all districts and sub-districts throughout the country. According to the third and fourth national health examination surveys, there was improvement in access to screening for chronic conditions (diabetes, hypertension and hyperlipidemia), including improvement in the effectiveness of control of particular conditions even though there is substantial room for improvement (Aekplakorn et al., 2011). The coverage of services was somewhat influenced by the targeted payment adopted for particular services. However, this had some negative consequences, crowding out non-targeted prevention and promotion services and increased workload of health centre staff (data entering).

5.1.3 Challenges

Recent reforms since 2001 have had some negative consequences and have fragmented provision of public health services. Better collaboration is needed to handle new health problems, especially those problems related to lifestyle and behaviour, emerging communicable diseases, and social factors that determine the health of the population. Conflicts and constraints in UCS implementation revealed that further reform of the system is needed (Evans et al., 2012).

5.2 Patient pathways

Due to differences in system designs and access conditions of health insurance schemes, patient pathways differ between schemes. According to the capitation payment method adopted by the UCS, its members are automatically assigned to a local CUP. Most of the CUPs are district hospitals that are responsible for service provision in cooperation with a network of health centres or PHC unit within the district. Under the UCS, the first point of contact for a patient has been expected to be a local health centre or PHC unit; however, patients can directly access the hospital at which they are registered. Bypassing of PHC units by patients who directly access hospital outpatient departments (OPDs) has been decreasing. The ratio of patients accessing hospital-OPD/PHC unit was 1.2 in 2003 and 0.8 in 2011 (NHSO, 2011b).

Patient pathway under the Social Health Insurance (SHI) is similar to that of the UCS even though all main contractors of the SHI are big hospitals, both public and private, with 100 beds or more. Patients can directly access the OPD in their registered hospitals. However, most contracted hospitals also set up networks with small hospitals and PHC units in order to ease access and reduce the cost of services provided. Even though SHI patients can directly access OPDs in contracted private hospitals, the hospitals usually set a general OPD as gatekeeper for SHI members and access to specialized clinic needs referral from the general OPD. Access to specialized clinics in contracted public hospital is not restricted among SHI members.

Patient pathways under the CSMBS are more flexible than those under either UCS or SHI. According to the retrospective fee-for-service payment for outpatient services, CSMBS members can easily access any public facilities. Bypassing of PHC unit or district hospital to go direct to a big hospital is common among CSMBS members.

5.3 Primary/ ambulatory care

5.3.1 Organization and provision of primary health care

Primary/ambulatory health care is defined as the first point of contact between an individual and the health system. In 2009, it included 10 347 public health centres (approximately 5% of public health centres have one or more physicians, most of them working in urban health centres including Bangkok), 17 671 private clinics, 992 OPDs of public hospitals, and 322 OPDs of private hospitals (Wibulpolprasert et al.,2011b). The number of outpatient contacts per person per year increased from 2.0 in 2004 to 3.6 in 2010 (NHSO, 2011b).

All public health centres belong to the MOPH and the main staff are junior sanitarians (2 years training) and technical nurses (2 years training). Since the strengthening PMC of the UCS and the recent government policy on upgrading health centres to Sub-district Health Promotion Hospitals, numbers of registered nurses (4 years training) have increased from 1766 in 2006 to 10 274 in 2011. The number of staff per health centre increased from 3.2 in 1999 to 3.8 in 2011 (HRDO, 2011). The Government aimed to renovate and upgrade the capacity of health centres to deal with unmet needs and solve the problem of overcrowded OPDs in MOPH hospitals. However, shortage of human resources, especially qualified physicians and nurses, remains a major obstacle to implementation of this proposal.

Contracting unit for primary care and primary health care unit

In order to get budget as a main contractor of PHC of the UCS, health-care providers have to become a CUP. CUPs have to fulfil certain criteria, especially in terms of human resources. For a catchment population of 10 000, a CUP must have a physician, two registered nurses and eight paramedical staff (2 years training). Pharmacists and dentists are only needed at one per 20 000 population or they can work half-time for a 10 000 catchment population. Health services provided by a CUP have to be available at least 56 hours per week and a laboratory system for investigations must be available, as well as vehicle(s) for transferring patients. These criteria have different consequences in urban and rural areas.

In rural areas, where qualified staff (physician, pharmacist and dentist) are available only in hospitals, the health centres have to collaborate with the district hospital to constitute a CUP. Here, the CUP often consists of a network of public services in the district and one CUP is equivalent to one district.

In urban settings, where there is a greater number of health-care facilities, there could be several hospitals in the same area and there may be doctors in health centres. Each CUP can consist of a network of several health centres plus one hospital, or a network of health centres or even private clinics if they can fulfil the human resources criteria. In private clinics, each of them has very often formulated a CUP with only one PHC unit, and this contracted PHC unit is called a “warm community clinic”.

In 2010, there were 937 CUPs and 11 051 contracted PHC units in the public sector and 218 CUPs and 224 contracted PHC units in the private sector.

5.4 Specialized ambulatory care/inpatient care

Specialized ambulatory services and inpatient care are provided mainly in hospital settings. Nearly all specialists work in either public or private hospitals, with only a few working as full-time physicians in their own clinics. However, many public-sector physicians (including specialists) also work part time in private hospitals or their own clinics outside normal working hours. Some specialists also work as general practitioners in their own clinics. For inpatient care, services are available in a variety of both public and private hospitals, either general or specialized.

5.4.1 Organization of services

The MOPH owns the majority of hospitals in Thailand and this is a backbone of the Thai health system. MOPH hospitals have approximately 70% of all hospital beds and are distributed throughout the country, organized as a multilevel system outside Bangkok. There is a community hospital, with 30, 60, 90 or 120 beds, in all districts which covers a population of approximately 50 000. At the provincial level, which covers a population of approximately 600 000, there is a general hospital with 150–500 beds. Some general hospitals have been upgraded to regional hospitals with 400–1000 beds and act as referral centres in the region. In 2010, there were 730, 68 and 25 community hospitals, general hospitals and regional hospitals, respectively, while the proportion of beds shared by each type was 46:31:23. In general, the majority of community hospitals provide only basic medical care and inpatient services by general practitioners; however, community hospitals with 90 or 120 beds provide more complicated services by specialists in major areas such as internist, general surgeon, obstetrician and paediatrician. General hospitals provide secondary to tertiary care and are the referral centre within the province. Regional hospitals provide tertiary care and some of them have been upgraded to centres of excellence for particular services, e.g. cardiac, cancer and trauma.

Hospital services are also provided by some other ministries such as Ministry of Interior, Ministry of Defence, and Ministry of Justice. These were initially intended to provide services to their own specific populations; however, they are accessible to the public. Universities with a faculty of medicine also have teaching hospitals and act as referral centres providing tertiary care. A few Provincial Administrative Offices and municipalities also have their own hospitals.

In 2010, there were 7115 intensive care beds in 386 big hospitals, accounting for 5% of total beds. However, only 3% of MOPH hospital beds were intensive care beds, while 10% of beds in other public hospitals and private hospitals were intensive care beds.

Private hospitals

Almost all private hospitals in Thailand are private for profit and few of them are also on the stock market and target high-end populations and foreign patients. Private hospitals account for approximately 20% of total hospitals and beds and all of them are located in big cities, like Bangkok and its vicinity, and district capitals in the provinces. The number of

private hospitals has declined slightly since 2003 (Table 5.1). Some private hospitals are registered as main contractors of public health insurance schemes UCS and SHI. However, the numbers of private hospitals under these two schemes have been declining over time. In 2010, only 20% and 37% of private hospitals were main contractors of the UCS and SHI, respectively. Less attractive capitation rate paid by the schemes might explain the decline of number of private main contractors of these two schemes. Private hospitals under the public schemes are usually those of medium size, i.e. those with 100 beds or more, targeting lower- to middle-income populations. Moreover, the Civil Servant Medical Benefit Scheme (CSMBS) has been piloting a programme to allow CSMBS beneficiaries to obtain elective surgery in accredited private hospitals.

Table 5.1 Numbers of private hospitals providing services under different health insurance schemes, 2003–2010

	2003	2004	2005	2006	2007	2008	2009	2010
No. of private hospitals under UCS ^a	88	71	63	61	60	55	50	49
No. of private hospitals under SHI ^b	131	134	127	119	113	104	98	92
No. of private hospitals providing elective surgery for CSMBS ^c	–	–	–	–	–	–	–	26
Total no. of private hospitals ^d	260	260	259	258	253	256	255	250

Source: a National Health Security Office Annual Reports; b Social Security Office Annual Reports; c Comptroller General Department; d Annual reports of the Medical Registry Division, MOPH.

Centres of excellence

After the introduction of the universal health coverage policy in 2002, the NHSO collaborated with the MOPH to develop centres of excellence to tackle diseases with high burden and high mortality rate, i.e. cardiac diseases, trauma and cancer. Some tertiary and secondary public hospitals were chosen to be upgraded to centres of excellence to ease access to specific specialized care for patients in rural areas. Table 5.2 shows the numbers of hospitals being upgraded to centres of excellence. Moreover, new effective interventions for treating these conditions have become available, e.g. stroke fast track in 36 public hospitals and ST elevated myocardial infarction (STEMI) fast track in 243 public hospitals (data not available for private hospitals).

Table 5.2 Number of centres of excellence by category and level

	Cardiac centre ^a	Trauma centre ^b	Cancer centre ^c
Level 1	2	8	10
Level 2	12	20	11
Level 3	9	All general hospitals	9
Level 4	23	All community hospitals	

Note:

^a Cardiac centre has been classified into four levels: level 1 provides all cardiac procedures, level 2 provides most of the cardiac procedures, level 3 provides at least cardiac catheterization and few open-heart surgery, level 4 can provide echocardiography and exercise treadmill stress test.

^b Trauma centre has been divided into four levels: level 1 is training centre for emergency physician and provides comprehensive trauma care, level 2 is fully equipped and staffed with a trauma care team and can provide comprehensive trauma care, level 3 provides general trauma care, level 4 provides basic trauma care.

^c Cancer centre has been classified into three levels: level 1 provides full range of cancer treatment services, and conducts clinical research and cancer care model development, level 2 provides full range of cancer treatment services and conducts clinical research, level 3 provides general cancer treatment services.

Source: Srithamrongsawat, et al, 2008.

Relationship between secondary, primary and social care

Even though the health system in Thailand has been designed as a multilevel system, health promotion and prevention services (including public health programmes) are also integrated in public hospitals. Community, general and regional hospitals not only provide secondary or tertiary care to the people in their catchments, but they also provide PHC to people within in the sub-district where they are located. Moreover, following the introduction of the UCS, MOPH hospitals have been contracted as CUPs to provide essential health services to people residing in the district, with the UCS budgets channelled through CUPs. Health centres located in the district have been recruited as PHC networks of the CUPs in providing both personal care and community services. This has resulted in greater involvement and collaboration between the hospital and health centres, including financial and technical support (Srithamrongsawat, Yupakdee et al., 2010).

However, continuity of care for those needing intermediate and long-term care remains problematic, since these two services have not been well developed. Moreover, the current hospital services continue to put emphasis on acute care, while there are greater demands for chronic, intermediate and long-term care. The service delivery system in hospitals does not sufficiently support patients with disabilities or ease the continuity of both medical and social care within communities (Vichathai, et al., 2009).

5.4.2 Access to secondary and tertiary care

Access to secondary and tertiary care of various specialized services has improved under the UCS (Table 5.3). Moreover, geographical access to open-heart surgery also improved after the establishment of cardiac centres of excellence (Figure 5.2) (Srithamrongsawat, et al., 2008).

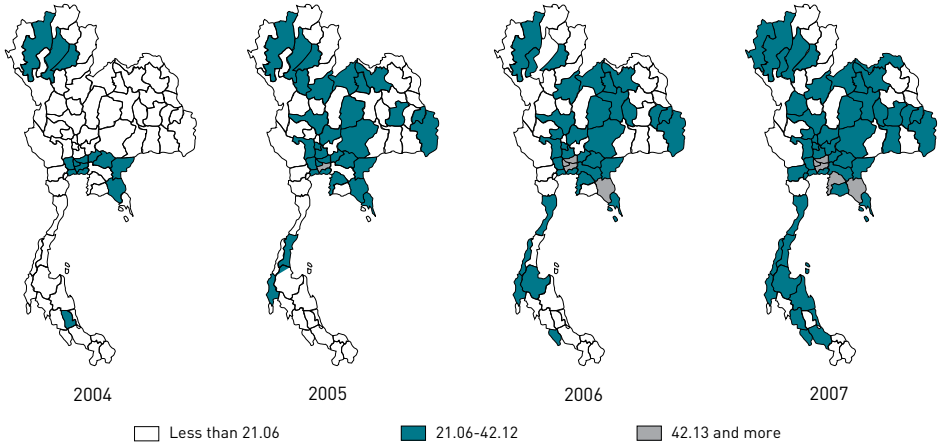
Table 5.3 Utilization of specialized hospital services within the UCS, 2005–2011

	2005	2006	2007	2008	2009	2010	2011
Open-heart surgery	4064	4138	5102	5452	5582	6111	6299
Percutaneous transluminal coronary angioplasty (PTCA)	368	2232	3098	4170	4497	5626	7677
Access to thrombolytic agent among STEMI patients (%)	0.43	1.64	4.93	9.79	16.96	31.43	35.09
Renal replacement therapy				972	10 875	16 509	21 486
Antiretroviral therapy			74 841	106 798	116 382	143 064	161 319
Cataract	42 191	88 089	106 096	137 082	120 824	124 845	122 064
Haemophilia		483	718	889	927	1039	1171
Cleft lip & cleft palate		1226	1828	2692	2779	3731	3258

STEMI: ST elevated myocardial infarction.

Source: NHSO (2011a).

Figure 5.2 Utilization rate of open-heart surgery of UCS members by province, 2004–2007

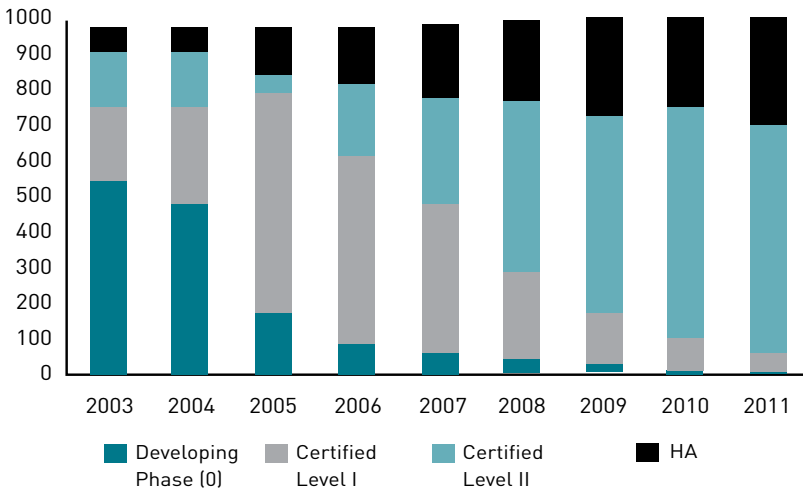


Source: Srithamrongsawat et al. (2008).

5.4.3 Quality of services

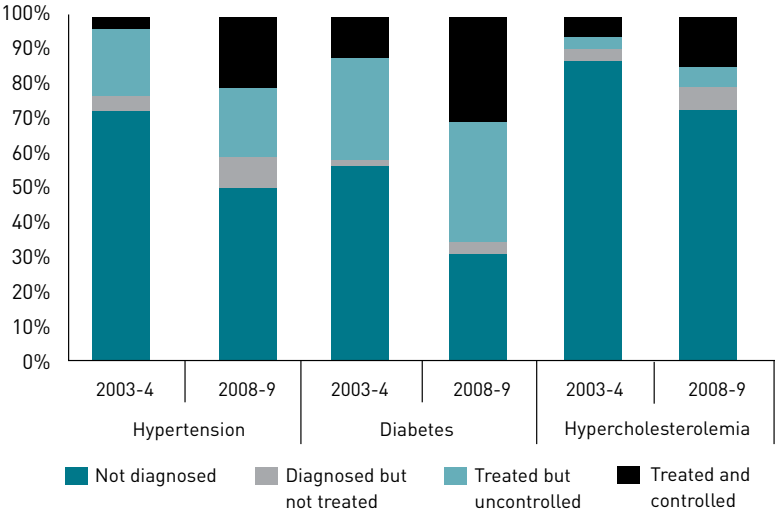
The quality of service provided by hospitals has improved, as shown by the increasing proportion of hospitals being accredited (Figure 5.3), the proportion of well-controlled diabetic and hypertension cases (Aekplakorn, 2011) (Figure 5.4), and the decline of hospital standardized mortality during 2008–2010 (Limwattananon, 2011) (Figure 5.5).

Figure 5.3 Number of hospitals under the UCS being accredited under the Hospital Accreditation programme 2003-2011



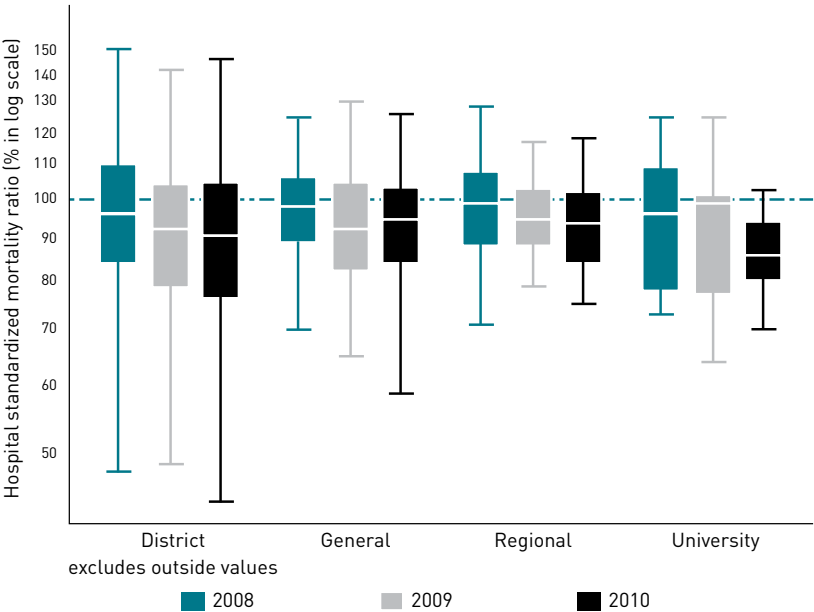
Source: Health Insurance Information Service Centre (2012b)

Figure 5.4 Effectiveness of treatment of patients with chronic conditions, 2003–2004 and 2008–2009



Source: Porapakkham, Y, Bunyaratapan, P (2006); Aekplakorn, W (2011).

Figure 5.5 Hospital standardized mortality rate, 2008–2010



Source: Limwatananon, S (2011)

5.4.4 Recent changes, problems and challenges

The Thai Government has a policy to promote Thailand as a medical hub in Asia. A few private hospitals target foreign patients as their main customers and the numbers of foreign patients have been growing. This has inevitably exacerbated the shortage of medical staff and increased the cost of health services (NaRanong & NaRanong, 2011).

More recently, a few public tertiary hospitals have also set up centres to target the better off and foreign patients – this raises questions about public hospital functions and governance of the system.

Capital underinvestment in public hospitals has been observed since the 1998 economic crisis. This may reduce the quality and capacity of public hospitals providing care to the populations.

Day care services

Day care services have not been systematically developed; moreover, the current payment system does not provide any financial incentive for hospitals to shift inpatient care to day care cases.

5.5 Emergency care

5.5.1 Evolution of Thailand's emergency medical systems

An initiative to develop an integrated prehospital and hospital emergency service as a network system was first piloted in Khon-Kaen province in 1993; this was taken as a model for other provinces. System development was incremental due to restricted budgets. Once Thailand had a universal health coverage policy in 2002, this put a certain amount of funding into emergency medical (EM) infrastructures – for example, the sponsorship of ambulances, training prehospital staff, life-saving equipment and supplies, and prehospital service payment.

The NHSO and other stakeholders in the EM service systems recognized the need to have a national body to steer and lead the development of the EM system. The Emergency Medical Act was drafted and then promulgated in 2008 along with the establishment of Emergency Medical Institution of Thailand (EMIT). NHSO then stopped prehospital service payment and its policy leadership role of the system development; both policy development and services provision were transferred to EMIT. According to Emergency Medical Act B.E.2551 (2008), the EMIT is responsible for system development including the emergency

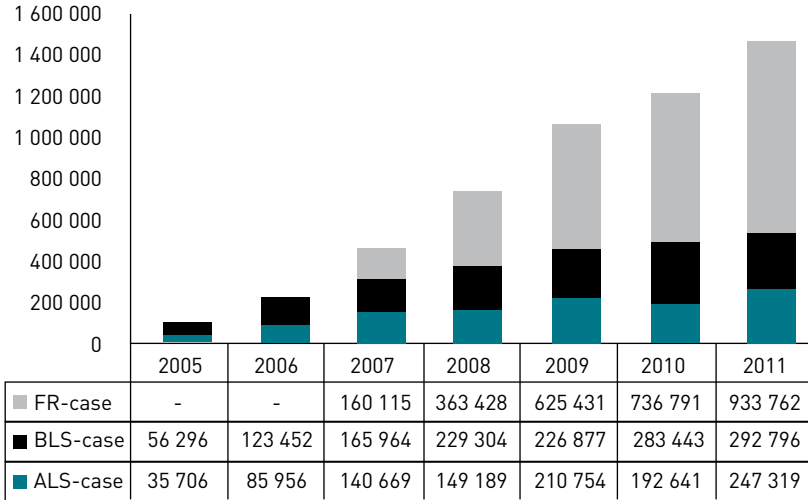
medicine master plan, system structures, service quality and standards, training programmes, emergency staff education and emergency unit accreditation, service payment, research and development.

Emergency patients described in the Act are referred to those who are sick or injured suddenly and their conditions can lead to fatality or disability if untreated. They need to be evaluated, managed and treated immediately to either save their lives or minimize their worsening conditions. Emergency medical services are defined as the operations that start from realizing the patient's condition and treating them until the condition passes on from the emergency state. The services include patient evaluation, management, coordination, control, communication, transportation, diagnosis and case management in and outside hospitals

5.5.2 Situations of emergency patients

Cancer, accidents, poisonings, and heart diseases were the leading causes of death in the Thai population, and vehicle accidents, stroke and acute myocardial infarction were ranked in the top five leading causes of lost healthy life years. Incidence of injuries and fatalities caused by accidents were 110.8–151.7 cases per 100 000 persons. Soaring health-care expenditure, social and economic loss were strongly attributed to injuries and accidents. In 2003, vehicle accidents caused disabilities to over 65 000 Thais. The vehicle accidents were estimated to cost between 106 994 and 115 337 million Baht of economic loss or 2–2.3% of GDP (Suriyawongpaisarn et al., 2009), although disabilities, life and economic loss due to injuries, accidents and sudden illness could be minimized if there were better coverage and effectiveness of EM care provision. The need for EM services has been increasing considerably in the three types of prehospital services – first response, basic life support and advanced life support services (Figure 5.6) (EMIT, 2010).

Figure 5.6 Number of cases receiving prehospital services, 2005–2011



FR: first response; BLS: basic life support; ALS: advanced life support.

Source: EMIT(2011).

5.5.3 Prehospital services

An individual in need can access emergency services in various ways, for example hospital walk-in, calling EM hotline or other hotline number (e.g. National Health Security Hotline, police hotline, Bangkok EM service), and other local numbers or transportation by any type of vehicle. Calls are channelled to a dispatch centre, where they are managed by dispatchers who triage the call on the basis of the patient’s medical condition and order the proper service from a nearby EM unit.

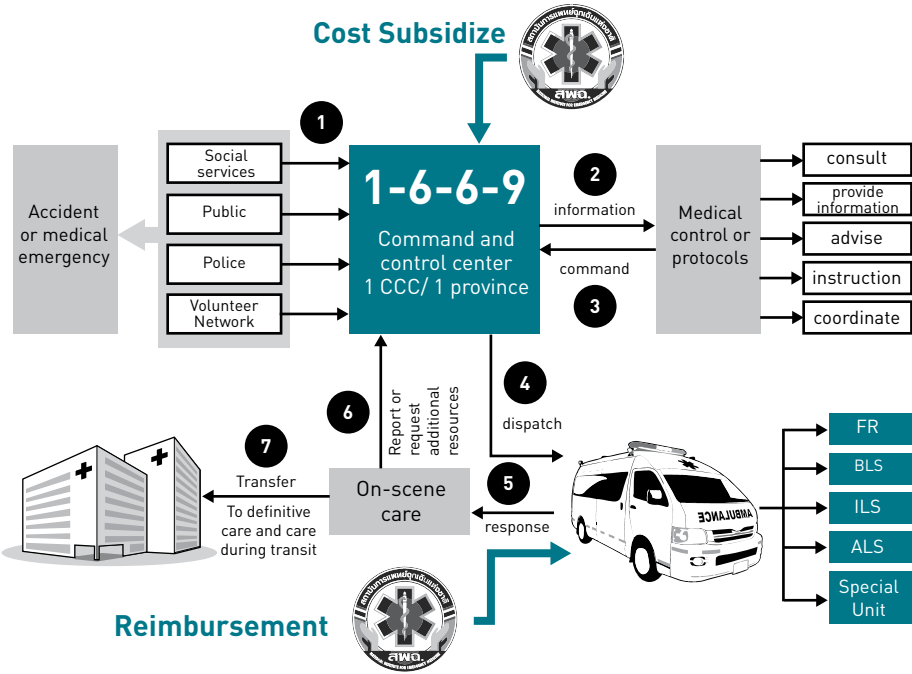
Most dispatch centres are situated at hospitals and managed by trained nurses, capable of performing the EM triage and coordinating the service provision from EM units. The EM units must complete the service form and make monthly claims to the provincial EM office, a unit of the provincial health office under MOPH.

The dispatcher classifies the patient’s urgency into one of three levels:(1) emergency level,in which the patient’s condition is life-threatening and needs immediate treatment to restore respiratory, blood circulation or nervous system;(2) urgent level,in which the patient’s conditions can lead to complications, disability or death if not treated urgently; and (3) non-urgent level,in which the patient’s condition is not severe, but

potentially leads to worsening condition or complication if untreated for too long. The dispatcher coordinates the EM unit to provide the prehospital services based on the patient’s urgency level.

Figure 5.7 Thailand’s emergency medical operation

General EMS operation process



EM: emergency medical; FR: first response; BLS: basic life support; ILS: intermediate life support; ALS: advanced life support.
 Source: Pangma, A (2012)

Access to prehospital care is free for all Thais. EMIT, as budget holder, has set the guideline and paid for prehospital care by accredited public and private ambulance services. Payment rates of prehospital care are no more than 350, 500, 750 and 1000 Baht per service for first response, basic life support, intermediate life support and advanced life support, respectively (EMIT, 2010). The maximum rates are always claimed and payable. EMIT also announces the payment rates for air and water prehospital services. Both services are conditional on a number of strict criteria for efficient utilization of the costly resources (EMIT, 2010).

All EM units must be licensed and registered by EMIT or by licensing offices designated by EMIT (mostly the offices under the provincial health

offices, MOPH). The licensing offices are contracted by EMIT to manage operational functions, for example, service zoning, quality control and auditing, service payment and service information systems.

In September 2010, there were 7771 (70%) first response units, 1531 (14%) basic life support units, 40 (0.36%) intermediate life support units and 1796 (16%) advanced life support units. First response and basic life support units are external to the hospital, operated by either local governments or volunteer organizations, while intermediate and advanced life support units are under the hospital management. Over half of first response units are the functional units of local governments. By 2011, some 68.7% of local governments (5397 out of 7852 local governments) had EM units, mostly first response units. These are being increasingly transformed into basic life support units, a trend attributed to the higher payment rate.

Overall, the increase in numbers of EM units helped increase EM service coverage. For example, the proportion of cases using EM service through the emergency hotline increasing from 51.0% of total EM cases transferred by EM units (1 212 875 cases) in 2010 to 73.5% in 2011. Ambulance response time, a certain aspect of care quality, was within 10 minutes (within 10 km distance from EM unit) for 71.5% of total EM cases in 2011, compared with 61.9% in 2010. However, the good ambulance response time was undermined by poor dispatch time: 93.7% of all calls failed the indicator of 1 minute or less. The percentages were 92.7%, 96.1% and 93.6% for first response, basic and advanced life support, respectively. In addition, the system efficiency performance also needs improvement. Around 40% and 11% of advanced life support inappropriately served urgent cases (level 2) and non-urgent cases (level 3) instead of emergent cases (level 1) (EMIT, 2010).

5.5.4 Hospital emergency service

To cope with the rising demand for emergency hospital care, during 2002–2006, the NHSO allocated a certain amount of budget for capacity-building of EM personnel at tertiary hospitals, which ran trauma care centres. However, the hospitals which were not trauma care centres had greater numbers of emergency cases than those of the trauma care-providing hospitals (Suriyawongpaisarn et al., 2009), which were mostly concentrated in big provinces. The requirement of establishing a broader network of EM care provision thus became evident.

An evaluation of hospital EM care systems was conducted in 12 public hospitals designated as centres of excellence for EM care. Trauma cases ranged between 20% and 32% of the total ER cases; 10–19% of ER cases were given prehospital services before coming to the ERs. Only five hospitals had emergency physicians. Khon-Kaen hospital had more emergency physicians because it is an EM training centre. Most ERs placed internship physicians to work with experienced nurses and staff in ERs. Three hospitals had surgical physicians regularly working in ERs. The ER nurses had various roles, e.g. patient triage, coordination, clinical functions, and case management at dispatch units, many of which were located in ERs. All hospitals kept some space (which was really tight) for triage zoning according to case severity. All ERs had clinical practice guidelines, fast-track systems for particular cases, e.g. stroke and myocardial infarction, and undertook trauma registry and audit (Suriyawongpaisarn et al., 2009).

The challenges were insufficient physicians and nurses as compared to rising service need, lack of effective teams working and coordinating both within and outside the hospitals, restricted operating space (hardly enough to effectively perform triage and impossible to reserve some space for case observation) (Suriyawongpaisarn et al., 2009).

The hospital EM services are covered in the benefit package by the three public insurance schemes, as well as the Motor Accident Victims Protection Insurance under Motor Accident Victims Protection Act B.E. 2535 (1992). The Motor Accident Victims Protection Insurance covers all vehicle owners purchasing insurance for injuries or death caused by their vehicles. The injured party is able to claim an initial payment of 15 000 Baht based on a no-fault basis. A cabinet resolution endorses that payment for treatment of traffic injuries must be the responsibility of the insurance companies, expenditure beyond the insurance liability will be the responsibility of the respective health insurance scheme which covers that person.

Although hospital EM services are covered by the three public insurance schemes and Motor Accident Victim Insurance, a barrier to patients obtaining timely and quality of care still exists. Services provided by internship physicians and overcrowded emergency departments make people less confident in public hospitals. Although patients with emergency conditions can access any public and private hospital, there is a financial barrier to accessing care in non-contracted private hospital

because there is a ceiling of expenditure covered by the insurance schemes.

In April 2012, the Government announced that a patient covered by any public health insurance scheme can get free hospital emergency services from any public or private hospital (i.e. they do not have to claim service from the registered hospitals, especially for SHI patients where their capitation was paid by the Social Security Office). NHSO was designated by the cabinet to serve as a clearing house for all hospitals, managing payment for hospitals and reimbursing from CSMBS and SHI. However, the private hospitals have imposed a payment condition where emergency care is given to SHI members patients within 72 hours after admission with a reimbursed rate of 10 500 Baht per diagnosis-related group (DRG) weight. After 72 hours, the patient has to be transferred back to the registered SHI hospital (Treerutkuarkul, 2012). It is a concern that the medical condition of the patient—whether it is stable enough for transfer—is not mentioned, despite the fact that safety of patients is more important than finance.

In April 2012, the Government announced a policy to harmonize health insurance schemes for EM services. The policy aims to enable access to needed medical care for patients with emergent medical conditions at any nearby hospital free of charge. Targeted hospitals of this policy are non-contracted private hospitals of any public health insurance scheme, so it increases the available facilities for EM care. The NHSO has been assigned the responsibility of organizing the management the system: setting guidelines, managing claims, managing complaints. Initial assessment of the policy indicated that it enables access to care for patients with emergent conditions, but it does not effectively protect patients from financial risk and there are various constraints to further improvement (Suriyawongpaisalet al., 2012).

5.5.5 Challenges for systems development

Thailand's EM systems evolved from the provincial network as pilot projects before moving towards more integration between prehospital and hospital service provision. Equity in service coverage is getting better, but service quality and efficiency need improvement. Dispatch centre operations must be a focus for improvement.

Local governments' involvement in financing and providing EM care is a promising strategy of enhancing system viability and sustainability.

However, the establishment of EM units should be seriously considered on the basis of economies of scale and care quality, otherwise they could be competitive instead of complementary to each other. Meanwhile, the transformation from first response to basic life support units was likely to have been a result of financial incentives instead of need and efficiency. EMIT should give considerable weight to using evidence-led recommendations to improve accountability and efficiency of service provision.

Hospital emergency service provision needs serious investment for infrastructure development, e.g. supplies, equipment, communication technologies and systems, and human resources in terms of quantity and quality to cope with increasing service demand. Staff training programmes should be more available in centre of excellence hospitals to increase the number of various types of emergency staff.

The fast-track programmes of stroke and acute ST elevation myocardial infarction (STEMI) under the universal coverage policy have shown success in both prehospital and hospital service system management due to hospital leadership and the effective cycle of plan–do–check–act (Suriyawongpaisarn et al., 2009). This successful case must be considered as a stepping stone for the development of the whole system, which should be led by EMIT working collaboratively with relevant public and private organizations based on a shared vision.

5.6 Pharmaceutical care

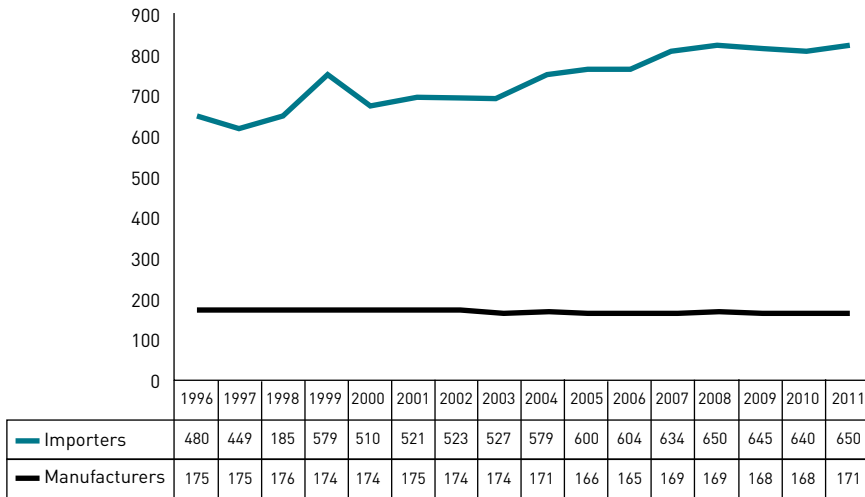
5.6.1 Pharmaceutical industry

The pharmaceutical industry in Thailand consists of local production and importation. The number of local manufacturers is relatively steady whereas the number of importing enterprises has increased (Figure 5.8). In 2011, there were 171 manufacturers and 650 importers (Bureau of Drug Control, 2011a). Local manufacturers are generally non-research-based and almost all are Thai-owned private companies which focus on producing pharmaceutical formulations and, to a small extent, manufacturing some active ingredients. A few manufacturers are state-owned, such as the Government Pharmaceutical Organization (GPO), the Defence Pharmaceutical Factory, and the Thai Red Cross Society.

The affiliates of drug multinationals play important roles in terms of production, importation and distribution, and invest in the Thai

pharmaceutical industry via joint ventures and wholly owned subsidiaries. Pharmaceuticals are imported to Thailand in forms of finished products and raw materials. Some foreign firms have established their own pharmaceutical factories for production and packing, but generally not for the production of active ingredients (Kuanpoth, 2006).

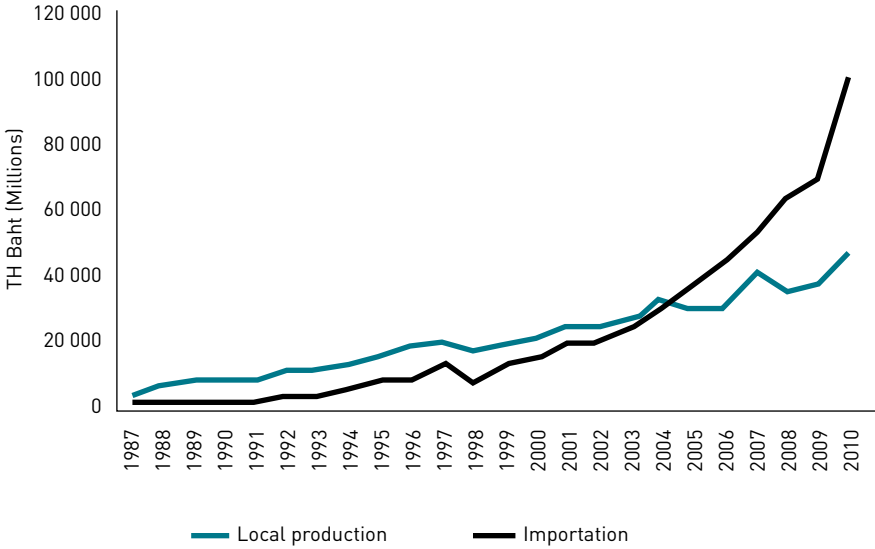
Figure 5.8 Numbers of pharmaceutical manufacturers and importers, 1996–2011



Source: Bureau of Drug Control.

Locally produced drugs used to dominate the market in terms of value. In 2005, the trend started to reverse. In 2010, total production and importation value of pharmaceuticals was 146 556 million Baht 32% of which was from domestic production (Bureau of Drug Control, 2011b). The percentages of domestic production and importation during 1987–2010 are presented in Figure 5.9.

Figure 5.9 Value of pharmaceuticals manufactured and imported, 1987–2010



Source: Bureau of Drug Control.

5.6.2 Distribution channels

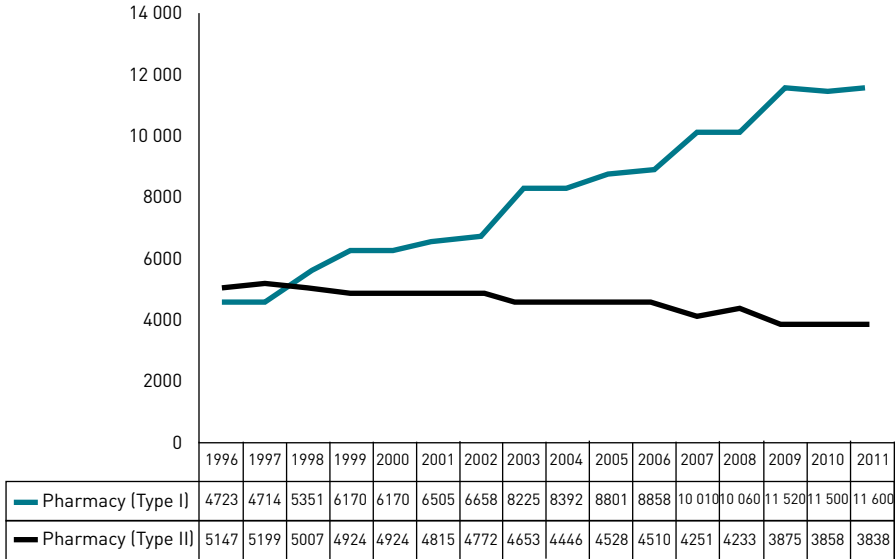
The distribution channel is viewed as a bridge between producers/ importers and users. The distribution methods used by the producers/ importers are, for example, self-distribution, independent distributors, and wholesalers (Bunditanukul et al., 1994). A majority of medicines (62.5%) are distributed via hospitals, whereas 26.3% and 6.5% are delivered to consumers via pharmacies and ambulatory health settings, respectively. A small portion of medicines (4.7%) are reported to be distributed via other channels (Kedsomboon, et al., 2012).

5.6.3 Provision of pharmaceuticals to the public

At the community level, Thai people can access medicines via district hospitals, health centres, clinics and pharmacies. The pharmacies are important sources for Thai people to purchase medicines for their minor illnesses. In rural areas, some medicines are available illegally in grocery stores in villages. Medicines found in grocery stores are, for example, pain killers, cough and cold remedies, and antibiotics (Sringernyuang, 2000; Arpasrithongsakul, 2011).

Modern medicines can be sold in two types of pharmacies. A Type I pharmacy, operated by a registered pharmacist, can sell all medicines including dangerous drugs that need to be dispensed by a pharmacist and specially controlled drugs that require a prescription. A Type II pharmacy, operated by a nurse, can sell only ready-packaged drugs that are not considered dangerous drugs or specially controlled drugs. In 2011, there were 11 603 and 3838 Type I and Type II pharmacies of which 34% and 10% were located in Bangkok, respectively. The number of Type I pharmacies has increased over time, whereas the number of Type II pharmacies has decreased (Figure 5.10). The reduction in Type II pharmacies is the result of a quota regulation that disallows new enterprises for this type of pharmacy (Saramunee, Chaiyasong & Krska, 2011; Bureau of Drug Control, 2011a).

Figure 5.10 Number of pharmacies, 1996–2011



Source: Bureau of Drug Control.

An initiative to promote access to pharmacies with so-called good pharmacy practice is operated through the Quality Accredited Pharmacy Program, which runs on a voluntary basis under the Pharmacy Council accreditation system with support from the Thai FDA, the Community Pharmacy Association, Schools of Pharmacy, and other local pharmacy organizations. The number of accredited pharmacies increased from 23 to 567 during 2003–2011 (Bureau of Drug Control, 2011c). Attempts have been made to integrate accredited pharmacies into the public insurance

schemes in order to provide seamless care from hospital to community. Under this model, the accredited pharmacies can be reimbursed for services such as refilling prescriptions for chronic conditions, screening services for diabetes and hypertension, smoking cessation, and pharmacy home visit from the NHSO (Arkaravichien, et al., 2010).

5.6.4 Access to medicines

Implementation of universal health coverage since 2002 has greatly improved access to medicines among Thai people. However, accessibility to some medicines, especially those for rare diseases (“orphan drugs”) and high-price medicines remains challenging. Strategies and measures regarding orphan drugs include, but are not limited to, the development of an orphan drug list, fast-track registration, and tax exceptions. Additionally, there is a legislative exemption on licencing and registration for public hospitals to import certain orphan drugs. Pharmaceutical and vaccine research and development for neglected diseases is promoted (Olliaro et al., 2001).

In case of affordability of high-price (yet important) drugs and vaccines, studies on cost-effectiveness and budget implications are conducted to identify affordable prices for these medicines to support the country’s health need (Yoongthong et al., 2012b). Then, several measures are applied to ensure accessibility of such medicines. These are, for example, the use of compulsory licensing to produce or import generic versions of selective patent drugs (Wibulpolprasert et al., 2011a), production of important medicines such as antiretroviral compound for HIV therapy to use domestically and export to other developing countries, provision of H1N1 and other influenza vaccines, the use of centralized purchasing, and development of a vendor-managed inventory system (VMI) for essential vaccines (PATH et al., 2011). These measures are carried out jointly by several organizations such as GPO, NHSO and FDA.

5.6.5 Price control

A legislative measure for pharmaceutical price control has yet to be well established and enforced in Thailand. Although drug price control is under the jurisdiction of the Ministry of Commerce, its retail prices are generally determined by the market competitiveness and the wholesale price depends on market segmentation and differential classes of trades. Thus, there are discrepancies of drug prices across types of health care settings. Retail drug prices of drugs in public hospitals are usually not

more than 15% above the purchase price but the markups are higher in private clinics and hospitals (Supakankunti et al., 2001; Tarn et al., 2008).

5.6.6 Pharmaceutical consumption

Pharmaceutical expenditure in Thailand is higher than that in OECD countries. In 2005, it accounted for approximately 43% of total health expenditure (THE) or 2.6% of national gross domestic product (GDP). The spending is 103 517 million Baht in wholesale prices, or 186 331 million Baht in retail prices (Faramnuayphol, et al., 2007).

A substantial number of studies have identified overuse, underuse and misuse of medicines. The overuse of medicines generally occurs in CSMBS rather than UCS and SHI, particularly of nonessential and expensive drugs. In 2005, the CSMBS payment system for outpatients was changed from retrospective reimbursement to direct disbursement, and this escalated pharmaceutical expenditures – drug spending is approximately 83% of total outpatient service expenditure (HISRO&HSRI, 2010). Drug spending for CSBMS beneficiaries is approximately five times that in the UCS (Limwattananon, et al., 2009). Pharmaceutical consumption patterns are also influenced by types of medicines. Opioid analgesics such as morphine for palliative care tends to be underused. And, antimalarial drugs, antituberculosis drugs and anti-HIV drugs are likewise vulnerable to noncompliance and underuse whereas other antimicrobials, especially antibiotics tend to be overly and unnecessary used.

5.6.7 Recent major changes

During the 5 years 2008–2012, there were many changes in the pharmaceutical system in Thailand. Some of the changes are highlighted below.

Introduction to the Fourth National Drug Policy: The policy was launched in 2011 and sequentially followed by the 2012-2016 National Strategic and Action Plan under this policy. The policy has its goal on “universal access to medicines for all, rational use of medicines and national self-reliance” and consists of four national strategies: (1) access to medicine; (2) rational use of medicines; (3) strengthening domestic pharmaceutical industry, biological products and herbal medicines for self-reliance; and (4) strengthening the drug regulatory system to assure quality, safety and efficacy of pharmaceutical products.

Towards cost containment: The level of drug spending on outpatients in CSMBS led to a series of drastic measures to reduce drug costs. These measures included auditing the drug utilization and monitoring system of tertiary care hospitals that have the high numbers of CSMBS outpatients (HISRO&HSRI, 2010) and limiting the reimbursement for glucosamine under selected predetermined conditions. Recently, the Government launched a Cabinet Resolution regarding pharmaceutical cost containment.

More restrictive regulation: In 2012, there was a big scandal of pseudoephedrine smuggled out of hospitals and pharmacies to use as an intermediate for ephedrine production. This resulted in reclassification of pseudoephedrine from a drug under the Drug Act to a controlled substance schedule II under the Narcotics Act.

5.6.8 Current challenges and reform plans

- Overall, the local pharmaceutical industry in Thailand still faces constraints to achieving self-reliance in producing finished products requiring high technology and in local production, because of insufficient capacity in R&D for raw material production (Tantivess, 2007).
- The tension between the need for innovative drugs and the need for access to medicines is increased even more when health is subject to trade with other products in international trade negotiations.
- Irrational use of medicines is still rampant and found at all levels from hospitals to communities. The provision of pharmaceuticals in hospitals and clinics is based on a dispensing doctor model in which pharmaceuticals are viewed as an income source. Historically, there is no separation of prescribing and dispensing role in public or private hospitals or clinics. When markup on medicines is a source of income, there is incentive to dispense more items.
- Lack of an auditing system regarding medicine use, national databases on drug procurement and utilization hinders evaluation of pharmaceutical performance in Thailand.

Future reform plans and factors that may affect the pharmaceutical system include the harmonization of health services of all public insurance schemes that may affect prescription patterns, the ASEAN pharmaceutical harmonization and international trade that would affect the pharmaceutical industry and pharmaceutical supply, and the National

Drug Policy and Policy on Cost Containment that would improve the systems for providing efficient and quality pharmaceutical services to the public.

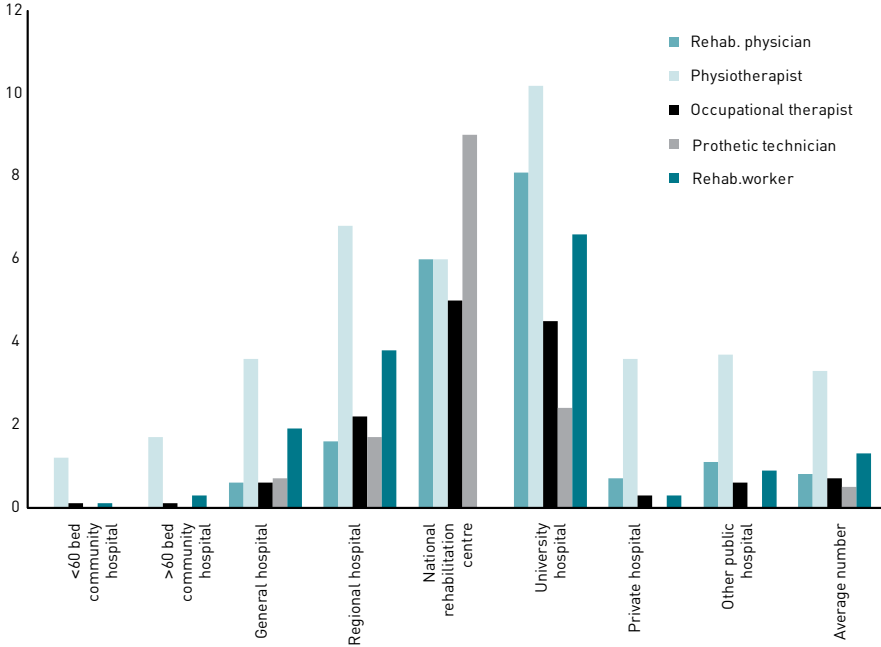
5.7 Rehabilitation/intermediate care

Although rehabilitation care could be provided as an adjunct treatment for many health problems and to promote physical health, in Thailand it is primarily aimed at restoring functional ability for resuming independent living in everyday life and social participation. Post acute rehabilitation care is included in the acute treatment benefit package, while subacute rehabilitation or intermediate care is covered in another health-care package called the “rehabilitation benefit package”. Thus, subacute rehabilitation care requires an functional assessment of the individual and goal setting in either short- or long-term care plan. The Barthel index has been used for this assessment in some provinces as a research and development pilot together with Rehabilitation Impairment Category (RIC), which is closely related to the disease diagnosis by the International Classification of Disease (ICD) (Kheawcharoen, Pannarunothai & Reawphiboon, 2007). Additionally, the International Classification of Functioning, Disability and Health (ICF) has been conceptually utilized in community and PHC approaches in order to communicate and link health and social rehabilitation care for persons with disabilities. ICF coding system has also been in trial phase.

5.7.1 Organization of services

Structurally, there is a rehabilitation department formally organized in every provincial and regional hospital, and there are a few physiotherapists working in multidisciplinary teams with a community nurse and family or general physician in district or community hospitals. A situation analysis on medical rehabilitation services in 2009 showed that the average number of physiotherapists working in a community hospital was only 1.2–1.3 persons, which is less than the average number of 3.3 persons per hospital for all types of hospital. Most rehabilitation personnel are concentrated in university hospitals, national rehabilitation and regional hospitals (Figure 5.11). Consequently, the outpatient rehabilitation service accounts for only 2.8% of total outpatients and 5% for total inpatients (Kheawcharoen et al., 2009).

Figure 5.11 Average numbers of rehabilitation personnel by type of hospital, 2004–2007



Source: Kheawcharoen et al, 2009.

5.7.2 Availability and accessibility of services

Inadequacy of rehabilitation services causes permanent disability of patients, which shifts both the physical and economic burdens from the hospital to the family (Riewpaiboon et al., 2009, 2011). In the community, there are health volunteers working collaboratively with social development and human security volunteers to improve access to services and quality of life of persons with disabilities (PWD) and older people. This enables access to social welfare regarding the Disability Act 2550 B.E. (2007) and Elderly Act 2546B.E. (2003) such as living allowance from local authority office, travelling assistance, and home modification. The sub-district health centre is the important point of interface for rehabilitation care management.

In the wider system perspective, an assessment study of need for rehabilitation care in 2009 showed that most stroke survivors are still unable to perform activities of daily living –like moving from place to place, or even swallowing or communicating with others –on

the day of discharge from provincial and regional general hospitals (Vichathai, et al.,2009). The average length of stay of acute stroke patients in general hospital was only about 5 days. They were commonly referred back to a community hospital close to where they lived, but most did not go on to attend rehabilitation care at the hospital. The common reason for dropping out from the health-care system was difficult and costly transportation. There was consistent inadequacy of rehabilitation staff to provide outreach or home-based rehabilitation care, particularly at district and lower levels. However, within the last few years, the number of physiotherapists has been increasing in district and sub-district health-care systems, which shows that secondary and primary health-care levels are focusing on subacute and non-acute health care. Nurses were also additionally trained in rehabilitation. Community-based rehabilitation was a common approach and conducted in harmonization with family medicine practice.

Assistive devices such as wheelchair, prostheses, orthoses, other mobility aids, hearing aids and visual aids are included in the rehabilitation benefit package of the UCS and provided according to need. This kind of service is mostly prescribed and provided at provincial level. Long-term maintenance service is rather inadequate. There are some sporadic community development wheelchair and prosthetic workshops which are usually collaborations between hospital, PWD self-help group and nongovernmental organization with support of the NHSO.

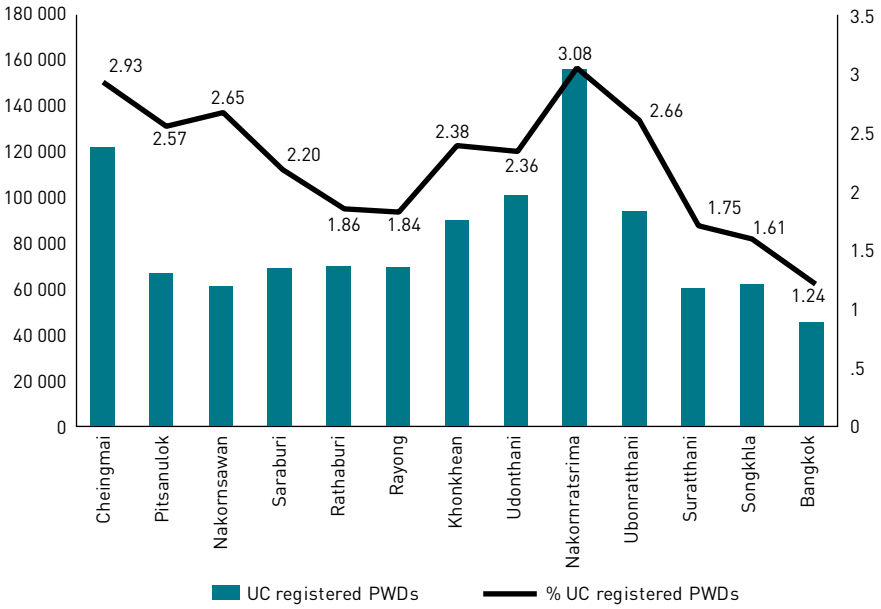
In 2004 (2 years after establishing the UCS), rehabilitation care financing was started at 4 Baht per capita for UCS population by the NHSO, in addition to the capitation budget for curative (outpatient and inpatient), prevention and health promotion. Rehabilitation care financing has been increasing with demand, up to 13 Baht per capita in 2012. About 30% of the annual budget is commonly targeted for rehabilitation service development, which is preferably in partnership between service providers and PWD self-help groups or organizations. The remaining 70% is allocated for hospital services reimbursement, including both rehabilitation services and assistive devices. The pilot decentralization of rehabilitation financial management under the NHSO to provincial level by establishing a mutual rehabilitation fund between the NHSO and Provincial Administrative Organization (PAO) was started in 2010. It is expected to be a better cofinancing system for integrative health and social care for PWD and older people.

The SHI is another health insurance scheme in which rehabilitation care for both work-related and non-work-related disability are included in the health benefit package. It is rather less than the rehabilitation benefit package of UCS, and the payment system, retrospective fee-for-service reimbursement, is quite problematic and considered a barrier to accessing care. The majority of those with disabilities quit work and have less cash to pay upfront; moreover, they also have difficulty in travelling to claim reimbursement of their payments.

The last health insurance scheme is the CSMBS. It does not specifically mention rehabilitation for restoring functional ability, but as a part of treatment process of disease. However, the costs of rehabilitation care could be reimbursed.

Thailand national disability statistics show that 2.7% of the population (about 1.74 million people) have some kind of disability or impairment (NSO, 2007). As of June 2012, there were 1 579 382 (854 750 male and 724 632 female) PWD legally registered with the Ministry of Social Development and Human Security (NEP,2015). In order to access health care, particularly rehabilitation care, 774 261 and 1 074 607 legally registered PWD were registered with the UCS as of September 2010 and 2011, respectively. The average percentage of UCS-registered PWD is about 2.25% of the total UCS population, ranging from 1.24% in Bangkok to 3.08% in one Nakorn Ratchasima (Figure 5.12). This implies that more people who are in need for rehabilitation care could access it by right. The distribution of access still is geographically uneven due to variation in supply-side rehabilitation service capacities.

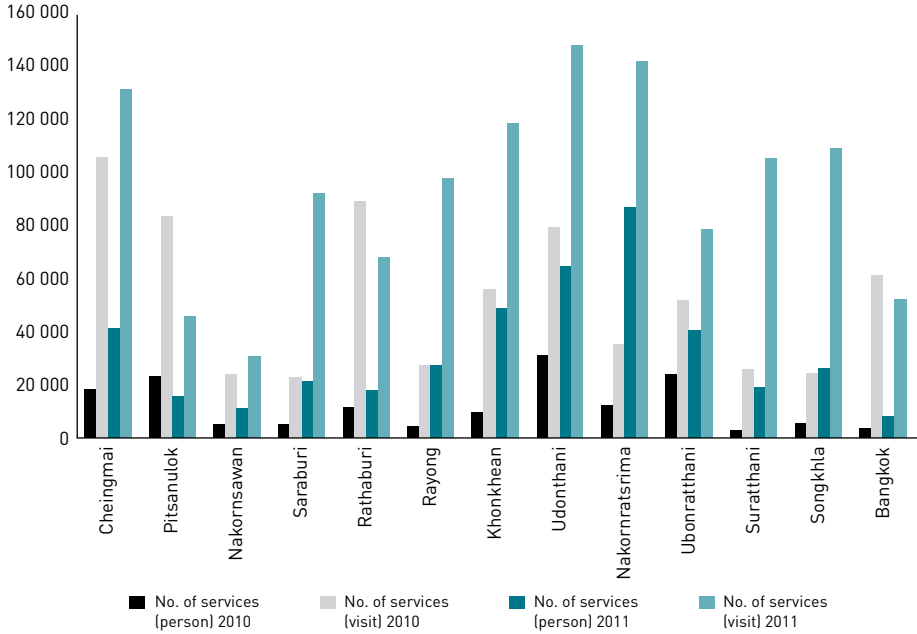
Figure 5.12 Number and percentage of UCS-registered persons with disabilities, 2011



Source: Health Insurance Information Service Centre (2011b).

As a result of improving access to health care by PWD, service utilization in terms of persons and visits for rehabilitation care increased markedly (Figure 15.13); however, the distribution is uneven across health regions.

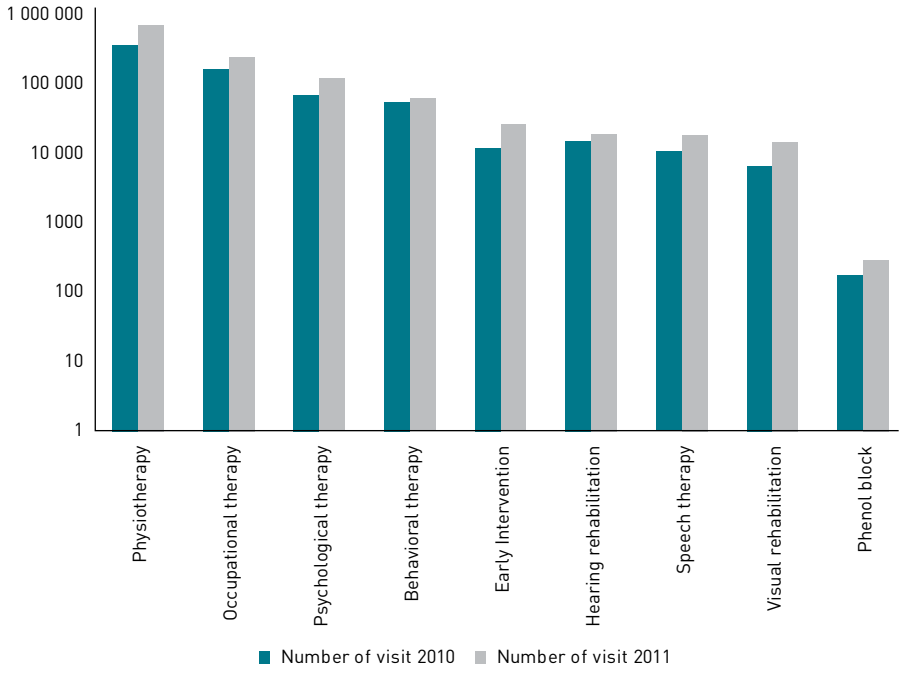
Figure 5.13 Rehabilitation service use as persons and visits by region, 2010 and 2011



Source: Health Insurance Information Service Centre (2011b).

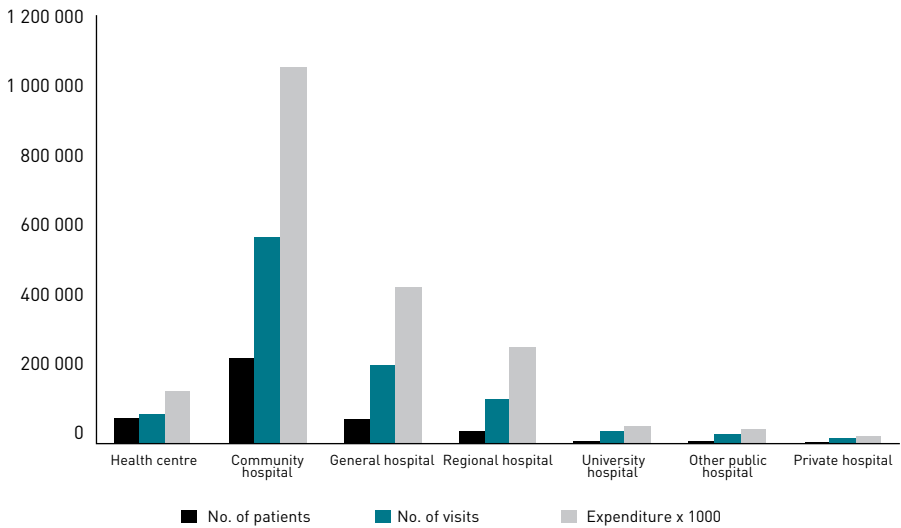
Physiotherapy focused on mobility and ambulation were most commonly provided, followed by occupational therapy for hand function, swallowing function, cognitive function, and overall activities of daily living. Psychological and behavioural therapy were not used so much, while speech therapy and others were very few (Figure 15.14). The setting where rehabilitation services are provided was shifting to community hospitals during 2010–2011 (Figure 5.15). The average number of visits to the rehabilitation care programme was about three visits per person per year, which seems rather low for ensuing improvement of functional outcomes.

Figure 5.14 Number of visits by type of rehabilitation services, 2010 and 2011



Source: Health Insurance Information Service Centre (2011b).

Figure 5.15 Number of rehabilitation patients, visits and expenditure by type of hospital, 2011



Source: Health Insurance Information Service Centre (2011b).

Provision of assistive devices has been increasing (Table 5.4). The ratio of number of devices per person decreased from 2.2:1 in 2009 to 1.8:1 in 2010 and 1.6:1 in 2011. This might imply more effective distribution of devices to needy persons, i.e. better access to this kind of rehabilitation service. However, great variation in service utilization was found by region.

Table 5.4 Number of PWDs receiving assistive devices and number of devices by region, 2009–2011

Region	2009		2010		2011	
	No. persons	No. devices	No. persons	No. pieces	No. persons	No. pieces
Chiangmai	916	2390	960	1588	2808	3983
Pitsanulok	336	955	2029	3173	1024	2342
Nakornsawan	374	794	707	1763	2160	3035
Saraburi	731	1676	785	1462	2032	3800
Ratchaburi	606	1934	943	1873	1624	2485
Rayong	706	1535	968	1656	1457	2884
Khnonkhen	604	1124	1286	2863	2874	4342
Udonthani	827	1577	1211	2321	2134	3561
NakornRatchasima	1310	2358	1047	1769	2177	3369
UbonRatchathani	1526	3159	2086	3220	3877	5140
Suratthani	384	930	528	1015	1156	1992
Songkhla	651	1252	806	1716	1767	3192
Bangkok	492	610	222	310	563	700
Total	9463	20294	13578	24729	25653	40825

Source: Health Insurance Information Service Centre (2011b).

In summary, improved access to rehabilitation services and assistive devices has been observed even though geographical inequity remains. Improved access to care has been aided by the implementation of universal health coverage since 2002. However, for some specific population groups there are other kinds of barriers such as physical for people with mobility disability, language for the deaf, and information access for the blind. Slopes, accessible toilets and car parks are the minimal access concerns of nearly all hospitals and health centres, but the quality of this physical access is sometimes inadequate. In order to reduce the communication barrier for the deaf, the NHSO supported training in basic sign language for health-care providers; however, this was discontinued as it wasn't effective for various reasons. Sign-language

interpretation service has been developed by the Ministry of Social Development and Human Security (MSDHS). For information access for the blind, there is no specific intervention in the health system, but there is concern and action in the wider social context of Thailand.

5.7.3 Current problems and challenges

The major challenges within recent years have come from the increasing need for rehabilitation care for the ageing population and increasing prevalence of chronic disabling health conditions either from injuries or diseases. The current acute-oriented health system has little space for subacute labour-intensive rehabilitation care which requires more time. While tertiary health care settings have more rehabilitation personnel, most PWD who are in need of rehabilitation services live in rural communities. Redistribution of rehabilitation personnel and redesigning of health-care facilities at the secondary level are challenges for future reform plans.

5.8 Long-term care and informal care

5.8.1 Situation of care needs

Long-term care (LTC) is a range of medical and/or social services designed to help people with disabilities or chronic care needs. Services may be short- or long-term and may be provided in a person's home, in the community, or in residential facilities (e.g. nursing homes or assisted living facilities). Most of the people in Thailand who need LTC are senior citizens. The rapidly growing number of older people in Thailand and PWD, including patients with chronic conditions who need continuity of care, indicate the need for LTC system development. It was projected that the number of older people with severe to profound dependency levels would increase from 40 000 men and 60 000 women in 2004 to 110 000 and 170 000, respectively, in the following 20 years (Table 5.5) (Srithamrongsawat et al., 2009).

Table 5.5 Projection of number of various dependent levels of older people, 2004–2024 (millions)

Limit in activity of daily living	Male					Female				
	2004	2009	2014	2019	2024	2004	2009	2014	2019	2024
None	2.36	2.87	3.55	4.42	5.35	2.51	3.46	4.49	5.67	6.91
Mild	0.33	0.37	0.44	0.53	0.64	0.68	0.69	0.75	0.88	1.03
Moderate	0.20	0.21	0.24	0.29	0.35	0.37	0.32	0.35	0.41	0.48
Severe	0.03	0.04	0.05	0.06	0.07	0.04	0.05	0.06	0.08	0.10
Profound	0.01	0.02	0.03	0.04	0.04	0.02	0.03	0.04	0.05	0.07
Total number of elderly (millions)	2.93	3.51	4.31	5.34	6.45	3.62	4.56	5.70	7.09	8.58

Source: Srithamrongsawat et al. (2009).

Almost all older people in Thailand who need LTC receive informal care provided by their families and relatives. According to Thai traditions, caring for older people is the responsibility of children and grandchildren, and should take place in the family. Nevertheless, in 2001, the Second National Plan on the Elderly (2002–2021) was implemented. It includes strategies on LTC provision that cover a wide range of activities from promoting and supporting informal care within the family, providing health and social services both in home/community and institution, and developing shelter/accommodation services and environmental adaptation to fit in with activities of older people (Chen & Chunharas, 2009). Since 2009, local governments have paid more attention to developing home/community services to assist older persons and their caregivers. According to home/community services, the main policy direction of the Second National Plan on the Elderly also emphasized home- and community-based services to enable older persons to continue living in their own homes or in the community (Kespichayawattana & Jitapunkul, 2009). Two main ministries are responsible for providing the services mentioned above – the MOPH and the Ministry of Social Development and Human Security (MSDHS).

According to the 2007 Disability Survey, older persons with a great deal of difficulties/problems in carrying out at least one daily routine activity such as eating, bathing, face washing/teeth brushing, dressing, and excretion and cleaning after excretion were in total of 139 000 persons (NSO, 2007; Chunharas, et al., 2009). Most of them, approximately 135 000 persons or 96.8%, had caregivers and only few of them, 4500 persons or 3.2%, had no caregiver (Chunharas, et al., 2009). Most caregivers were their family members: 46.7% were their children, followed by 27.8% who were their

spouses. However, some caregivers did not stay in their families, such as relatives, nurses/health service officers, and special caregivers.

5.8.2 Organization of long-term care

There are several forms of welfare system and service provided by governments, private for-profit sector, and nongovernmental organizations. However, the Government puts more emphasis on empowering independent older persons within their communities and residential homes for the independent older people who have no carer at home. The majority of services for older people with some degree of dependency are mainly provided by private for-profit providers. Table 5.6 presents available services for both independent and dependent older people in Thailand.

Table 5.6 Available welfare services and care assistance for Thai elderly

Elderly/PWD caregiving system/providers	Responsible organization
1. Informal care	
1.1 Home- and community-based care	
1.1.1 Home care volunteers	<ul style="list-style-type: none"> • Bureau of Empowerment for Older Persons (MSDHS) • MOPH
1.1.2 Older persons' clubs	National Older Persons Council Association of Thailand
1.1.3 "Home care peer group" volunteer project	National Older Persons Council Association of Thailand
1.1.4 Community Welfare Funds for the Elderly	Community Organizations Development Institute
2. Formal care	
2.1 Home- and community-based care	
2.1.1 Home health care by health practitioners	MOPH
2.1.2 Paid caregivers	Private sector, profit-making organizations
2.1.3 Personal assistants	MSDHS
2.2 Institutional care	
2.2.1 Residential homes for older persons	MSDHS, BMA, PAO
2.2.2 Elderly care centres	
• LTC hospitals	Private for-profit and public organizations
• Centre for living assistance	Private for-profit and public organizations
• Nursing homes	Mainly private for-profit
• End-of-life care	Private for-profit and public organizations

MSDHS: Ministry of Social Development and Human Security; BMA: Bangkok Metropolitan Administration; PAO: Provincial Administration Organization; LTC: long-term care.

Source: Synthesis by the Author

The government agencies still serve as the main mechanism in initiating and arranging models of services or activities for older people and PWD care. Most LTC in Thailand is informal care. There are many forms/models of elderly care as detailed in the following.

Informal care

1. Home care for older people and persons with disabilities

This project was initiated and has been carried out by the MSDHS since 2002 with the objectives of building the care system and protecting the rights of older persons in the communities. The Home Care project is undertaken through interaction between the public and the community members, so they can take part in caring for older people and PWD in their own communities. The project targets those without caregivers who encounter social problems, and enables them to access home-based care provided by volunteers/field workers and to access public services, and more importantly supports them so they can live with their families in the communities with a good quality of life. The Home Care project has been extended into additional areas each year. On 10 April 2007, the Cabinet adopted a resolution extending the Home Care project to cover all areas of the country. In 2010, there were 23 324 Home Care volunteers.

2. Home care peer group volunteer project

In addition, there is a Home Care project in the form of a peer group carried out by the Senior Citizen Council of Thailand under the royal patronage of Her Royal Highness the Princess Mother. This project has provincial branches all over the country in collaboration with Provincial Health Offices. The concept is to train members of elderly persons' clubs to become home-care volunteers, supervised by the local community hospital. The volunteers will visit the dependent older persons twice a week.

3. A community long-term care model development

This project is carried out under the "Project on the development of a community-based integrated health care and social welfare services model for older persons in Thailand", which has been piloted in four provinces: Chiang Rai, Khon-kaen, Nonthaburi and SuratThani. The main objectives are to create a model for providing services for older people that is consistent with communities' needs and context; and to carry out an LTC model for older persons. The model uses the sub-district as a key

mechanism for integrating community-based care for older people, with major involvement of the local government and the civil society sector. In 2010, there were 42 sub-district models in 35 provinces. The pilot sites are those sub-districts that meet the criteria set by the project: (1) have a qualified elderly club;(2) have volunteer caregivers;(3) have qualified home health care for older people whose services are provided by health-care practitioners; and (4) have established a health service system for both dependent and non-dependent older persons so that it can be managed mainly by the community to cater to the future ageing society.

Formal care

1. Home-based and community-based care

Home Health Care (HHC)

The Department of Health and MOPH launched a pilot project to develop home health care (HHC) as integrated health-care at home for older persons in collaboration with hospitals. The HHC project aims to encourage development of HHC for older persons and people with chronic diseases in order to ease access to consecutive health care. In addition, the project simultaneously provides activities to strengthen the family and community institutions for care-giving, as well as to improve and prevent health of the old-age group from diseases which will reduce expenditure burdens on hospitals and the health system. The HHC project was launched in 2005 in 26 pilot areas; in 2006–2007 it was extended to all MOPH hospitals throughout the country.

Health services are provided by health personnel in cooperation with village health volunteers (VHV) through PHC facilities. Social services are provided mostly by local government, supported by the MSDHS and Ministry of Interior. Nevertheless the integration of health and social services is not well systematized.

Paid caregiver

The demand for formal LTC has been increasing as the result of ageing population, increase of chronic disabling conditions, and urbanization (Kespichayawattana & Jitapunkul, 2009). The formal LTC system is prominently available in urban areas. Families begin to hire formal caregivers when family members have to work outside their home and are unable to provide care for the dependent member, usually their parents.

Care centres for older people, which provide care assistance services for older people, PWD and people with chronic disease at home, have become popular businesses since they can respond to the needs of individuals/families in urban society, such as Bangkok Metropolitan. Almost all elder-care training schools and centres in Bangkok are owned or managed by medical or nursing professionals. These schools are established in the form of companies in order to conduct marketing work and find jobs for their students. The schools also act as intermediaries among workers, older people/PWD and families. The exact number of these formal caregiver centres is not known due to lack of definite and systematic registration and regulation.

Related government ministries have made movements towards regulating formal LTC business, even though they are not comprehensive or well systematized. In January 2010, the MOPH Notification on Business Harmful to Health specified that all businesses providing home health care for older persons be categorized as a controlled business according to the Public Health Act, B.E. 2535. However, enforcement of this legal measure is in the hands of local governments and it has not been implemented yet. In October 2009, the MSDHS issued a regulation regarding paid personal assistants who assist people with disabilities to access public services and still be able to live independently in their home within the community; these personal assistants receive payment from the Government budget at the rate of 50 Baht/hour for 6 hours/day. The project was launched in 2011 in all provinces with pilot training of personal assistants. In fiscal year 2011, five personal assistants from each province and 25 from Bangkok were trained.

2. Institutional care

Residential care

The Department of Social Development and Welfare of MSDHS takes direct charge of residential homes for older people and PWD. There are 10 residential homes for PWD all over the country and there are 25 public residential homes for older people; however, only 12 institutions remain under the MSDHS, with 13 institutions having been transferred to PAOs.

The Department of Social Development and Welfare provides development and rehabilitation services for PWD in collaboration with other related private and public agencies. These LTC services include health care, rehabilitation, education, social care, and occupation. Services have been provided in all 10 residential homes for PWD.

Institutional care in other forms

Institutional LTC is provided by public and private hospitals and private nursing homes. LTC is provided in various private hospitals, each of which has a team of physicians, nurses and practitioners providing general care to the resident older persons, including medical treatment of illness in a specific ward. LTC provided by nursing homes is considered as the highest level of care where services are provided 24 hours a day to assist older people with their daily routines, movement, social, mental health and personal care, medical support, as well as meals and accommodation. A survey on the number of LTC facilities for older persons in 2009 (Sasat et al., 2009) found that there were 138 facilities, 68 of which were in Bangkok (49%), 42 in the Central region (30%), 13 in Northeastern region (9%), 10 in Northern region (7%), and five in Southern region (4%). The most common LTC facilities by type were nursing homes for the aged (43%), followed by residential homes for older persons, LTC at hospital, centres for living assistance, and end-of-life care facilities. The majority of nursing homes were private hospitals and religion-linked nongovernmental organizations. Since there is no specific ministerial regulation on nursing homes, a nursing home can be registered under the ministerial regulation of acute hospitals. Private hospitals with facilities to treat acute illnesses can immediately turn some beds to long-stay care service. Consequently, data about the total number of nursing homes and their capacity is not available from registration. Quality accreditation of nursing home services is currently crucial (Kespichayawattana & Jitapunkul, 2009).

The first public nursing home, Chiangmai Neurological Hospital, was established in 2009 to provide extensive care to older persons, to offer appropriate rehabilitation to recuperating patients in order to help relieve the burdens on patients' families, and to give training to those caring for patients with chronic conditions by a team of specialized health-care practitioners. Customers can be divided into two groups: (1) independent and dependent older persons; and (2) patients with stable chronic conditions, such as stroke patients under rehabilitation, who are free from acute symptoms of communicable diseases. Service charges depend on patients' dependency level and room type. The facility can accommodate 20 beds for out- and inpatients.

5.8.3 Challenges for system development

For home- and community-based care, no definite and systematized data are available to monitor quantity and quality of services provided. The services are reported within the regular health service activities such as home health care, services for people (not specific for frail elderly/PWD) by VHV or health personnel. Social care is reported separately by the MSDHS. These are the challenging issues of integration among health and social LTC.

There has been an increasing number of public residential homes and private nursing homes to respond to the needs of older people and people with chronic disease. Of the older persons in such residential homes, over 50% were dependent and needed more intensive health care in LTC, which is currently very limited.

5.9 Palliative care

5.9.1 Organization of services

Palliative care is becoming increasingly focused in Thailand due to rising needs, especially for those with cancer in late stage, in parallel with the declining needs from HIV/AIDS patients because of antiretroviral drugs available under the universal coverage policy. In the four-part typology developed by International Observatory on End of Life Care, Thailand's palliative care system was categorized in Group 3: localized hospice-palliative care provision, but not yet reaching a measure with mainstream service providers (Group 4) (Wright et al., 2010). However, this international evaluation report was conducted in 2008.

Palliative care in Thailand was developed in response to needs mainly from HIV/AIDS and cancer patients. The two types of active service organizations are faith-based community (charitable) facilities and hospitals. The faith-based community facilities are religion-based (e.g. the Camillian Social Centre, St Clare's Hospice and Mercy Centre) and all provide antiretroviral drugs. Temple of Wat Phrabat Nambu provides supportive care to the dying. All provide hospice and palliative care services to HIV/AIDS patients, mostly late-stage patients, who are referred by hospitals, choose to receive the services, or are rejected by their families.

Hospital palliative care may be provided by public and private hospitals. Most of the public ones are MOPH hospitals with special centres for cancer patients or medical school-based hospitals. Their targeted patients are cancer patients. The palliative care given is integrated care provision by a multidisciplinary team, which is an inpatient-based service and community care provision. The integrated provision is operated under the hospital–community network. The National Cancer Institute and regional cancer centres, both of which are under the MOPH, started a home-care programme in 1998, in which management of pain and supportive care were the main focus (Wright et al., 2010).

5.9.2 Access to palliative care

Opioid availability is important in pain management. Two important factors created barriers to opioid availability during the 1990s: the impact of strict Government drug controls and a lack of pain management education for most health-care professionals. The Government's strict controls also generated a bad attitude within the public about opioid use even for medical purposes, as many were afraid of addiction (Wright et al., 2010). Opioid phobia led to inadequate pain and symptom management in practice.

Morphine consumption in Thailand was very low, less than 0.1 mg per capita in 1980s, per capita consumption increased to 0.3 mg in 2000, and 1 mg in 2012 (Pain & Policy Studies Group, University of Wisconsin, 2014b). Still per capita morphine consumption in Thailand was much lower than the global average of 6.28 mg per capita in 2012 (Pain & Policy Studies Group, University of Wisconsin, 2014a).

Nevertheless, access to opioids was limited to patients in the community requiring continuous pain management. To get opioid drugs, they have to travel to the hospital because all opioid drugs are strictly prescribed by the hospital physicians (compare with antiretroviral drugs for HIV/AIDS patients, which are easier to access due to the programme giving convenient access to many types of facilities) (Wright et al., 2010).

A strategic way to make opioids accessible for medical use is to incorporate a pain-management education programme into both undergraduate and postgraduate medical and nursing curricula in order to build appropriate attitudes and to improve the use of opioids for pain management. The cancer centres have developed and used the protocol of pain management in cancer patients. This will eventually make their use nationwide.

The capitation and DRG-based payment of the UCS has been a driving factor for most contracted hospitals to contain their costs. It also encourages the hospitals to reduce inpatient beds for palliative care and persuades them to develop community palliative care network. As of 2012, the NHSO, responsible for the UCS, realized this barrier and produced guidelines for paying for palliative care.

Two crucial issues are raised in the guidelines: to provide supportive care in integrated and holistic ways and to provide morphine to patients at home. The payment is actually a budget allocation to system-based development programmes. The entitled programmes must be either the regional or provincial network provision with emphasis on provider capacity-building, systems learning, and continuous quality improvement (NHSO, 2012b). This NHSO allocation type is common and instrumental for developing any care provision system which is still in its infancy. Palliative care in Thailand can be argued as moving from the typology of Group 3 to Group 4 (Wright et al., 2010).

Education and training in palliative care is mostly conducted in medical and nursing schools. Changing or developing appropriate attitudes and practices among health-care professionals towards the dying are important for enhancing system development. The Thai medical curriculum teaches medical students a holistic view, encouraging them to realize the meaningfulness of life. Traditional and alternative medicines are also taught because they are an option in patient choice. The palliative care curriculum of the Faculty of Medicine at Prince of Songkhla University was designed with the inclusion workshops on Dharma, healing workshops and “peaceful death” (Wright et al., 2010).

An important issue in palliative care provision is the right to die without recourse to cardiopulmonary resuscitation; this is acknowledged in section 12 of the National Health Act 2007. By 2010, the guideline for health-care professionals and the dying who determine to die by refusing resuscitation was released and prescribed in a Ministerial Regulation. The dying person must express their wish to use this action when they are conscious by self-completing or getting an assistant to help complete the form. The right to die has been controversial and subject of public debate, especially the issue of diagnostic certainty and decisions to withdrawing service. Comprehensive research on this topic is needed and should be conducted by looking from different disciplines to help develop informed implementation.

In conclusion, the palliative care system in Thailand is moving forward by way of integrating the hospital care provision into the community. In this context, various groups of patients requiring palliative care would have more opportunity to access it. Thailand's palliative care is on a road to palliative typology of Group 4 in which the palliative care is reaching the mainstream, through several instruments, such as education, awareness creation and financing. Pain management and supportive care under palliative programmes are more accessible to communities. Some important elements which must not be ignored are the activities of research, knowledge management and information systems, so as to help design effective systems and practices.

5.10 Mental health care

5.10.1 Organization of mental health services

The Department of Mental Health (DMH) is the national mental health authority. It provides advice to Government on mental health policy and legislation, sets the standard of care, and develops and transfers mental health technologies to all stakeholders. Mental health services are organized according to catchment areas.

There are 122 public mental health outpatient facilities (OPDs) in Thailand – 25 of them are located in regional hospitals, 70 in provincial hospitals, 10 in university hospitals, and 17 in mental hospitals. Some 11% of mental health outpatient facilities are for children and adolescents. In 2004, the number of outpatient visits was 1432.5 per 100 000 population.

There are 25 psychiatric inpatient units in regional hospitals, which have 0.4 beds per 100 000 population. There are no beds specifically for children and adolescents in these facilities. Some 33% of admissions are female and 3% are children/adolescents (under 19 years). It was estimated that the average length of stay in psychiatric inpatient units was 5 days. Data about diagnoses were not available. In terms of treatment, the majority of patients received one or more psychosocial interventions in the previous year (WHO-AIMS, 2007).

There are no community residential facilities for patients being discharged from the hospitals. A few temples are involved in a pilot project to house patients discharged from mental hospitals under the supervision of nurses, but quality of care has not been verified.

5.10.2 Mental hospitals

There are 17 mental hospitals in Thailand, which have 13.8 beds per 100 000 population. All mental hospitals are organizationally integrated with mental health outpatient facilities. Some 9% of beds in mental hospitals are reserved for children and adolescents. In the last 5 years (2008-2012), the number of mental hospital beds has decreased by 7%. Some 34% of patients treated were female and 5% were children/adolescents. The patients admitted to mental hospitals were in the following diagnostic groups: schizophrenia, schizotypal and delusional disorders, and others, such as mental retardation and epilepsy. Some 3% of patients spent more than 10 years in mental hospitals, while 66% spent less than 1 year. Data about the occupancy rate and the average length of stay in mental hospitals are not available. In terms of treatment, the majority of patients received one or more psychosocial interventions in the previous year.

The number of outpatient visit of psychiatric patients has increased, while numbers of new outpatient and admission cases have gradually decreased (Table 5.7). Psychoses and anxiety are common diagnoses of those psychiatric patients – 31.4% and 26.3%, respectively, in 2006 followed by depression (9.2%), epilepsy (8.2%) and substance abuse (6.5%).

Table 5.7 Number of psychiatric patients, 2004–2011

	2004	2005	2006	2007	2008	2009	2010	2011
Inpatients (admission cases)	99 426	93 929	90 862	87 664	87 776	89 250	91 340	83 388
Total outpatient visits	878 400	936 720	942 240	942 480	942 720	1 022 504	1 055 548	1 091 646
New outpatient cases	99 872	108 650	100 575	122 821	102 830	80 227	70 717	88 432

Source: Department of Mental Health.

5.10.3 Mental health in primary health care

Both physician-based and non-physician-based primary health care (PHC) clinics exist in the country. Assessment and treatment protocols, the Clinical Practice Guideline (CPG) have been introduced in the majority of physician-based PHC clinics. Few physician-based PHC clinics make referrals to a mental health-care professional, because having contacts

with mental health staff is still considered a stigma. Conversely, it is estimated that non-physician-based PHC clinics refer on average at least one case per month to a higher level of care.

5.10.4 Access to mental health services

Patients who were physically restrained or secluded at least once in a psychiatric inpatient unit or mental hospital were estimated to be between 2% and 5% in both kinds of facilities. There are no records on involuntary admissions. However, it is estimated that the percentage was high because almost all admissions are forced by police or families. The number of beds per population in Bangkok is 5.6 times higher than in the rest of Thailand, which creates inequitable access to care for rural people.

In addition to psychiatric treatment, the DMH also provides a hotline, consultation and stress clinic. This prevention strategy has been extended over the country to provincial health offices, hospitals and private institutes. In 2005, there were 210 institutes providing telephone consultation, 353 stress clinics and 487 consultation clinics (Table 5.8).

Table 5.8 Facilities of prevention, mental health service, 2005

Provider	Telephone consultation	Stress clinic	Consultation clinic
Provincial health office	6	8	7
Regional/provincial hospital	60	68	72
Community hospital	125	257	377
MHD hospital	17	17	17
Bangkok Metropolitan Administration hospital	2	1	12
Private	0	2	2
Total	210	353	487

Source: Department of Mental Health.

5.10.5 Human resources in mental health care

Usually psychiatrists, psychologists and social workers work 25% of their time in inpatient and 75% in outpatient departments. Occupational therapists work only for inpatient departments, providing services until the patient's discharge. The total number of human resources working in mental health-care facilities per 100 000 populations is 7.29. Almost half (48%) of psychiatrists work in public mental health-care facilities. In terms of staff-to-bed ratios, there are 0.01 psychiatrists, 0.15 nurses,

0.02 psychologists, social workers or occupational therapists, and 0.05 other mental health workers per bed in mental hospitals. Human resources in mental health care are concentrated in the main cities, which limits access to mental health services for rural users.

The DMH intended to increase the number of psychiatric nurses by recruiting 50 new nurses a year into mental health training in three institutes, namely, Somdejchoapraya institute, Srithanya hospital and Suanprung hospital. To respond to the limited number of psychiatrists, the Medical Council announced that postgraduate training in psychiatry could be undertaken without mandatory working in rural area for 3 years. This policy targeted an additional 200 psychiatrists by 2007. The policy target was achieved, the total number of psychiatrists increased from 351 in 1999 before such training flexibilities (Department of Mental Health) to 679 (176 of which were child and adolescent psychiatrists) in 2014 (Medical Council of Thailand).

5.10.6 Financing of mental health services

Approximately 3.5% of government health-care expenditure in 2004, or 1.7 billion Baht, was directed towards mental health services. Of all the expenditures on mental health, 57% was directed towards mental hospitals. This budget was mainly spent on human resources and provision of care.

Legislation concerning a tax incentive for employers to hire a percentage of employees that are disabled exists, but is not enforced. There is no legislation or financial disincentive against discrimination in housing for people with severe mental disorders.

5.10.7 Challenges

Mental health policy and plans exist and were last revised in 2005. The National Policy does not include service strategy development or patients' human rights protection. The mental health system has no day treatment facilities or community residential facilities for people with mental illness. A large part of the financial resources is directed to mental hospitals. The ratio of human resources per hospital bed is low for all professional groups. The majority of beds are still located in mental hospitals. Access to mental health-care facilities is uneven across the country, favouring those living in or near the main cities. In terms of support for child and adolescent mental health, a psychosocial care system has been

established in schools. Many primary and secondary schools have school-based activities to promote mental health and prevent mental disorders, and the existence of psychosocial care is one quality assessment criterion for schools by the Ministry of Education. However, psychosocial support in schools is mainly delivered by general teachers and only a few schools have part- or full-time mental health-care professionals.

5.11 Dental care

5.11.1 Organization of dental services

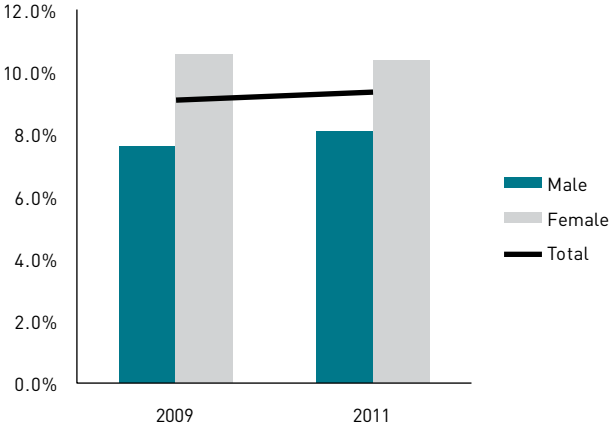
Dental services are available in all levels of public health-care facilities, including health centres, community hospitals, provincial hospitals, and regional hospitals. Dentists and dental nurses provide dental treatment and prevention services at hospital level; in health centres primary dental care is mainly provided by dental nurses. Half of all Thai dentists work in private dental clinics and private hospitals. Thus, the private sector plays an important role in providing services, especially in Bangkok and municipality areas.

The Thai Dental Council is the main actor for quality control of dental services through accredited curricula of dental schools and national licensing mechanism. However, there is no relicensing process.

5.11.2 Access to dental care services

Approximately 9% of the Thai population receives dental services. Females have higher utilization rate (10.4% in 2011) than males (8.1% in 2011). However, utilization is increasing, especially among males.

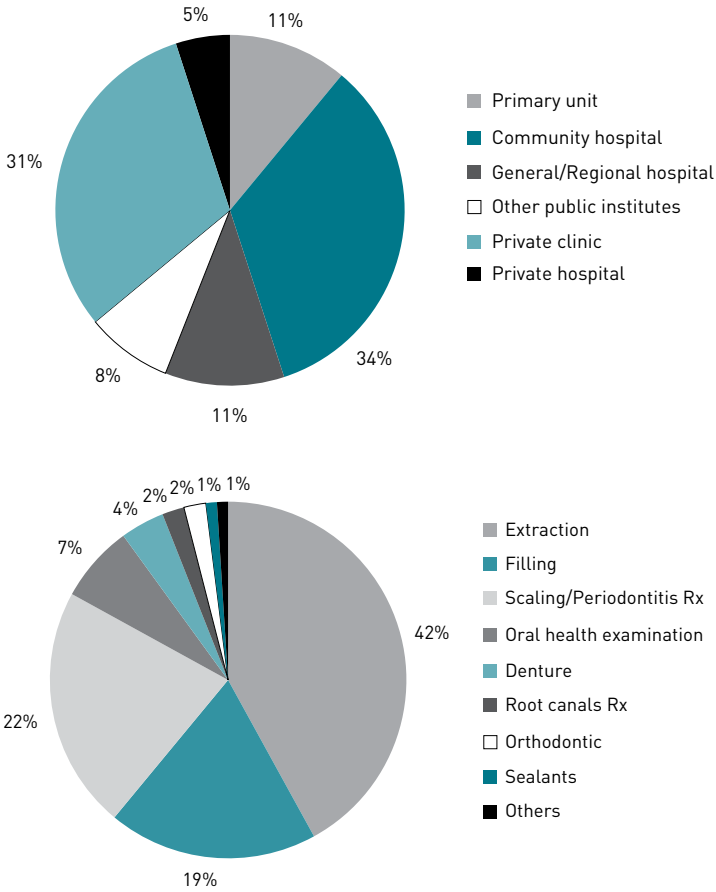
Figure 5.16 Percentage accessibility to dental care services, 2009 and 2011



Source: National Statistical Office, 2009 and 2011.

Private clinics and community hospitals are major providers of dental services, accounting for 31% and 34% of total dental visits in 2007, respectively (Figure 5.17), while only 11% was provided in PHC unit or health centre. Extraction, descaling/periodontitis treatment, and filling were major services of those dental care services in 2007.

Figure 5.17 Percentage of dental care institutes and service types, 2007



Source: National Statistical Office (2007)

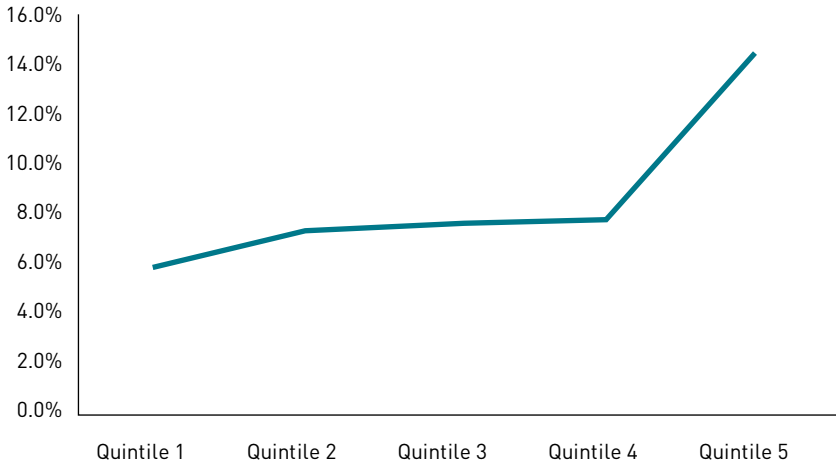
Table 5.9 Population/dentist ratios by region, 2003–2009

	2003	2004	2005	2006	2007	2008	2009
Bangkok	1458	1422	1305	1266	1230	1195	1168
Central	11 259	11 235	10 494	9967	9268	9116	8909
Northern	13 137	12 752	11 830	11 571	10 820	10 276	9903
Southern	13 443	12 160	11 877	11 118	10 657	10 345	10 101
Northeastern	21 739	21 967	21 120	20 527	18 540	18 597	17 641

Source: Wilbulpolprasert et al. (2011b).

Inequity of access to dental care among insurance schemes and income groups is challenging. The high-income groups who live in urban with concentration of dental care facilities and dental health personnel tend to have more accessibility than lower-income groups(Figure 5.18). MOPH addresses this through its policy to increase the number of dental care personnel, especially dental nurses,at PHC level or in health centres.

Figure 5.18 Accessibility to dental care by income quintile, 2007



Source: National Statistical Office (2007)

5.11.3 Dental service financing

The Bureau of Dental Health, Department of Health is the key institute responsible for technical support and monitoring of the dental prevention programme. Funding for dental services from the UCS is bundled with the capitation outpatient budget to contracted hospitals. NHSO sets the dental fund to support comprehensive dental care, aiming to increase accessibility to services and to control oral health disease focusing on schoolchildren, pregnant women, dental prosthetics in older people, and improved oral health behaviour in the population. In 2012, the budget for dental care was 1080 million Baht divided between dental care services (1005 million Baht) and for oral health prevention and promotion (75 million Baht). Unlike UCS, beneficiaries in CSMBS and SHI are reimbursed on a fee-for-service basis. These differences have resulted in inequity of dental care accessibility among the three main health insurance schemes (Table 5.10).

Table 5.10 Percentage of accessibility by health insurance scheme, 2007

	Percentage	Visits/year
CSMBS	15.2	0.24
SHI	10.0	0.14
UCS	7.6	0.11

Source: NSO 2007. National Health and Welfare Survey. Nonthaburi, Ministry of Information and Communication Technology

5.11.4 Challenges

Inequity in human resources distribution and access to dental services is still challenging. In addition to dental schools in universities, Praboromarajchanok Institute for Health Workforce Development (MOPH) is also responsible for producing dental workers, especially dental nurses. According to the decade plan for health centres, 9800 dental nurses are needed to work at the health centre level. MOPH has launched a project to increase the number of dental nurses, targeting 3200 dental nurses in 2012–2013. The project is funded at 30 million Baht a year by NHSO. Additionally, there is a project to solve the shortage of oral health personnel in Southern Thailand. The students in the project would be provided scholarships of 35 900 Baht a year. One study found that the dental health budget was allocated insufficiently for oral care delivery, there were inappropriate guidelines for supporting the primary care network, and rapidly increasing demand for dental services. Preventive and promotional oral services have remained unchanged from the period prior to universal health care coverage.

5.12 Complementary and alternative medicine

5.12.1 Overview

Thais have recognized Thai traditional medicine (TTM) for its role in remedying illness and in well-being. TTM has been developed along within Thai culture and transferred from generation to generation. Replaced by contemporary medicine, TTM has changed into something to complement the efficacy of treatment and as a source of alternative ways to solve increasingly complicated health problems.

TTM is strongly supported by the Thai Government in terms of laws, finance, infrastructure development and role in the country's economy. Based on the definition of the MOPH, it is categorized separately from other types of complementary and alternative medicine (CAM). Rules

and regulations applied are different. Licence is compulsory only for TTM practitioners, while other complementary and alternative therapies are governed merely through health-care facility statutory regulations and technical requirements. Evidence on utilization of CAM at national level is scarce, while more data available on TTM.

TTM originally came from Indian's Ayurveda that developed into medicine in Buddhist monastery. Its use was first documented in scriptures dating back to 1445 (over 500 years ago). The basic principle employs holistic approaches that emphasize health by maintaining a balance of functions in the body and mind. Illness is perceived as happening subsequent to imbalance among these components (Soponsiri, 2010). TTM practice consists of a range of remedies such as massage for health, massage for treatment, herbal sauna, herbal compress, and prescribing combinations of herbs on individual patient basis.

5.12.2 Policy on TTM

TTM was first mentioned in The Fifth National Economic and Social Development Plan 1982–1986 (Government of Thailand, 1981) and has been adopted and addressed in every National Health Development Plan thereafter. The stated extent of TTM in the national plan has gradually expanded from merely promoting the use of herbal medicine to the level of ensuring the quality and accessibility of TTM in all level of public health-care facilities and community self-care. In order to achieve a sustainable health system, the plan covers the development of:(1) human resources, (2) services, (3) herbal medicine, and (4) Thai folk wisdom protection (Petraat, et al. 2010). In 1992, by combining various government institutions at that time, the Department for Development of Thai Traditional and Alternative Medicine (DTAM) was set up under the MOPH to strengthen the knowledge and broaden the use of TTM and CAM (Hempisut, 2010). Finance is allocated to the department directly from the Government and the NHSO for system and human resource development. The department works with the Health Service Support Department, which is responsible for licensing of professionals, certification of private facilities, and teaching programmes. In 1999, in an effort to promote the use of TTM, the Government passed the Protection and Promotion of Thai Traditional Medicine Wisdom Act B.E. 2542 (1999) and recently proposed the Thai Traditional Medicine Profession Act and the Health Establishment Act to the Cabinet.

5.12.3 Organization of TTM services

TTM service is easily accessed in both private and public sectors. Private facilities are more concentrated in urban areas with patients' preference of services for health or for complementary treatment such as massage, sauna and compress, which are sometimes offered along with some form of CAM. Since standards apply only to facilities that are willing to be certified, private services are diverse in terms of quality and comfort, ranging from service in small room to luxurious hotel or health spa.

Public facilities are controlled by higher-level authorities with practice guidelines developed by the DTAM. TTM is part of MOPH's health-care provision; data from the DTAM for 2009 show that TTM units were available in more than 90% of hospitals and 55% of health centres.

Public-sector TTM services are more oriented towards medication: prescribing mixtures of herbal medicine on individual basis is more common than in the private sector. There are three public hospitals that provide pure TTM, due to be scaled up to 10 hospitals in 2010. Other hospitals offer TTM services in a clinic which generally complements modern medicine. Patients accessing a TTM clinic within a hospital are mostly referred from the nurse or physician who did the initial screening. The majority of patients are beneficiaries of UCS or CSMBS. This is because treatment diagnosed by Thai traditional practitioners or referred cases from physicians in public facilities are included in the benefit packages. The NHSO reimburses its contracted units for services provided for UCS beneficiaries by fee schedule under a global budget. In order to scale up services, NHSO tripled the budget between 2010 and 2011. The increase included reimbursement for services and system development. Over the same period, the Comptroller General Department's spending for TTM was also steadily increasing (Table 5.11). The CSMBS pays hospitals based on fee-for-service, but caps the number of reimbursable massages per week for each patient.

Table 5.11 TTM budget used in two public insurance schemes, 2009–2011

Scheme	Budget (million Baht)		
	2009	2010	2011
UCS ^a	47	94	288
CSMBS ^b	260	296	352

Source: ^a Health Insurance Information Service Centre, National Health Security Office (2009, 2010, 2011). Financial; ^b Comptroller General Department, Ministry of Finance.

5.12.4 Access to services

The utilization report from the UCS (Table 5.12) in 2010 showed that massage was among the most popular services. Small health-care facilities such as sub-district health centres and community hospitals were the main providers with 51% and 44% of services provided, respectively (NHSO, 2010). Of those services provided, most were massage for muscle pain relief. However, medicated massage for rehabilitation of patients with less ability to move – for example, stroke, Cardiovascular accident (CVA) and disabled – is necessary and these patients are the target group of NHSO. TTM professional home visit is available but limited to very few areas (Srithamrongsawat, et al., 2011).

Table 5.12 Mode of TTM utilized by UCS beneficiaries, 2009 and 2010

Type of service	No. of visits		Visits per 100 UCS population	
	2009	2010	2009	2010
Massage	614 014	1 049 649	1.3	2.2
Compress	437 024	621 541	0.9	1.3
Sauna	113 353	178 827	0.2	0.4
Total	689 292	1 850 017	1.6	3.9

Source: NHSO (2011a).

5.12.3 Human resources for TTM services

TTM providers can be roughly categorized into three types: conventional TTM, applied TTM and TTM assistant. To be eligible to diagnose and provide treatment as the first two types, licence is needed. By law, conventional TTM is divided into four types according to licence: Thai medicine, Thai drugs, Thai midwifery, and Thai massage; a practitioner can be licensed for more than one type. Table 5.13 shows the numbers of different kinds of TTM and other CAM licences. The conventional TTM study can be accomplished in two ways; either in a university or directly

taught by masters in an accredited institute. Applied TTM is the new type that incorporates scientific knowledge with traditional principles. It has two major differences from the conventional TTM – practitioners are taught modern medicine for diagnostics, and can legally use certain kinds of instruments, for example in wound dressing or delivering a baby; however, treatment is to be provided in traditional ways. Licensing for Applied TTM is uniquely for graduates who have an Applied TTM degree.

Table 5.13 Number of different kinds of TTM and other CAM licences

Type	New in 2010	New in 2011	Total
Conventional TTM	2561	5159	54 197
• Medicine	778	1184	18 963
• Drug	542	2 105	26 056
• Midwifery	1045	493	7273
• Massage	196	1377	1905
Applied TTM	166	396	1222
Chinese TM	214	88	302
Occupational therapy ^a	67	66	724
Chiropractic ^a	5	0	19

Note: a Renewal is compulsory every 2 years, numbers shown include renewal licences.
 Source: Bureau of Sanatorium and the Art of Healing, Department of Health Service Support, MOPH.

Most TTM assistant jobs involve massage for health and supporting the TTM practitioner in clinic. A qualified assistant would be trained at least 330 hours in a registered school. The majority of demand is for massage for health, for which there is another type of provider called “massage therapist”. Training courses for massage therapists vary greatly in terms of course title, content and length, ranging from 60 to 800 hours per course. Some courses even offer teaching English for massage therapists to help them communicate efficiently with foreign clients.

Demand for TTM providers is increasing in both public and private sectors. In order to supply this increase, a number of full degree programmes and short courses have been launched. At first, such academic programmes were problematic because of the variation in length and quality of taught programme (Noree, 2007). School administrative and TTM professional committees also realized this problem. In 2010, more schools (13 out of 19) were recognized institutions with 4-year curriculum for a bachelor’s degree and 2-year curriculum for continuing education (Hempisut, 2010). For TTM assistants, there were 66 registered schools teaching TTM assistant and 463 registered courses

of massage for health in 2010 (Department for Development of Thai Traditional and Alternative Medicine, 2011).

5.12.4 Challenges

Government policy supports initiatives of TTM at community level, especially in remote areas. New posts are opening for TTM practitioners at sub-district level along with more financing to hire. Locals are funded by local authorities and health-care facilities to be trained as TTM assistants. However, these supports are not yet enough to ensure the sustainability of the TTM system in the future and there is still variation among services provided in different parts of the country (Srithamrongsawat, et al. 2011). Acceptance of TTM in the mainstream clinical practice within a hospital needs strong leadership of TTM professional and good support from the head of the hospital or higher administrators. There are questions whether the role of TTM is merely alternative or complementary; if it should be incorporated into modern medicine as the national policies plan to do; and how TTM be developed and respected in the mainstream of health care and society as real effective treatment.

6 Principle health reforms

Chapter summary

Thailand introduced several major health reforms in the 2000s. Almost all were initiated locally and have managed change successfully. International development partners and donors have played a very limited role in agenda setting and policy formulation. Each reform included complex policy processes and context specificity, as well as different levels of influence by various state and non-state actors in shaping them.

The legislation of an additional tobacco and alcohol excise tax earmarked to health promotion is a technocrat-driven initiative led by the permanent secretary of the Ministry of Finance in close collaboration with a few health and anti-tobacco champions. After legislation, the Thailand Health Promotion Foundation, financed by an annual outlay of 3 billion Baht (US\$ 100 million), was established to support a wide range of activities and actions at ground level in favour of positive health of the population. Evaluation of its performance was positive.

Thailand is internationally recognized for its successful implementation of universal health coverage (UHC) in 2002, with a favourable pro-poor outcome. Although the UHC agenda was politically driven, Ministry of Public Health technocrats contributed significantly to the policy formulation, systems design, monitoring and evaluation, and fine-tuning of policies. High level of government support and the extensive geographical coverage of health-care delivery systems, especially at district level, contributed to a favourable pro-poor outcomes in terms of health-care utilization, benefit incidence and financial risk protection against catastrophic health-care expenditure and medical impoverishment. The external assessment of the first decade of UHC implementation confirmed these good outcomes.

The advent of the National Health Commission Office has a long history of engagement with civil society, until the National Health Act was legislated in 2007. By law, the Office is mandated to convene an annual National Health Assembly, a platform for participatory public policy development engaging state, non-state and private sectors on a ground level for evidence-based deliberation. Several resolutions endorsed by the National Health Assemblies were endorsed by Cabinet Resolutions. The outcomes of implementation of these resolutions are mixed, some with good progress and some without, reflecting different levels of capacity and effectiveness of concerned state actors.

Contributing factors to these locally initiated reforms include a group of champions, mostly MOPH technocrats who are driven by their pro-poor ideology and rural health background, who at the same time also act as “policy entrepreneurs” and work closely with civil society organizations; when windows of opportunity open, these champions liaise with politicians, making political decisions and subsequent legislation as reflected by the case of sin tax-financed Health Promotion Fund, National Health Act and National Health Security Act.

Although the coverage extension of the Universal Coverage Scheme to the stateless people was endorsed by the cabinet resolution and annual budget appropriation, progress has been slow. Also evidence contributes significantly in policy formulation led by the Health Systems Research Institute and other partners, although academia and university have also contributed to health systems reform.

6.1 Analysis of recent reforms

Several reform movements took place in the 2000s and had major consequences on the health system. Access to essential health care is now universal, it became an entitlement for all Thais and is being extended to cover the stateless population. Prehospital care for emergency cases and emergency hospital care have been developed by the establishment of the National Institute of Emergency Medicine in 2008, details of which will not be addressed here.

Apart from the health care system, there was a movement towards health promotion by establishing the health promotion fund in 2001 supporting civil society campaigns on tobacco, alcohol, traffic accidents and other key determinants of ill health. Health in all policies and social determinants of health were addressed during the process of drafting the National Health

Act and the concept became more visible when the National Health Act was adopted in 2007 with the establishment of the National Health Commission Office. This Chapter describes five key reforms (Box 6.1).

Box 6.1 Major reforms in the 2000s

2001	Establishment of sin tax health promotion fund
2002	Establishment of universal health coverage system
2007	Enactment of the National Health Act and institutionalization of national health assembly and movements on health in all policies
2008	Establishment of emergency medical services
2010	Extension of health coverage to stateless population

Source: Synthesis by the Author

6.1.1 The advent of sin tax-financed innovative health promotion fund, 2001

Aims and background

Historically, the Ministry of Public Health (MOPH) has been the sole agency responsible for health promotion and disease prevention policy and implementation; mostly focused on clinical preventive services funded by general tax revenue through supply-side financing to MOPH health-care facilities as main implementers. There was a missing link of financing non-clinical preventive activities that address the distal determinants of ill health, such as tobacco, alcohol, hazardous environment and housing, and traffic injuries. Intersectoral actions are often required – MOPH alone is inadequate to address these increased challenges.

Policy process

In 2001, the Thai Health Promotion Foundation (ThaiHealth) was established by law as an independent public agency, managed by a governing board chaired by the prime minister. ThaiHealth is mandated to support state and non-state actors, in particular civil society, to promote well-being of the citizens by acting as funding catalyst to support programmes and actions that change social values, lifestyles and environments in ways that are conducive to health.

Content and implementation

ThaiHealth is funded by “sin-tax”, an additional 2% surcharge on tobacco and alcohol excise tax. Its budget significantly increased from 1.592

billion Baht in 2002 to 2.859 billion Baht in 2009 (US\$ 95 million). The main portfolios of ThaiHealth are broad-based civil society campaigns on tobacco, traffic accidents, alcohol, healthy lifestyle, active living and obesity, sexuality and HIV/AIDS prevention (Srithamrongsawat et al., 2010). ThaiHealth not only supports programme activities through civil society organization, it also supports evidence generation and knowledge management.

The aim of ThaiHealth over its first ten years was to create a health promotion culture across Thailand. With its emphasis on multisectorality, communities and settings, as well as major risk factor reduction programs, ThaiHealth has established a broad reach, geographically, among diverse population groups, and across the lifespan from birth to old age.

Important gains in the major risk factor areas have been achieved and the impacts have been significant in smoking, alcohol and road injury reduction. An enormous amount of activity has led to major social health outcomes in areas such as education, public broadcasting and consumer protection. ThaiHealth has also made a seminal contribution to the development of major infrastructure, such as the National Health Assembly, enabling civil society across Thailand to participate in health promotion. (Galbally et al., 2012)

Implementation challenge

After 10 years of operation, ThaiHealth was evaluated with the support of the Health System Research Institute (HSRI). Willingness to pay for ThaiHealth activities was assessed and it was found that willingness to pay for specific ThaiHealth activities, such as campaigns for physical activity, tobacco, alcohol, accidents, and health risk (food) were higher than the existing budgets. Willingness to pay for the campaign on physical activity was the highest (658 million Baht) as compared to existing budget (239 million Baht), while willingness to pay for social marketing was less than existing budget (Health Intervention and Technology Assessment Program, 2012). This result shows a very positive attitude of people towards health promotion activities. However, campaigns for health promotion have to be done on a basis of “health in all policies” and have to be involved in policy development processes. Success cannot be achieved by addressing the immediate proximal factors; more difficult distal determinants of ill-health also need to be tackled, such as active marketing of alcohol, and social environment prohibiting active physical activities.

6.1.2 Establishment of universal health coverage system in 2002

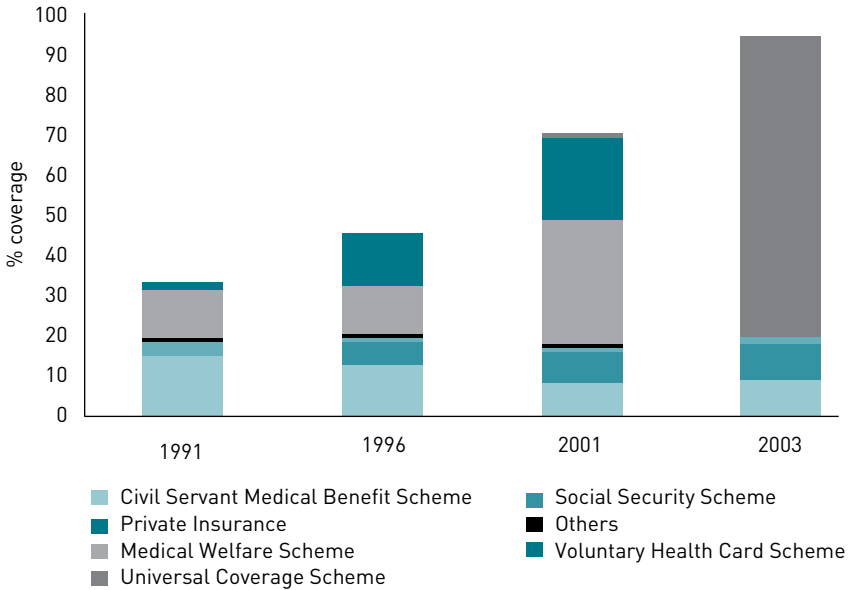
Aims and background

From 1975 to 2002, Thailand applied a piecemeal targeting approach by establishing different prepayment schemes for different populations (Tangcharoensathien et al., 2009). Health insurance coverage increased gradually from 34% of total population in 1991 to 71% in 2001 with various public health financing schemes, mainly the Medical Welfare Scheme (MWS) covering the poor, elderly, disabled, children under 12 years old and other vulnerable population groups; the Civil Servant Medical Benefit Scheme (CSMBS) and the Social Health Insurance (SHI) scheme for government employees and private-sector employees, respectively; also the informal population who were non-poor was covered by the publicly subsidized voluntary health insurance scheme (Voluntary Health Card Scheme) – see Figure 6.1 and Chapter 3 for more details.

Policy process

In the 2001 general election, Thai Rak Thai (TRT) party won a landslide victory using universal health coverage as one of its nine priority manifesto elements during the election campaign under the slogan “30 Baht treats all diseases”. The TRT leader was convinced by a group of like-minded reformists in the MOPH and a research study showing that universal coverage was “financially and programmatically feasible”. Universal coverage was considered financially feasible because, after pooling all existing resources in the MOPH budget for health-care services, the estimated funding gap (30 billion Baht in the first year) could be easily filled by the government (Evans et al., 2012).

Figure 6.1 Coverage of health insurance, 1991–2003



Source: Analysis of NSO Health and Welfare Surveys, 1991, 1996, 2001 and 2003

The coalition government led by TRT immediately launched Universal Health Coverage (UHC) in six provinces in April 2001, then extended it to another 15 provinces in June 2001, covering the whole country by April 2002. The Universal Coverage Scheme (UCS) was established by merging two existing schemes, the MWS and the Voluntary Health Card Scheme, and extended to cover the 30% uninsured population using additional budget, 30 billion Baht from the Government. As a result, the entire population was then covered by three public health insurance schemes, the Social Health Insurance (SHI) for formal (private) sector employees, the CSMBS for civil servants and their dependents, and the UCS for the rest of population.

Content and implementation

The main characteristics of the UCS were:

- a tax-financed scheme free at the point of service (the initial copayment of 30 Baht per visit or admission was terminated in November 2006 for political reasons);
- a comprehensive benefits package with a primary care focus and gatekeeping function; and
- a fixed annual budget per member with a cap on provider payment.

Financing the UCS, a hard budget in nature, started with 1202 Baht per capita in 2002 and more than doubled to 2693.5 Baht per capita in 2011 due to expansion of the benefit package, labour cost and medical products inflation. Driven by path dependence, the initial benefits package was guided by historical precedence, based on the MWS, a quite favourable package including outpatient, inpatient, medicine and other high-cost services (see Chapter 3). Subsequent inclusion or exclusion of an intervention was guided by a health technology assessment, including cost-effectiveness analysis, budget impact assessment, equity and ethical considerations, and supply-side capacity to scale up. Major inclusions in the benefits package with high budget impact were antiretroviral treatment for HIV/AIDS patients in 2006 and renal replacement therapy for patients with chronic renal failure in 2008 – all free at point of service.

Achievements of the UCS during the first decade included: improved access to essential health services for Thai citizens, especially for the poor; decreased catastrophic expenditures and household impoverishment; and increased satisfaction of UCS beneficiaries and health-care providers (Evans et al., 2012).

Implementation challenge

Thailand still has three main public health financing schemes covering the entire population without a national policy to harmonize them. Beneficiaries of the CSMBS get the most expensive benefit package with questionable health outcomes. For example, the excessive use of medicines (including nonessential items) for hypertension may not result in good treatment outcome (see Box 6.2 on the use of glucosamine in CSMBS). Clinical practice guidelines, including medicines for treatment of some diseases such as cancer, are not the same for all schemes. There is also a duplication of investment in management infrastructures such as information and communications technology (ICT) systems. Harmonization is needed to ensure equity, efficiency and quality of care.

Box 6.2 The use of glucosamine in CSMBS

In December 2010, the Comptroller General Department (CGD) prohibited reimbursement of four nonessential drugs, shown to be cost-ineffective for the treatment of osteoarthritis (CGD in litt., 2010). Glucosamine alone shared 43% and 45% of total expenditure on drugs of the same class in 2009 and 2010, respectively (HISRO, 2011). Two months after the imposition of the negative list, consumption dropped, interest groups such as orthopaedic surgeons and government pensioners voiced their opposition through mass media and pressured the CGD to withdraw this enforcement.

The glucosamine debate continued, without clear decision by the Government by May 2011. There is ample evidence that pharmaceutical industries were behind the movement against this decision (Good health with PReMA, 2011). Debates were hot in a number of newspapers. For example:

- The Royal College of Orthopaedic Surgeons of Thailand said there are clinical indications of the use of glucosamine [The RCOST Newsletter 2011; 16(2)]
- The Government said, in the light of concerns raised by the retirees who are members of CSMBS, it may reconsider the bar from reimbursement [Naew Nar 10 Mar 2011]
- The Osteoporosis Foundation did not agree with the non-reimbursement of glucosamine for CSMBS beneficiaries [Thai Post 11 April 2011].

The debates on the pros and cons of glucosamine continue to date, while the glucosamine black list status is still enforced.

Source: Jongudomsuket et al. (2012).

6.1.3 Advent of National Health Act 2007 in support of “health in all policies”

Aims and background

In addition to movements to reform the health system to guarantee access to essential health services for all (UHC), Thailand has also started to reform the health system in a broader approach since the Declaration of Alma-Ata in 1978. The broader meaning of health as addressed in the Constitution of the World Health Organization (WHO, 1948) and the primary health care (PHC) concept – focusing on health equity, community participation, solidarity and intersectoral action – gradually changed the paradigm of health and health determinants. The newly advocated Social Determinants of Health (SDH) is another policy attempting to reduce health inequity with some key commonalities with

the PHC concept (Rasanathan, et al., 2010) and supports health system reform movements in Thailand. This paradigm shift also occurred as a result of the changes of socioeconomic and political contexts of the country, such as the following (Phoolcharoen, 2001).

- The political and social reforms during the 1990s with the support of civil society movements. These civil society groups played a decisive role in shaping the reform agenda by the principles of democracy, participation and respect for basic human rights. They spearheaded the search for a new social paradigm based on far-reaching political democratization. The promulgation of the Constitution in 1997, which could be considered as a result of this political reform, provided more opportunities for further progress in restructuring the relationships between the state and civil society.
- Imbalanced economic development resulting in a number of social pathologies (e.g., alcohol and substance abuse) before the 1997 Asian economic crisis, Thailand had achieved high economic growth and rapid poverty reduction, but at the cost of excessive exploitation of natural resources and environmental degradation, disruption of social and family structures and relationships, as well as erosion of social and cultural capital and disparities among marginalized populations.

The redefined broader meaning of health as “a state of well-being that is physical, mental, social and spiritual”(WHO, 1948 and EB 73/15, 2000), and the definition of the health system as “sum total of all the organizations, institutions and resources whose primary purpose is to improve health”(WHO, 2005) were two fundamental concepts leading the health system reform. These two concepts correspond with PHC and SDH concepts and shift the focus of reform from the health system alone to all systems affecting health and incorporating health in all policies. However, challenges remain in translating these concepts into real actions and policy coherence across government and private sectors.

Policy process

Active movements to reform the health system and support health in all policies started in 2000 with the establishment of the National Health System Reform Office (NHSRO) as a secretariat office of the National Health System Reform Committee (NHSRC), chaired by the prime minister. The official mandate of NHSRO was not only to draft the National Health Act within 3 years, but also to support knowledge-based social movements and health system reform (National Health

Commission Office, 2008c). The latter became the prominent aspect, since it creates social capital to ensure the long-term sustainability of health system reform. The NHSRO used a strategy called “The triangle that moves the mountain”, comprising creation of relevant knowledge, social movement and political involvement (Rasanathan et al.,2012). These three components are complementary. The first year started with building knowledge and creating infrastructure to mobilize civil society. By the end of the first year, various forums had been organized to initiate the dialogue on health problems among stakeholders. In the second year, an initial framework for the health system was proposed as a basis for deliberation. Hundreds of forums and workshops at various levels were organized to scrutinize the framework. By the end of the second year, a draft of the national health bill was introduced. Following hundreds of local, provincial and regional forums, a national health assembly was organized to finalize the draft of the bill (National Health Commission Office, 2008c). The legislative process to enact the national health bill took longer than expected, but it was finally considered and approved by Parliament in 2007.

Content and implementation

The National Health Act 2007 furnishes opportunities and three key mechanisms to support movements on health in all policies.

- **Health assembly comprises three levels – local, national and issue-specific health assemblies.** A health assembly is a meeting process with systematic organization and public participation in which all parties exchange their knowledge and learn from each other leading to consensus building. The first health assembly was organized to finalize the draft health bill and there were several more health assemblies before the enactment of the National Health Act. These cumulative experiences became a learning platform for all concerned parties, ensuring evidence-based deliberations and participatory process in later public health policy developments (National Health Commission Office, 2008a). Through this new policy process, the meaning of health became holistic –considering all partners’ views so that health will be taken into consideration by other sectoral policies which may have implications on the health of the population. A few contentious issues were noted. A National Health Assembly (NHA) resolution on total ban of chrysotile asbestos was adopted, and endorsed by the cabinet resolution, but implementation was delayed. One manufacturing industry contests the resolutions claiming its safety and lower cost. Possible policy capture was criticized by civil society organizations.

The National Health Act 2007 institutionalized the health assembly mechanism and also created a link between the health assembly and conventional policy process. Four official NHAs were convened after the enactment of the National Health Act, the first in 2008. To date, the NHA has approved 40 resolutions, some of which have been submitted to the cabinet for official approval and implementation.

- **Health impact assessment (HIA):** The National Health Act 2007 legalizes the HIA as a process to be used by members of society for the assessment of the potential future and the current health impact posed to certain population groups by certain policies or activities either by the public or private agencies (National Health Commission Office, 2007). HIA in Thailand is implemented under the healthy public policy concept and a key component of this approach is the flexibility of HIA to be applied at all levels prior to a decision on any public or private policy that may impact the health of the population. Demand for HIA is increasing and there are many case studies with successful results (National Health Commission Office, 2008b). For example, cyanide contamination in the food chain, soil and water around the gold mine in Wangsaphung district of Leoi province is a contribution of Environment and Health Impact Assessment (Muenhor, 2013).
- **Health statute:** The National Health Act mandates that in order for the health system of the country to have a clear, correct and forceful direction, covering all dimensions of health and involving active participation of people from all sectors, it is necessary to have a statute on the health system that expresses the will and commitment of society and that serves as a framework and guidelines for all sectors concerned in formulating national health policies, strategies and action plans. The first Statute on National Health System B.E. 2552 (2009) was developed and approved by the cabinet in 2009. By law, this statute has to be reviewed and renewed every five years.

Implementation challenge

Although policy formulation via health assembly has involved all stakeholders in the process, the resulting policy has not been accepted by all, especially where the government agency officially responsible for that policy issue is not the key actor and where there are many other competing policy objectives among the stakeholders. The policy does not always lead to action even when there is cabinet endorsement. Involving government agencies in public policy processes should be a strategic interaction so that they become the owners of the policy issues and are committed to take actions according to the policy (Lapyinget al., 2013).

6.1.4 Expansion of health coverage to persons awaiting proof of Thai nationality

Aims and background

With UCS implementation in 2002, registration to UCS is required. The UCS covers all Thai citizens including Thai nationals and persons awaiting proof of Thai nationality (PWTN). (PWTN hold a citizen card with 13-digit identity number issued by the Government, but in different category from the Thai nationals). The UCS registration allowed PWTN to access UCS benefits similar to Thai citizens. Later the PWTN's entitlement was terminated as a result of legal interpretation of the National Health Security Act of 2002 that the UCS benefit covers only Thai nationals.

PWTN, estimated at 0.45 million in 2010, are mostly marginalized people – hill-tribe minorities living in the northern mountainous provinces along the national borders, those who immigrated to the country long ago, or those born in Thai territory but failed to obtain legal birth registration and hence Thai national identity number and full entitlement for UCS. They are not migrant workers who are registered, employed and covered through health insurance financed by their employers and / or managed by the MOPH. These marginalized people have limited access to health services or have to pay out of pocket, waived by MOPH health-care facilities on a humanitarian basis. This results in enormous financial burden on public health-care facilities particularly along the national borders. Historically, the Government has refused to finance health services for these people.

Policy process

Several stakeholders pushed for an expansion of UCS coverage to this group, in particular the Rural Doctor Society and other civil society organizations. Under the Democrat Party-led coalition government in 2010, the MOPH Bureau of Policy and Strategy and NHSO jointly proposed the expansion to the minister of public health for cabinet approval. Finally in April 2010, a Cabinet Resolution endorsed the proposal and budget, with the application of capitation rate similar to Thai nationals (2067 Baht/person per year). To avoid legal interpretation of the 2002 National Health Security Act opposing the PWTN, when approving the budget, the cabinet mandated the MOPH to manage the scheme, instead of NHSO which manages the UCS.

Content and implementation

Health coverage for the PWTN is managed by the MOPH through an annual budget approved on the basis of the number of PWTN registered with the Bureau of Registration Administration (BORA), Ministry of Interior. PWTN receive a similar benefit package to Thai nationals, but they cannot register with health-care provider networks outside their domicile provinces; services are covered within their network except for referral. The programme is administered by a board with representation from the PWTN. In the early phase, because of lack of adequate public relations and awareness creation, only a small proportion of PWTN exercised their entitlement to health care, though utilization rate increased in subsequent years. Hospitals where large numbers of PWTN registered are satisfied as services provided to them are fully financed, while PWTN are satisfied with the programme, as they were previously unable to access the health service due to financial barriers.

Implementation challenge

In principle, the number of PWTN should be reduced gradually as they acquire Thai nationality, and hence eligibility for UCS. However, the long and complex processes of verification of nationality hampers progress. When the size of PWTN reduces in the future, this interim programme should be financially viable. Accelerating the process of nationality verification is recommended.

6.2 Future developments

Despite political conflicts between the two major parties, Democrat and Peur Thai, since 2002, Thailand has taken a number of bold steps in health reform with good outcomes. However, there are a number of challenges requiring further policy actions.

6.2.1 Harmonization of the three public health insurance schemes

After achieving universal health coverage in 2002, where the entire population were covered by one of the three public health insurance schemes namely SHI, CSMBS and the UCS, inequity across schemes was a policy concern. Health inequity is evident in the benefit package and financing.

While the CSMBS and UCS are general tax-financed non-contributory schemes, the SHI is financed by a tripartite payroll tax-financed scheme, 1.5% of payroll from each of employee, employer and government. The

criticism is that SHI members are double paying via their contributions and other direct/indirect tax. Meanwhile, CSMBS spends approximately 12 000 Baht per capita, which is 4–5 times higher than expenditures per capita of SHI and UCS (details in Chapter 3). Members covered by CSMBS seem to have generous health benefits, since they are free to use outpatient services from public health-care facilities without registration requirement. The beneficiaries of SHI and UCS have similar benefit package, though UCS seem to be slight better (P Pokpermdée, unpublished paper, 2012).

In November 2009, the National Health Commission Office (NHCO) and the HSRI organized a brainstorming session to explore possible solutions for harmonizing the three public health insurance schemes. It was agreed to set up a national mechanism to handle this problem (Srithamrongsawat & Thammatacharee, 2009). The NHCO, therefore, submitted a proposal to the National Health Committee (NHC), chaired by Prime Minister Abhisit of the Democrat Party, to establish a national mechanism called the National Health Financing Development Committee (NHFDC). The NHC approved this proposal in April 2010 and the NHFDC and its secretariat office, the National Health Financing Development Office (NHFDO), were established in July 2010 (Office of Prime Minister, 2010). The NHFCO organized processes with participation of all stakeholders to develop strategies of harmonization (NHFDO, 2012). However, when there was a change of government in July 2011, the government led by Peur Thai reviewed and ruled that NHFDC duplicates other existing mechanisms. Consequently, the NHFDC and the NHFDO were terminated in April 2012.

In recognition of the need for harmonization, in April 2012, the Peur Thai-led government announced harmonization across three public health insurance schemes, implementing it first with emergency services by ensuring all patients needing accident and emergency medical services (EMS) have access to emergency services at any public or private health-care facility nearby the event. The NHSO was assigned by the government to manage EMS payment on behalf of all three insurance schemes in the role of clearing house. The harmonizing of emergency services was successful as there was adequate access to emergency services (ASTV Manager Online, 2012). The government plans to extend this approach to harmonize treatments for cancer patients, renal replacement therapy for patients with chronic renal failure, and antiretroviral therapy for HIV/AIDS patients.

6.2.2 Cost containment of drug expenditure in CSMBS

Despite a comprehensive benefit package offered to the whole population, Thailand's health-care expenditure, 4.5% of GDP in 2012 (Thai NHA Working Group, 2012), was relatively low compared with other middle-income countries (average 4.4% of GDP in 2009; WHO, 2012d). However, the proportion of drug expenditure as compared to the total health expenditure (THE) is very high, 34% of THE in 2010 (Ketsomboon, et al., 2011), while OECD countries spent only 17.5% of THE in 2003. However, careful interpretation is required, as expenditure on outpatient and inpatient care include medicines; there is a need to verify if the 17.5% of THE is only for self-prescribed medicines (Colombo & Morgan, 2006). Among the three public health insurance schemes, the CSMBS has a problem of cost containment since it is the only scheme which still pays health-care providers on a retrospective fee-for-service basis for outpatient care. The CSMBS adopted diagnosis-related group (DRG) for paying inpatient care in 2007 and has controlled cost increases at less than 5% a year. The cost of ambulatory care became higher than the cost of inpatient care in 2003 and the average increase from 2000 to 2010 was 21% per year. Some 83% of ambulatory care cost is from drugs, especially nonessential drugs (NED) and brand-name medicines. This is the result of supplier-induced demand and there are direct and indirect conflicts of interests between prescribers and pharmaceutical companies.

The Comptroller General Department of the Ministry of Finance, which is responsible for implementing the CSMBS, realized the problems and introduced drug cost-containment measures. These include exclusion of certain NED from reimbursement¹, prior authorization for the use of certain expensive drugs, and generic prescription. In 2012, Cabinet approved measures to contain cost of drugs in all public health insurance schemes, with some measures based on CSMBS's experiences. These measures include (MOPH, 2012):

- creation of a national mechanism to negotiate prices of high-cost medicines;
- stricter control of the reimbursement of NED and "brand name" drugs;
- advocating the use of generic drugs and essential drugs (ED);

1 Normally the benefit package of the CSMBS covers only medicines on the essential drug list (ED). Beneficiaries of the CSMBS can obtain NED only with the approval of three physicians.

- development of practice guidelines for diseases needing high-cost drugs; and
- development of a central financial audit system.

It is expected that all these measures would save at least 5 billion Baht in the next fiscal year if they are effectively implemented (HISRO, 2012a).

7 Assessment of the health system

Chapter summary

The Thai health system is assessed against the World Health Organization (WHO) proposed ultimate goals of (1) financial risk protection, (2) responsiveness, (3) health outcomes, and (4) efficiency. Achievement of these objectives is measured at an overall level and distribution across socioeconomic stratification (where data allowed), using the time-series data that cover periods before and after the universal coverage reform around the turn of the century.

Financing for health care, dominated by general tax revenue, is progressive with respect to population incomes. Direct payment by households has consistently declined while the Government significantly increased spending from tax revenues on public insurance schemes, especially after the Universal Coverage Scheme (UCS) for the majority of the population in 2002. Achievement in financial risk protection is evident by a noticeable reduction in the number of non-poor households being impoverished by health payment.

Use of the UCS entitlement for health services has gradually increased. Net public budget subsidy to outpatient and inpatient services for the poorest UCS members was relatively higher than for the richest members. This pro-poor subsidy was driven by service utilization disproportionately concentrated among the economically worse-off.

Thailand has performed better in terms of maternal and child health than other low- and middle-income countries. Child immunization has been scaled up rapidly since the national expanded programme for immunization in the 1980s, and diphtheria, tetanus and pertussis (DTP3) coverage is higher than in the high-income countries of Western Europe and Asia-Pacific. Conversely, Thailand is facing issues related to adult population health, where adult female and male mortalities are not lower than its neighbouring countries, and are higher than in countries in Central America. Mortality amenable to health care and incidence of preventable solid tumours, such as breast and cervical cancers, was not

adequately abated during the time of economic development. In addition, hospital admissions with conditions that could be managed by ambulatory care have been increasing.

Harmonization of the three public insurance schemes has shown slow progress due to lack of political will and resistance from the CSMBS members and hospitals. The National Health Security Act in 2002 for the UCS set a better governance structure where all relevant stakeholders, especially civil society representatives, fully engage in the governing board. By comparison, the Social Security Board of the Social Security Scheme is equally represented by employers, employees and the government. The CSMBS can learn from these two schemes on how to improve its governance structure.

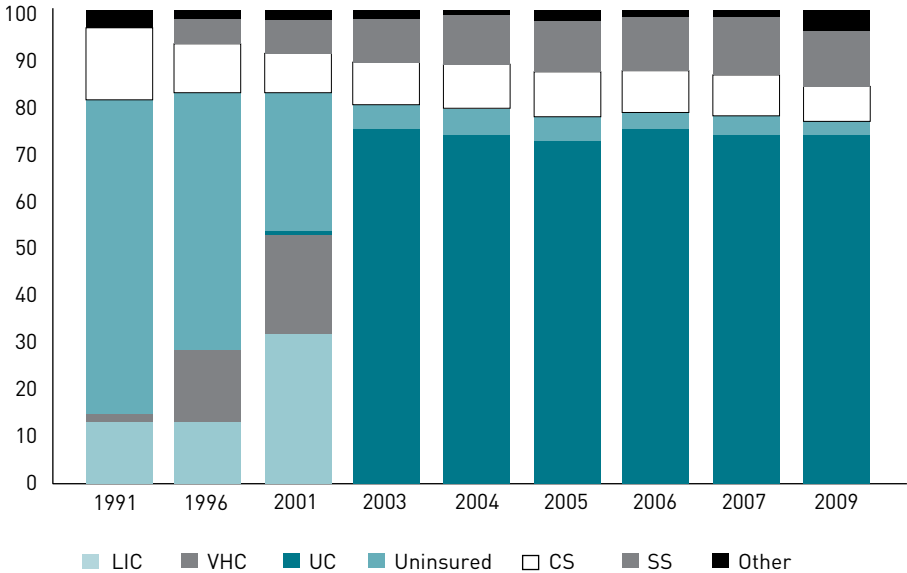
7.1 Objectives of the health system

A well-performing health system should achieve at least three goals: (1) financial risk protection, (2) responsiveness, and (3) improved health (WHO, 2000). In the 2000 World Health Report (WHR), the first objective was framed to measure whether people with different socioeconomic status made a fair contribution to health, namely the rich pay more than the poor. The second objective addressed responsiveness to people's non-medical expectations. The third objective was framed to assess population health. Both responsiveness and health are measured in terms of an overall level and distribution. Even though the WHR has been criticized on its possible misranking of some WHO Member States against the goals and controversy in measuring equality versus equity or fairness (Navarro, 2000; Almeida et al., 2001; Braveman, Starfield & Geiger, 2001; Williams, 2001), it was a landmark paper proposing new concepts and measurements of health systems. Additionally, the WHR addressed stewardship as one of the main functions of a health system.

Seven years later, the World Health Organization (WHO) laid out the comprehensive health system framework linking inputs and outcomes (WHO, 2007). The new framework defined the health improvement goal specifically in both level and equity dimensions. It also included improved efficiency as an additional fourth goal. It laid out the six system building blocks, of which governance and information technology are classified as cross-cutting issues.

This chapter gives an assessment of the health system in Thailand against the three ultimate goals plus system efficiency and transparency dimensions. The analysis is mostly based on time-series data, covering periods around the turn of the century, when Thailand achieved universal health coverage (UHC) for the whole population in 2002 (Figure 7.1). The universal coverage reform is considered the second largest health reform following the 1970s geographic expansion of district-level health infrastructure and mandatory government service by all new medical, dental, pharmacy and nursing graduates in rural health services.

Figure 7.1 Population coverage by different health insurance schemes and the remaining uninsured, 1991–2009



LIC: Low-Income Card (medical welfare) scheme; VHC: Voluntary Health Card scheme; UC: Universal Coverage Scheme; CS: Civil Servant Medical Benefit Scheme; SS: Social Health Insurance scheme. Source: Analysis of Health and Welfare Survey (HWS).

Over the four decades 1970–2010, the stated objectives of the health systems were in favour of health equity. Rhetorical statements are not as important as what has been implemented with good outcomes. Thailand has invested in rural primary health care (PHC) infrastructure, making PHC functional by increasing the health-care workforce and ensuring it serve the rural communities, and by expanding financial risk protection to facilitate financial access to care by all citizens – starting with the poor, expanding to public- and private-sector employees, and finally to those engaged in the informal sector – until Thailand reached UHC in 2002 (Patcharanarumol et al.,2011).

Well before ratification of Framework Convention on Tobacco Control in June 2003, two major legislations were adopted in Thailand: Tobacco Control Act 1992 and Health Protection of Non-smokers Act 1992. Adequate law enforcement and intersectoral actions are concrete examples of commitment to the health of the population. Thailand's establishment of the sin tax-financed Thai Health Promotion Foundation to support active health promotion activities puts it among the few countries in the world to have such a health innovation (Tangcharoensathien et al., 2008).

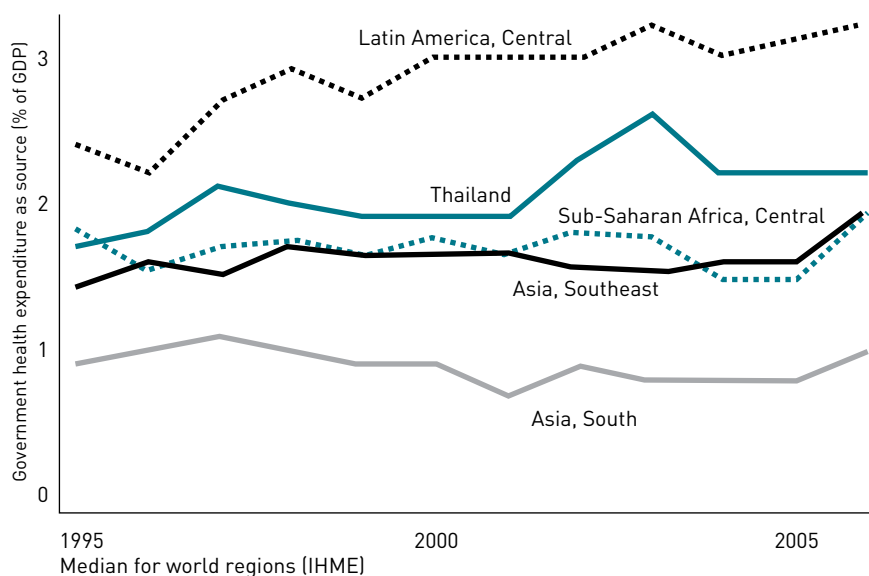
7.2 Financial protection and equity in financing

7.2.1 Financial protection

A macro-view of health financing

Health care in Thailand has been financed from public sources, around 2% of gross domestic product (GDP) over the decade 1990–2000 (Figure 7.2). The Government Health Expenditure (GHE) share of GDP increased to the peak of 2.6% in 2003, a year after the UHC, higher than the median GHE-to-GDP ratios for countries in South-East Asia, Central Africa and South Asia, though lower than the average for Central Latin America.

Figure 7.2 Public financing of health as a ratio of GDP, Thailand and selected regions, 1995–2006



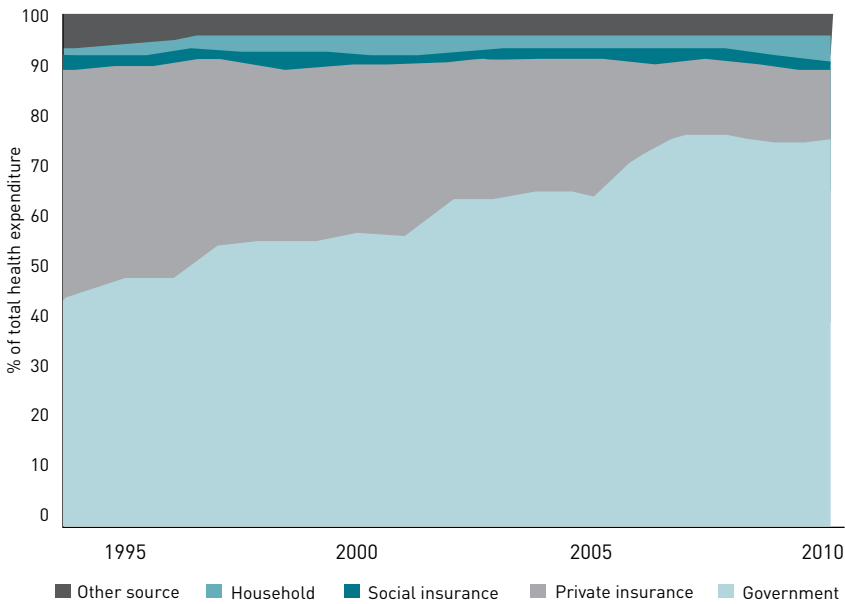
Note: Data for regions are median per region.

Source: IHME (2010b).

Private payment for health used to be the large share of total health expenditure (THE) before the UHC reform, mostly through household direct payment. Social health insurance, voluntary private insurance and others cover smaller share of THE.

In 1994, some 45% of THE was paid by households, and the government had a similar portion (Figure 7.3). The direct health payment fell gradually, to approximately 35% in the period just before UHC implementation, then substantially dropped to less than 20% after the 30 Baht copay requirement was fully abandoned in 2006. It further reduced to less than 15% in 2010, lower than the OECD average of 17.9% in 2010 (OECD, 2010).

Figure 7.3 Share of total health expenditure by private and public financing, 1994–2010

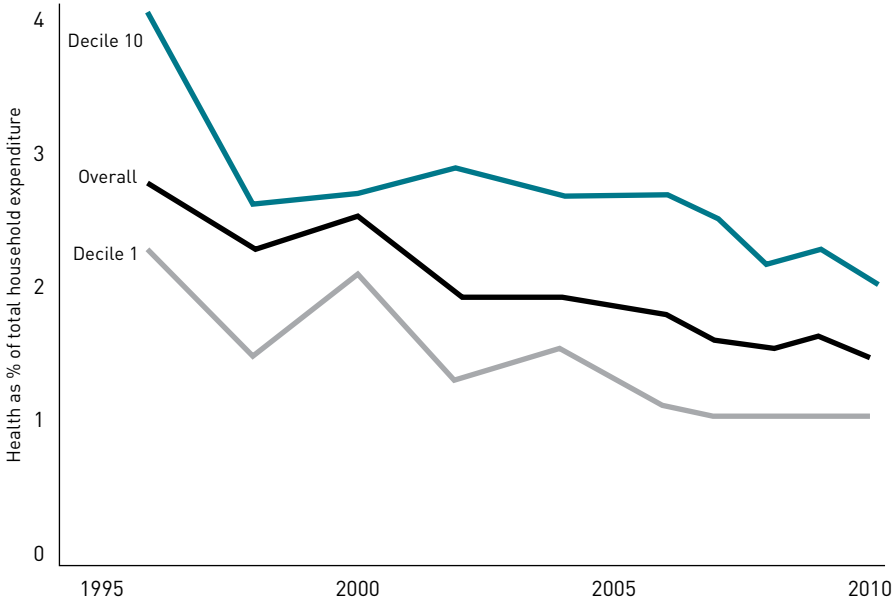


Source: IHPP (2012).

Household direct payment on health

Based on microdata of nationally representative household surveys – the Socioeconomic Survey (SES) – average household spending on health care before UHC achievement was above 2% of total household consumption expenditure (Figure 7.4). This direct health payment gradually declined during the post-UHC period, reaching 1.4% in 2010. Reduction in the proportional spending on health was found in both the poorest (expenditure decile 1) and richest (decile 10) subgroups.

Figure 7.4 Direct payment for health as percentage of total household expenditure, overall and by richest and poorest expenditure deciles, 1996–2010



Notes: Decile 1 = poorest; decile 10 = richest.
 Source: Analysis of NSO Socioeconomic Survey (SES).

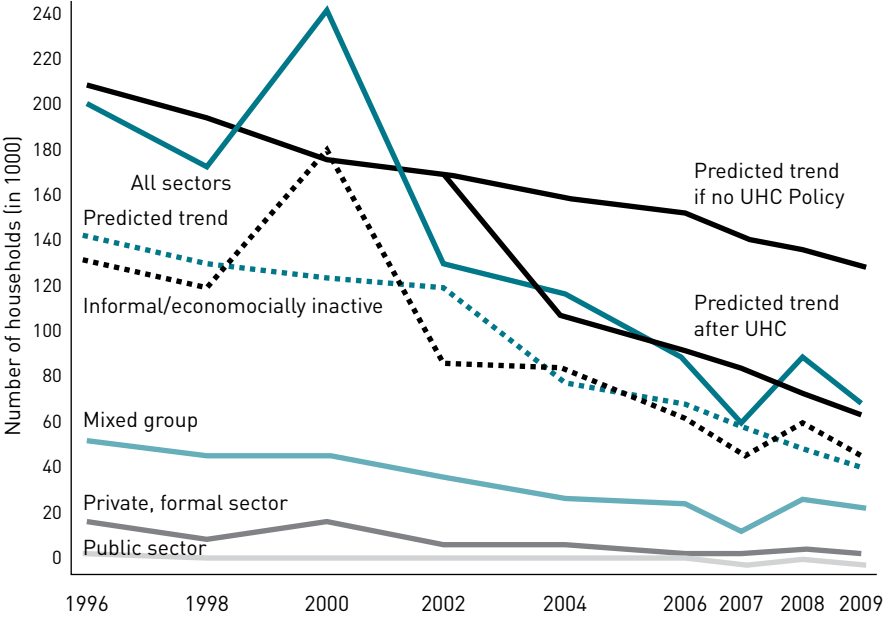
Impact of reforms/initiatives to strengthen financial protection

The incidence of catastrophic health spending, 3–4% of total households during the first decade of UHC achievement, is a result of using hospitalization service in private hospitals outside their entitlement in large public hospitals without proper referral (Limwattananon, Tangcharoensathien & Prakongsai, 2007). In addition, provinces with a large proportion of informal-sector workers or household members who are economically inactive tended to have a greater degree of health impoverishment (Limwattananon, Tangcharoensathien & Prakongsai, 2011).

There was a marked drop in the number of households impoverished by health payment after the achievement of UHC in 2002 (Figure 7.5). Households with all adult members employed in formal private and public sectors are less likely to be pushed into poverty due to health payment since they are well covered by compulsory social health insurance and the Civil Servant Medical Benefit Scheme (CSMBS), respectively. The impact of health insurance on preventing poverty was largely driven by coverage of the informal sector and the economically inactive households,

whose members before 2002 were uninsured. These households became entitled to the newly established Universal Coverage Scheme (UCS). The grey dash trend line in Figure 7.5 represents a counterfactual scenario of no UHC policy based on a segmented regression analysis recommended by Lagarde (2012).

Figure 7.5 Reduction in health impoverished households in various employment sectors before and after UHC achievement, 1996–2009



Note: The upper black solid trend line represents a counterfactual scenario of no UHC policy based on a segmented regression analysis recommended by Lagarde (2012).

Source: Limwattananon, Tangcharoensathien & Prakongsai (2012).

7.2.2 Equity in financing

Progressivity of health financing

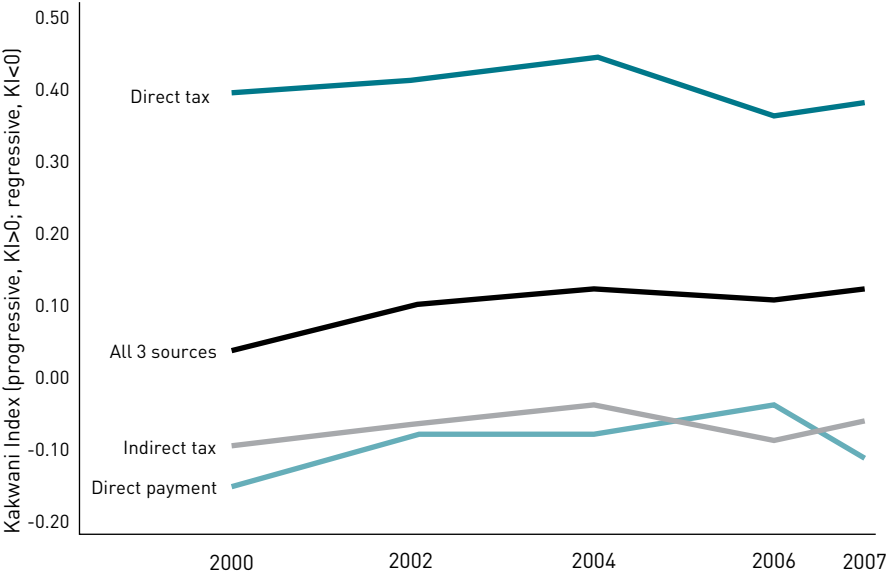
The rich in Thailand contribute to health financing disproportionately more than the poor (Prakongsai, Limwattananon & Tangcharoensathien, 2009). During 2002–2006, the concentration index (CI)² for direct and indirect taxes was 0.769–0.822 and 0.551–0.596, respectively – indirect tax is less progressive than direct tax. Contribution to SHI and voluntary private insurance premium were less concentrated among the rich (CI = 0.449–0.497 and 0.378–0.422, respectively), thus less progressive.

2 The CI value ranges from -1 to +1, the closer to +1, the more progressive, and closer to -1, the less progressive.

The CI for direct health payment by households over the same period was 0.463–0.488, the least progressive among all sources.

Financing health care has been progressive since 2000, one year before reaching UHC, meaning the rich pay a higher proportion of their income to health financing. Of the three major sources of health financing, the direct tax payment is most progressive with respect to the income (Kakwani Index, KI, approximately 0.4) i.e. health financing offsets the inequality in income as measured by Gini index, whereas the indirect tax and direct payment are relatively regressive (KI < 0) (Figure 7.6). Because of the major share of direct general tax and the dominant role of General Government Revenue (GGR) in all financing sources, the overall health financing is progressive relative to the income of household members.

Figure 7.6 Progressivity of major sources of health financing as measured by Kakwani Index, 2000–2007, reflecting the relative contributions by three sources of health financing



Note: This graph excludes SHI payment and private insurance premium.

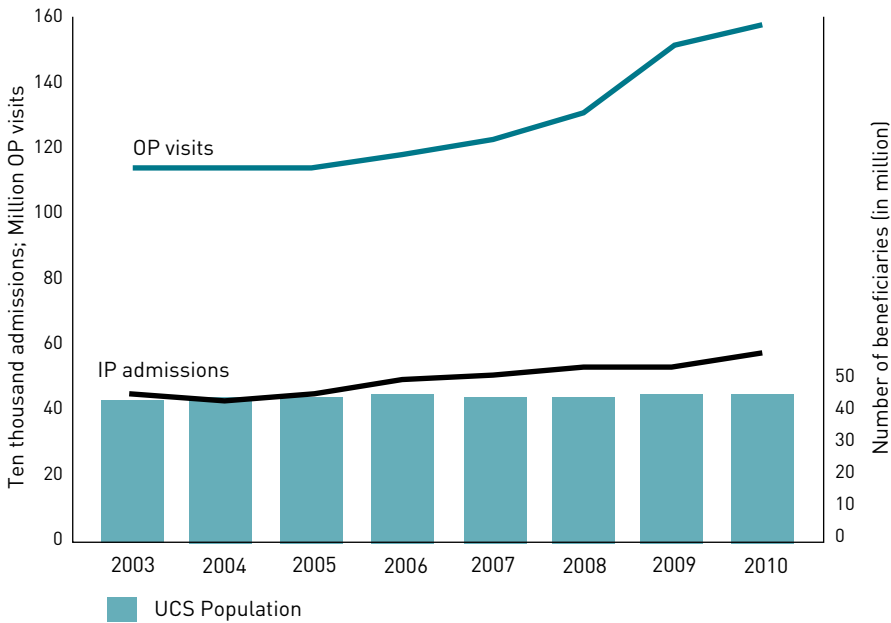
Source: Analysis of SES, NHA, and Ministry of Finance’s Government revenue data.

7.3 User experience and equity of access

7.3.1 Increased access to health services

Utilization of curative services as reported by the National Health Security Office (NHSO), which manages the UCS, increased after the UHC reform. The total annual number of outpatient visits by UCS members increased from 111.9 million in 2003 to 153.4 million in 2010 (Figure 7.7). Furthermore, the total annual inpatient admissions increased from 4.3 million to 5.6 million, whereas the total number of the UCS members increased only slightly from 46.0 million to 47.7 million over the same period, reflecting better access and increased per-capita utilization rate. Outpatient use rate experienced much faster growth than admissions.

Figure 7.7 Total numbers of outpatient visits and inpatient admissions against number of UCS members, 2003–2010



Source: Analysis of NHSO administrative reports.

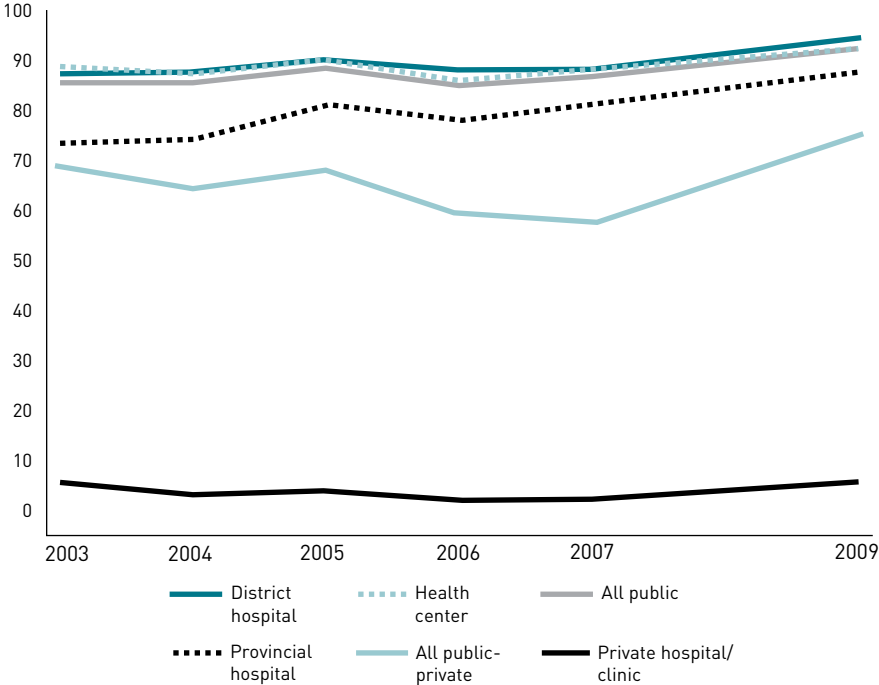
7.3.2 User experience

Uptake of health insurance while taking health services

Data from national household surveys reveal that for all public and private facility types, approximately 71% of UCS patients exercised their insurance entitlement when using outpatient services in 2003

(Figure 7.8A). The UCS uptake rate for public hospitals and facilities steadily increased from 88% in 2003–2004 to 95% in 2009. Use of the UCS entitlement for outpatient visits at district hospitals and health centres was more common than for provincial hospitals.

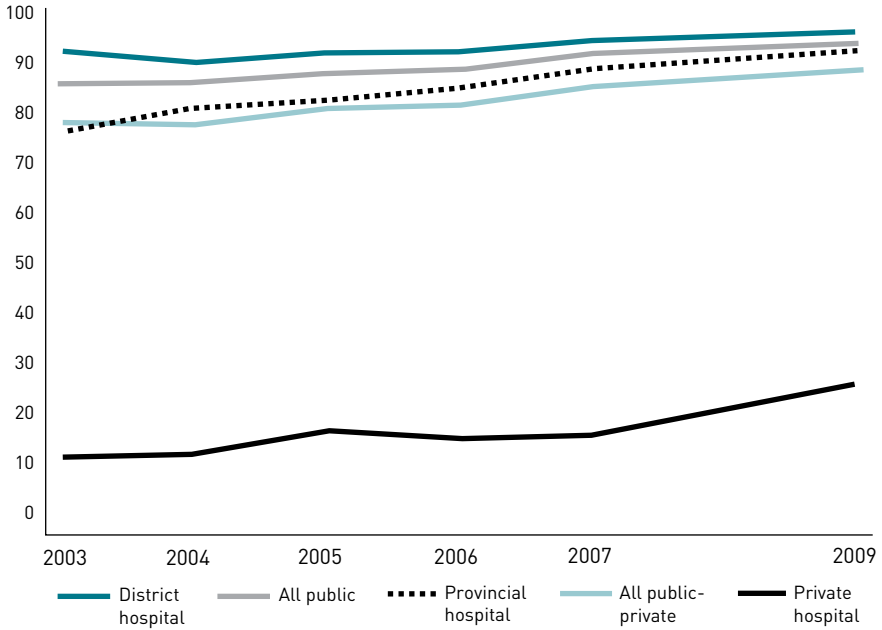
Figure 7.8A Uptake of UCS entitlement when using outpatient services, percentage of UCS members using outpatient services at different levels of service, 2003–2009



Source: Cheawchanwattana & Limwattananon (2012) (based on HWS).

Upon admission to hospital, 80% of UCS patients used their UCS entitlement in 2003 (Figure 7.8B). The UCS uptake for inpatient services in public hospitals was much higher than in private hospitals for all years. There was a steadily increasing trend for all hospital types, reaching 90% in 2009 and for public hospitals 96% more recently.

Figure 7.8B Uptake of UCS entitlement when using inpatient services, percentage of UCS members using inpatient services at different levels of service, 2003–2009

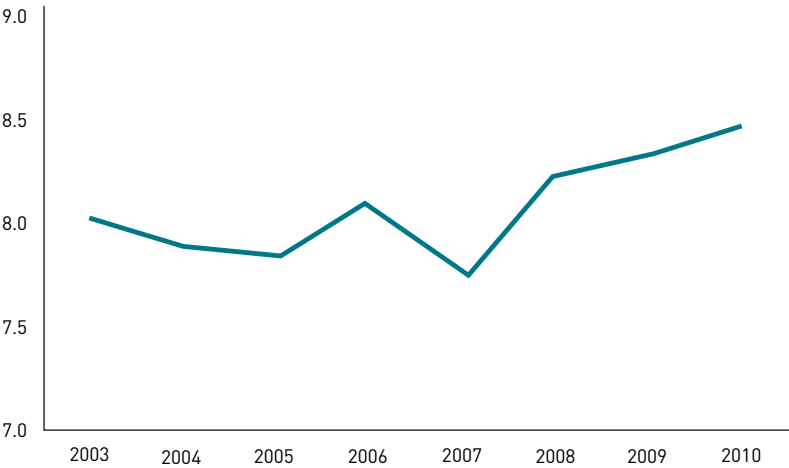


Source: Cheawchanwattana & Limwattananon (2012) (based on HWS).

Satisfaction with the UCS

Figure 7.9 illustrates an average score (with a narrow 95% confidence intervals) of the overall satisfaction with UCS on the 1–10 Likert scale, as rated by UCS members over the period 2003–2010, conducted by an independent poll survey agency; there was an increasing time trend in the overall satisfaction score from an average of 7.8–8.1 in 2003–2006 (except for a temporary drop to 7.7 in 2007) to 8.2–8.5 in 2008–2010. It should be noted that a similar poll also reported increasing trend of satisfaction among health-care providers providing services to UCS (data not shown).

Figure 7.9 Overall rating of satisfaction with UCS (in 1–10 Likert scale, mean and 95% confidence intervals), 2003–2010



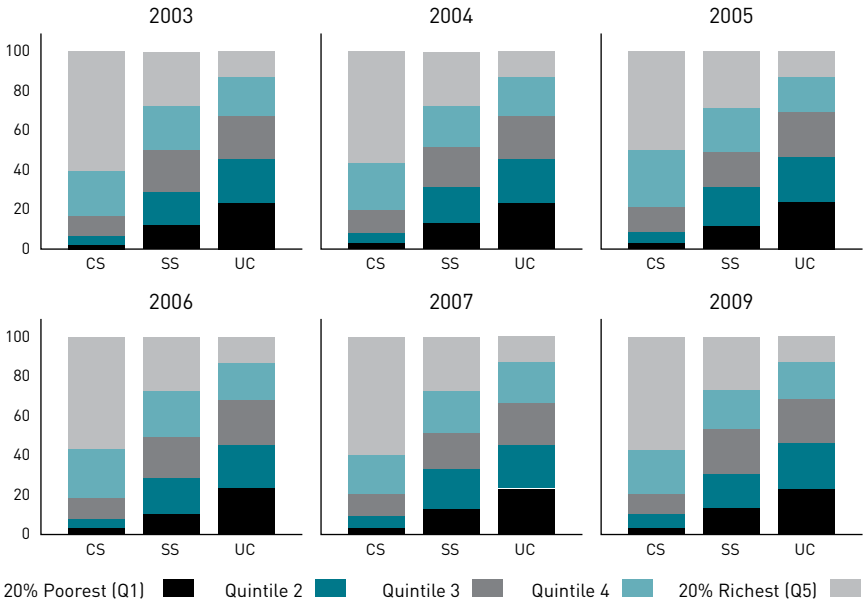
Source: Cheawchanwattana & Limwattananon (2012) (based on ABAC Polls).

7.3.3 Equity of access to health care

Utilization and benefit incidence across socioeconomic groups

Equity in access to health care in this report focuses on the UCS members, who constitute 70% of the Thai population and who mostly live in relatively lower socioeconomic households as compared with members of the other two public health insurance schemes (Figure 7.10). During 2003–2009, about 23–24% of the UCS members were in the national 20% poorest group (quintile 1, Q1) based on household asset index, whereas the richest national quintile (Q5) accounted for only 12–13% of the UCS population (Limwattananon et al., 2012). The profile of economic status did not change over the 6 years.

Figure 7.10 Distribution of health insurance members according to national quintiles of household asset index, 2003–2009

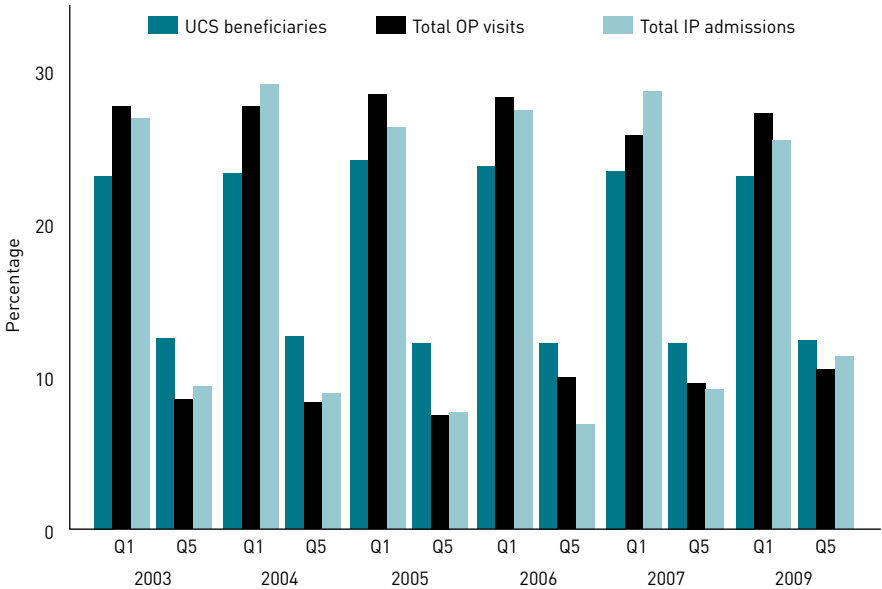


CS: Civil Servant Medical Benefit Scheme; SS: Social Health Insurance; UC: Universal Coverage Scheme.

Source: Analysis of HWS (various years).

Across the gradient of household living standards measured by asset quintiles, the poorest quintile used outpatient service disproportionately more (26–28% cf. 8–10% of total national outpatient services) than the richest quintile during the first decade after UHC reform (Figure 7.11). To a similar degree, the inpatient admissions were also concentrated more among the poor than the rich over the same period.

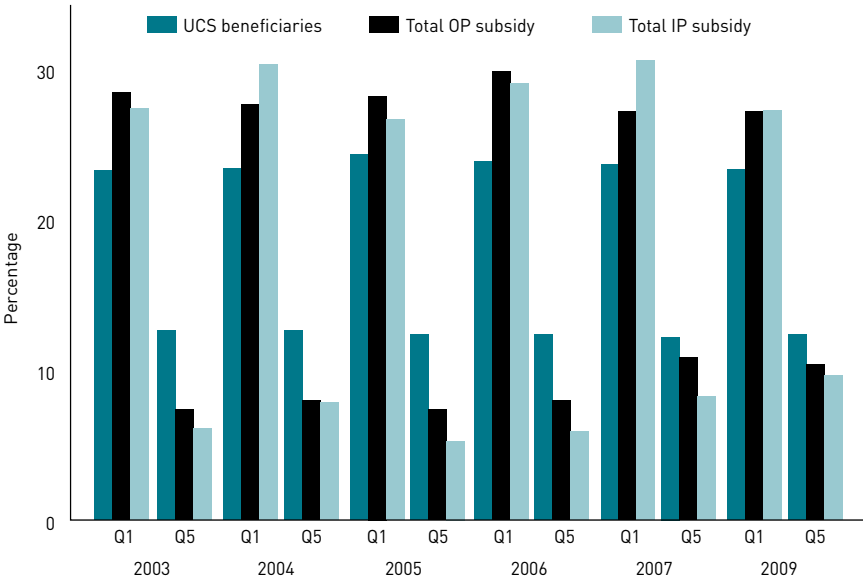
Figure 7.11 Proportions of outpatient visits and inpatient admissions, compared with number of beneficiaries of UCS by the poorest and richest quintiles of household asset index, 2003–2009



UCS: Universal Coverage Scheme; OP: outpatient; IP: inpatient.
 Note: The brown bar represents the relative proportion of UCS members distributed across the five quintiles. For example, of total UCS population, 23.2% belonged to the poorest quintile(Q1) in 2009, while 12.3% belonged to the richest quintile (Q5).
 Source: Limwattananon et al. (2012) (based on HWS).

From a benefit incidence analysis, the outpatient service used by the poorest UCS members accounted for 27–30% of the Government net subsidy, whereas that for the richest members accounted for just 7–11% during 2003–2009 (Figure 7.12). Similarly, the inpatient service subsidy was disproportionately concentrated more among poor than rich UCS members. This indicates that the UHC reform is able to maintain a pro-poor Government health subsidy, partly driven by improved access to health services among the UCS poor subgroup. Pro-poor utilization is the result of NHSO contracting the district health systems’ PHC services, which poor people can easily access due to proximity to their domiciles. At the same time, the richest quintiles did not use their entitlement, and chose to bypass and pay instead or use of private-sector providers.

Figure 7.12 Proportions of government subsidy for out- and inpatient services, compared with number of beneficiaries of UCS by the poorest and richest quintiles of household asset index, 2003–2009



UCS: Universal Coverage Scheme; OP: outpatient; IP: inpatient.
 Note: benefit incidence in 2009 is pro-poor; for example, 23.2% of total UCS members belonged to the poorest quintile (Q1), but benefited disproportionately from out- and inpatient services, 27.1% and 27.2% of total public subsidies. Meanwhile the richest quintile (Q5), consisting of 12.3% of total UCS members, benefited from 10.2% and 9.6% of total out- and inpatient subsidies.
 Source: Limwattananon et al. [2012] (based on HWS).

7.4 Health outcomes, health service outcomes and quality of care

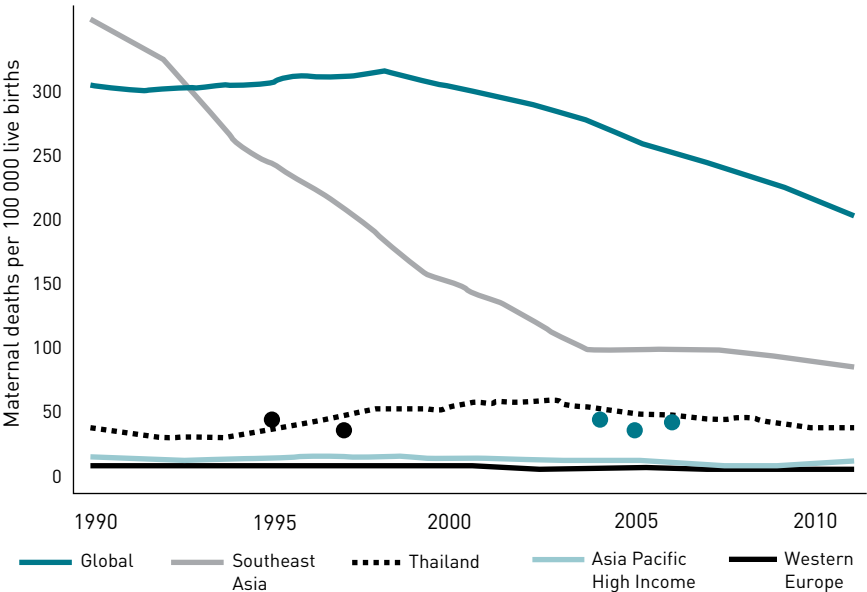
7.4.1 Population health

Trends in population mortality

Institute for Health Metrics and Evaluation (IHME) estimates reveal relatively low mortality of mothers in Thailand compared with other countries in South-East Asia and the global average (Figure 7.13). However, the maternal mortality ratio is still higher than that in high-income, Asia-Pacific and Western European regions (by 2–3 times). The IHME estimate is a little higher than the recent domestic estimate based on the Reproductive Age Mortality Study (RAMOS) method (1995 and 1997) and the more recently (2004–2006) revised figures by researchers from Thailand Development and Research Institute (TDRI)

(Chandoevit et al., 2007). Recent estimate by WHO–UNICEF–UNFPA and World Bank for 2010 was 48 per 100 000 live births, with an uncertainty range of 33 to 70 (WHO, 2012c).

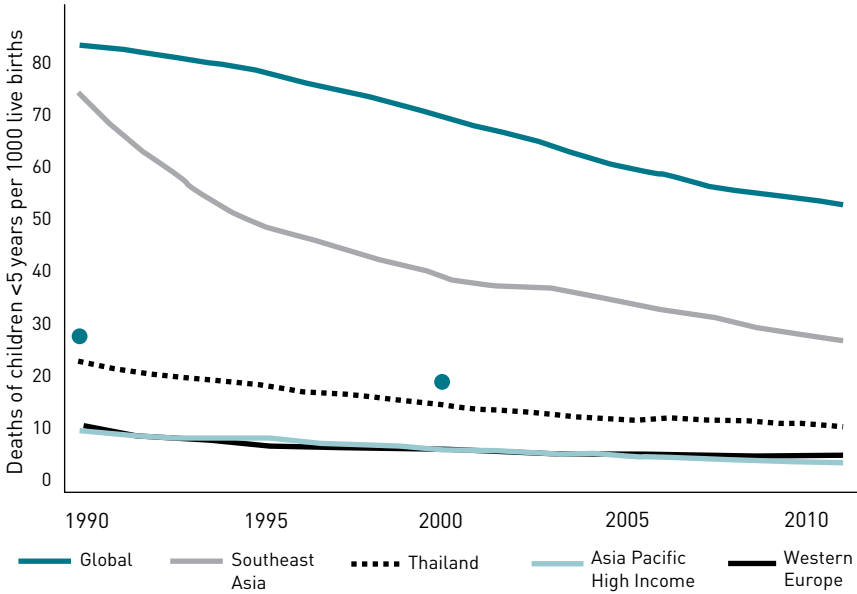
Figure 7.13 Maternal mortality in Thailand, global average and selected world regions, 1990–2011



Notes: 95% confidence intervals given for Thailand and global; median for global regions; domestic estimates: RAMOS (black circles) and TDR (green circles).
 Source: IHME (2011c); Analysis of Ministry of Public Health data.

Thailand experienced a steady decline in under-five mortality rate (U5MR) even before UHC achievement (Figure 7.14). The U5MR is much lower than the global average and the median value for South-East Asia, but higher than the high-income Western Europe and Asia–Pacific averages. The IHME estimate is a little lower than the U5MR estimate using the Thai population census in 1990 and 2000 (Vapattanawong et al., 2007).

Figure 7.14 Child mortality in Thailand, global average and selected world regions, 1990–2011

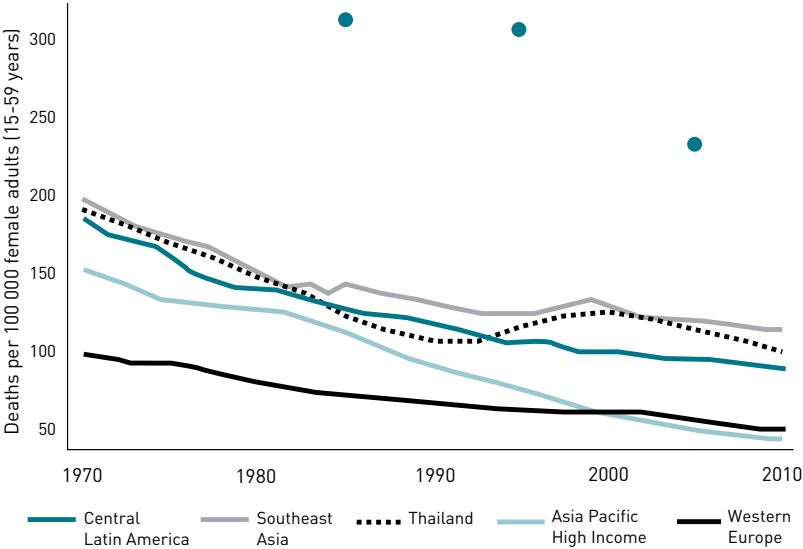


Notes: 95% confidence intervals given for Thailand and global; median for global regions; the two green dots represent estimates from 1990 and 2000 censuses.

Source: IHME (2011b); and analysis of MOPH data.

Adult male and female mortality rates (15–59 years) are comparable with the median value in South-East Asia and higher than those in Central Latin America and high-income countries, especially during recent years (Figure 7.15A and 7.15B). However, domestic estimates based on the intercensus surveys – Survey of Population Change (SPC) in 1985, 1995 and 2005 – are much higher than the IHME estimate. Both male and female adult mortality increased in the 1990s as a result of HIV/AIDS epidemics which seriously affected mortality and halted life expectancy progressions.

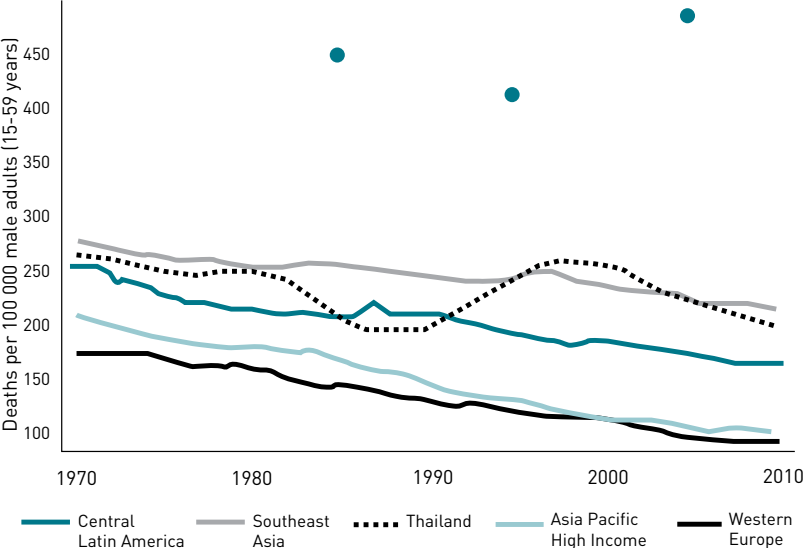
Figure 7.15A Adult female mortality in Thailand and selected world regions, 1970–2010



Notes: Median for world regions; the three green dots represent estimates from three intercensus surveys (SPC).

Source: IHME (2010a); and analysis of the MOPH data.

Figure 7.15B Adult male mortality in Thailand and selected world regions, 1970–2010



Note: Median for world regions; the three green dots represent estimates from three intercensus surveys (SPC).

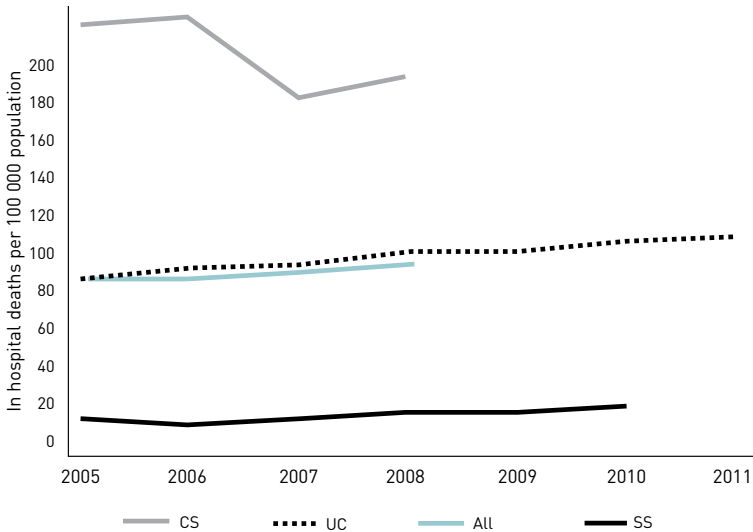
Source: IHME (2010a); and analysis of the MOPH data.

Mortality amenable to medical intervention

Conditions for which death is deemed amenable to health care when effective interventions are available (Castelli & Nizalova, 2011) in this report cover 23 acute and chronic diseases, including pneumonia, tuberculosis, rheumatic heart disease, breast cancer, cervical cancer, peptic ulcer, epilepsy, diabetes, hypertension, ischaemic heart disease and cerebrovascular disease. Hospitalization data for persons with such diseases were obtained from national inpatient databases of the major three public insurance schemes for different time series – CSMBS (2005–2008), SHI (2005–2010) and UCS (2005–2011). Each inpatient discharge was identified using the principal diagnoses with International Classification of Disease (ver. 10) (ICD-10) codes derived from Nolte, Scholz & McKee (2004) and Page et al. (2006). Electronic hospitalization data were not readily available for the whole country before the UHC reform, but were thereafter; hence, the assessment was conducted for the post-UHC period only.

For the three insurance schemes combined, deaths from the selected conditions increased from 86 per 100 000 members in 2005 to 95 in 2008 (Figure 7.16). The trend was almost identical for UCS members, who account for 70% of the Thai population.

Figure 7.16 Mortality amenable to health care per 100 000 population, overall and by insurance scheme, 2005–2011

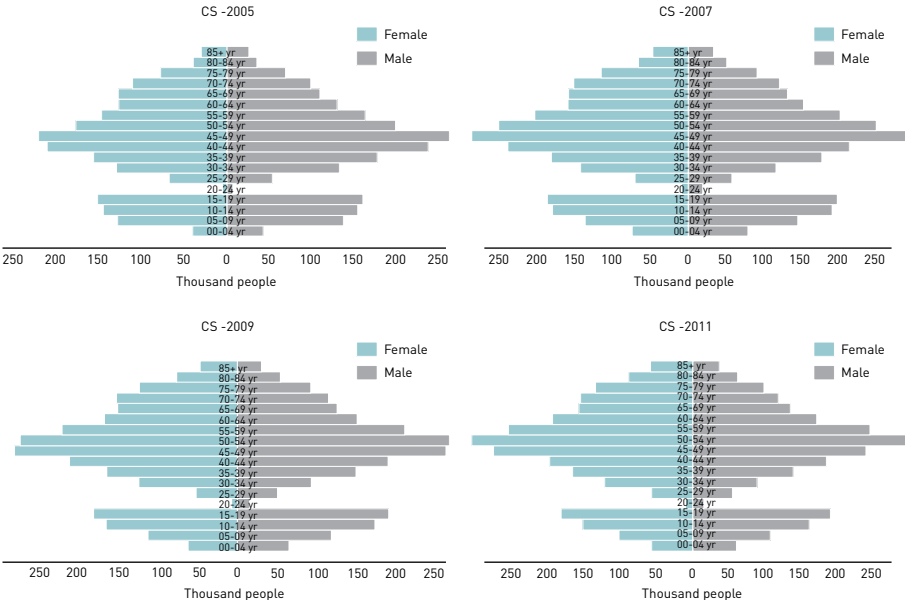


CS: Civil Servant Medical Benefit Scheme; SS: Social Health Insurance; UC: Universal Coverage Scheme.
Source: Analysis of national inpatient databases of insurance schemes.

The in-hospital amendable deaths per 100 000 members were relatively higher for the CSMBS (more than 200 per 100 000; Figure 7.16) due to the relatively older age of CSMBS membership (Figure 7.17A), as compared to the younger age (adult) SHI membership (Figure 7.17B) and the bimodal UCS membership (Figure 7.17C).

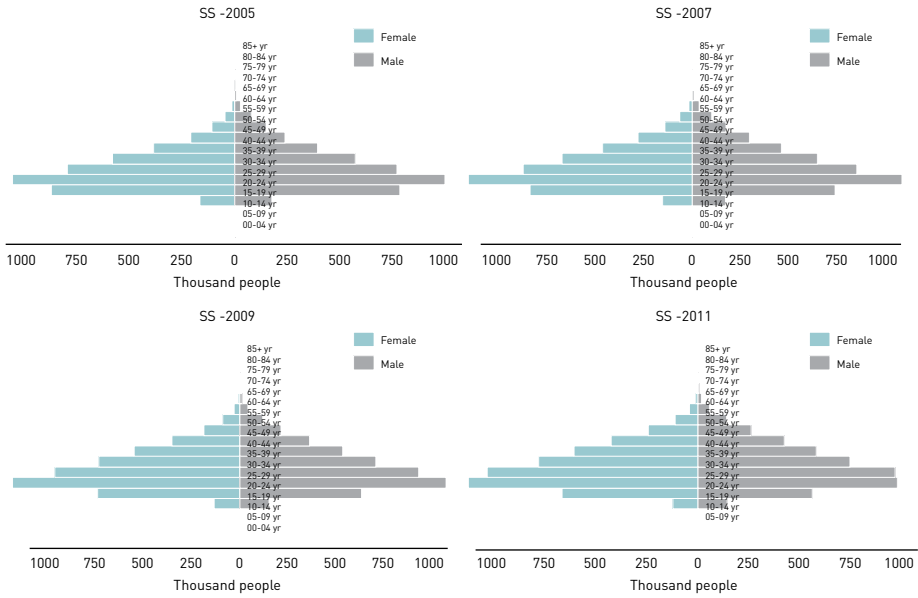
Interpretation of Figure 7.16 is made with care. First, the numerator is the in-hospital mortality. The UCS patients, who are mostly engaged in the informal sector and rural residents, probably requested (themselves or by relatives) to be discharged alive but were more likely than CSMBS members to die at home – 51.7% of total national deaths took place at home (NSO, 2015). Second, the denominator is population (not hospitalized patients) who were the scheme members. Significant variation in demographic structure across schemes was noted (Figure 7.17 A, B and C). Figure 7.16 does not reflect scheme performance, but is rather underpinned by demographic characteristics. Third, Figure 7.16 does not provide age standardization, hence SHI mortality lies at the bottom and CSMBS at the top.

Figure 7.17A Population pyramid of CSMBS members, 2005–2011



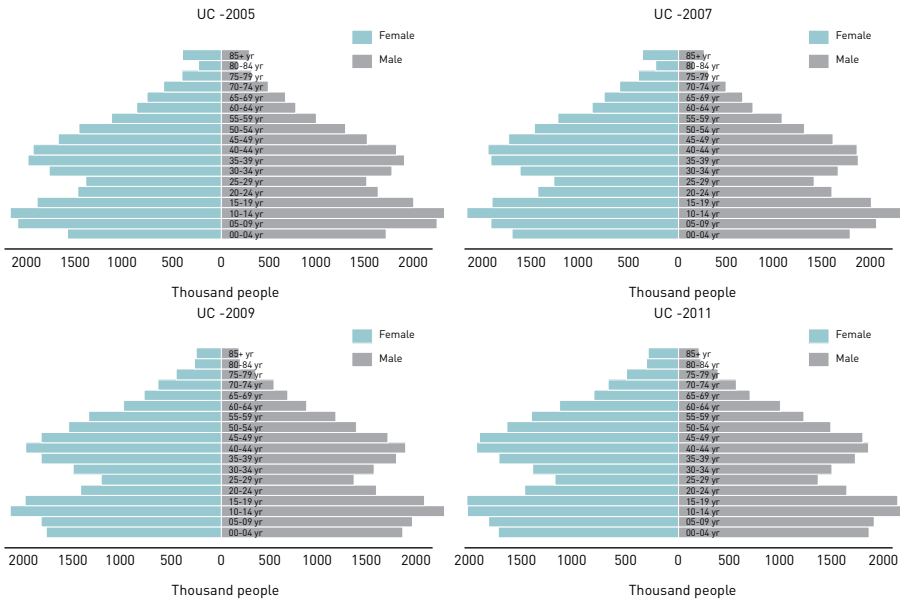
Source: Analysis of CSMBS member database (various years).

Figure 7.17B Population pyramid of SHI members, 2005–2011



Source: Analysis of SHI member database (various years).

Figure 7.17C Population pyramid of UCS members, 2005–2011

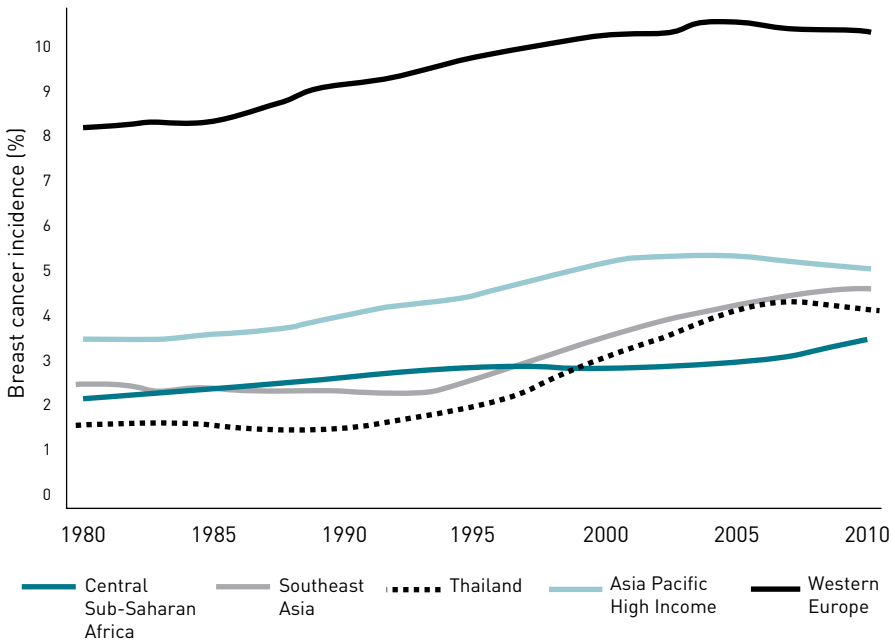


Source: Analysis of UCS member database (various years).

Cancer incidence and survival

For two common female cancers, breast and cervical, the incidence among the adult female population in Thailand before the turn of the century was lower than the median rate in South-East Asia. With the National Cancer Registry well established, the incidence of these two cancers should now reflect the real situation. A national programme on cervical cancer screening using Pap smear and recently visual inspection and acetic acid application is fully financed by NHSO for the whole population (not only UCS members), facilitating higher coverage of screening. However, there is no organized breast cancer screening using mammography, due to its cost ineffectiveness (Anothaisintawee, Tantai & Teerawattananon, 2013). Breast cancer incidence has risen steeply following the country’s economic growth, just as in high-income regions, reaching the regional median and surpassing Central Africa (Figure 7.18A).

Figure 7.18A Incidence of breast cancer in Thailand, global average and selected world regions, per 100 000 women, 1980–2010

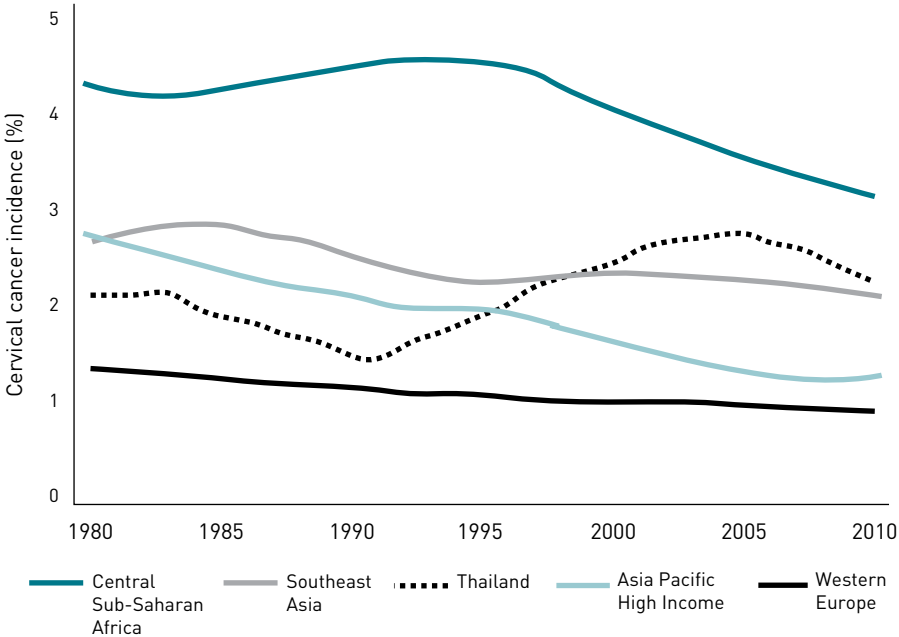


Source: IHME (2011a).

For cervical cancer, high-income regions and even sub-Saharan Africa have experienced a decreasing trend since 1980. The incidence in Thailand increased after 1990 and has been above the regional median since 1999 (Figure 7.18B). However, one caveat to these comparisons is

the limited access to services in sub-Saharan African while there has been improved access to care –more breast cancers are diagnosed in Thailand.

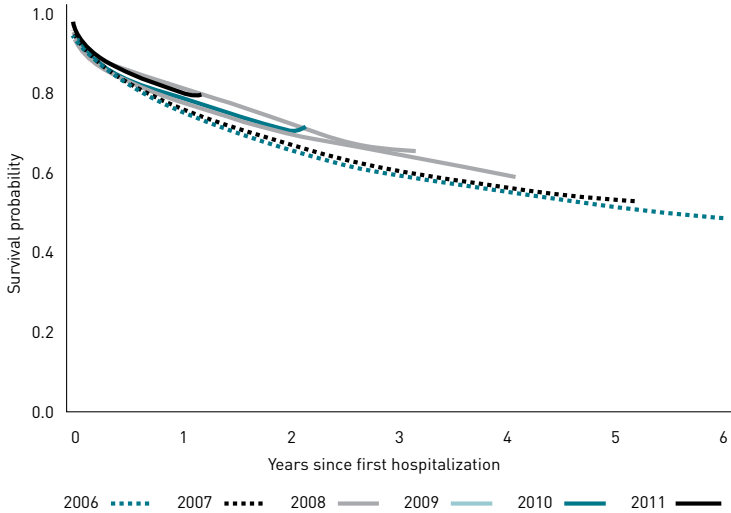
Figure 7.18B Incidence of cervical cancer in Thailand, global average and selected world regions, per 100 000 women, 1980–2010



Source: IHME (2011a).

Thailand has full coverage of birth and death registries; by law, all deaths either in hospital or at home have to be reported and registered within 24 hours to the Civil Registration system, whose data are shared regularly with NHSO. Survival status of all hospital discharges can be assessed regularly. The overall survival for three common solid tumours (breast, cervical and colorectal cancers) for UCS patients are shown in Figure 7.19A, B and C, respectively. Five-year survival rates of breast, cervical and colorectal cancers for those first admitted in 2006–2007 are approximately 55–57%, 50–52% and 33–36%, respectively. Survival probability is comparable with other developing countries. For example, 5-year breast cancer survival in nine sites ranged from 45% in Bangalor, India to 72% in Shanghai, China. Similarly, cervical cancer survival in these sites ranges from 29% in Rizal, Philippines to 68% in Chiangmai, Thailand (Mathers et al., 2001).

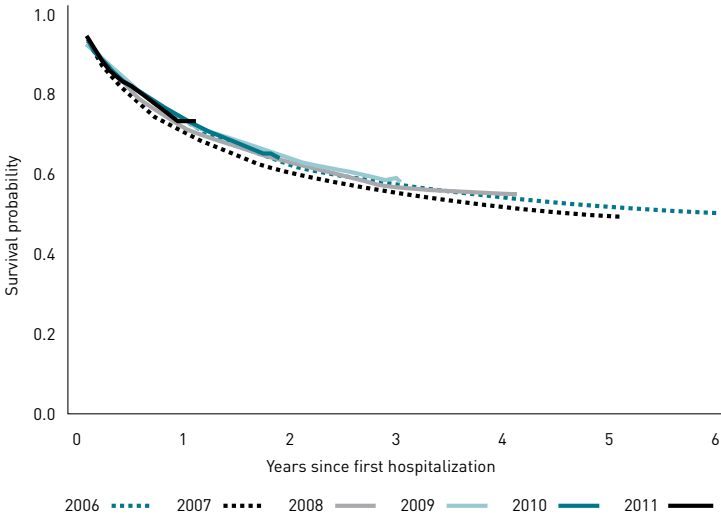
Figure 7.19A Overall survival of UCS patients admitted with breast cancer, 2006–2011



Source: Limwattananon et al. (2012)

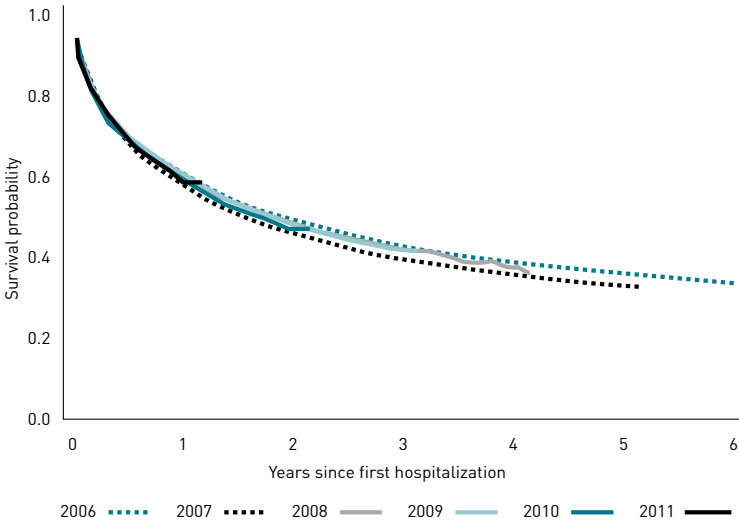
For breast cancer, the survival of the UCS patients first admitted in a more recent year (2008–2011) is higher than those in 2006–2007, as treatment regimens have improved. Improved survival has not been seen in cervical and colorectal cancers.

Figure 7.19B Overall survival of UCS patients admitted with cervical cancer, 2006–2011



Source: Limwattananon et al. (2012)

Figure 7.19C Overall survival of UCS patients admitted with colorectal cancer, 2006–2011



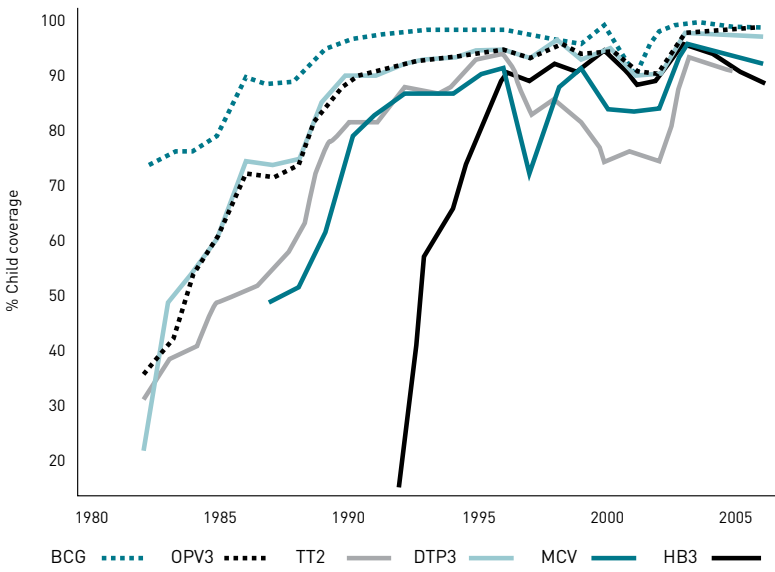
Source: Limwattananon et al. (2012)

7.4.2 Health service outcomes and quality of care

Preventive care: child vaccination rates

Thailand experienced a rapid scale up of child immunization during the 1980s. After implementation of the national expanded programme for immunization (EPI) in 1982, coverage of child vaccination reached the 80% threshold within 3 years for Bacillus Calmette–Guérin (BCG for tuberculosis, due to high coverage of institutional births), followed by diphtheria–tetanus–pertussis (DTP3), oral polio vaccine (OPV3) and tetanus-toxoid vaccine (TT2) (Figure 7.20). With PHC capacities, the scaling up measles and hepatitis B vaccines are faster.

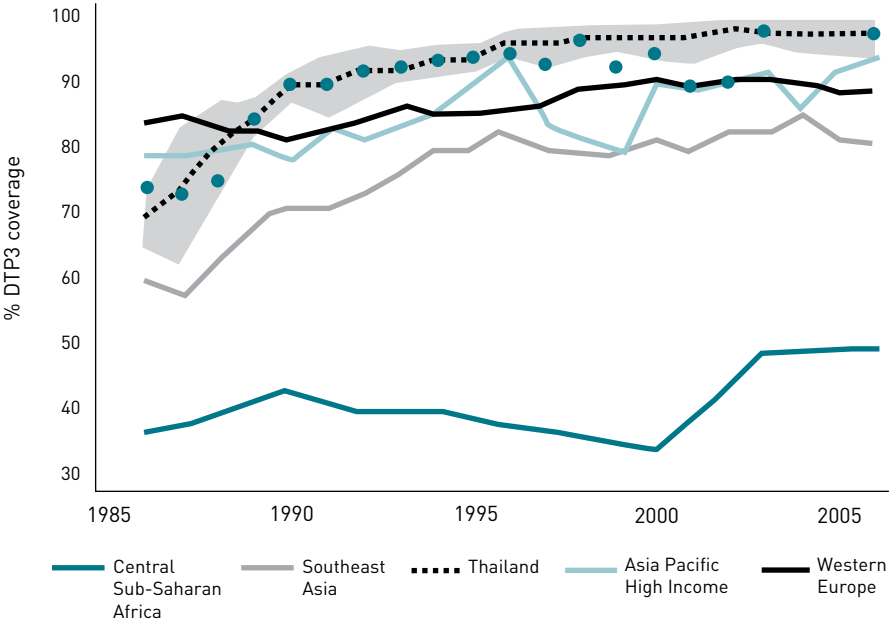
Figure 7.20 Achievement of universal access to child immunization in Thailand, 1982–2006



Source: Analysis of MOPH data.

Compared internationally, the Thai health system outperforms high-income Western Europe and Asia-Pacific in the case of DTP3 coverage (Figure 7.21).

Figure 7.21 DTP immunization in Thailand and selected world regions, 1986–2006



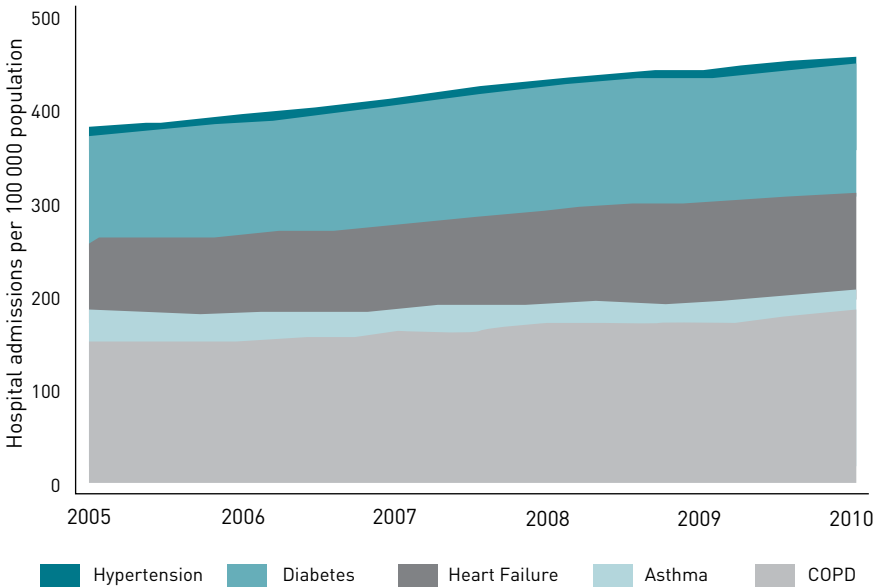
Note: The grey shade represents 95% confidence interval based on IHME (2008); the green dots are the domestic estimates based on the MOPH data.

Source: IHME (2008); analysis of MOPH data.

Chronic conditions: avoidable hospital admission rates

Like other countries under economic development, Thailand is faced with burdens from hospitalization of noncommunicable chronic disease (NCD) cases that could be better controlled in ambulatory care settings. In 2005, hospital admissions due to the ambulatory care-sensitive conditions (ACSC, hospitalizations that could be prevented by effective interventions at PHC level) – including poorly controlled chronic obstructive pulmonary disease (COPD), asthma, heart failure, diabetes and its complications, and hypertension – were approximately 380 per 100 000 members of the three public insurance schemes (Figure 7.22). The most prevalent condition was COPD, followed by diabetes and heart failure. The overall prevalence increased rapidly from 380 in 2005 to 450 per 100 000 in 2010. Among the five ACSC, only asthma has shown a decreasing trend over the same period. There are large cost implications from admission with these ACSC.

Figure 7.22 Hospital admissions with conditions deemed controllable by ambulatory care, 2005–2010

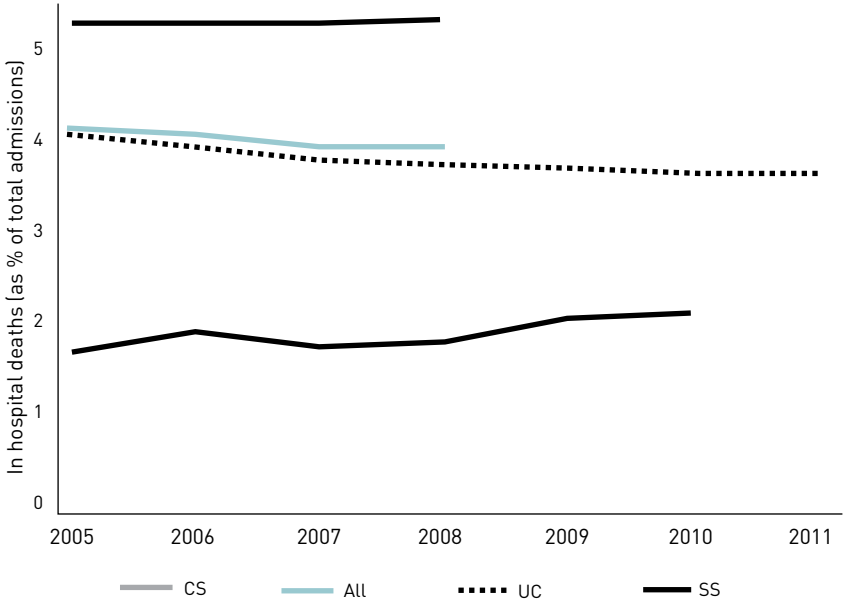


COPD: chronic obstructive pulmonary disease.

Source: Analysis of national inpatient databases of insurance schemes.

Once patients are hospitalized, the hospital sector performs quite well on its service provision. After the UHC reform, the number of deaths among patients hospitalized with conditions deemed amenable to care gradually declined, especially among UCS members (Figure 7.23).

Figure 7.23 Mortality of hospital admissions with conditions amenable to health care, overall and by insurance scheme, 2005–2011

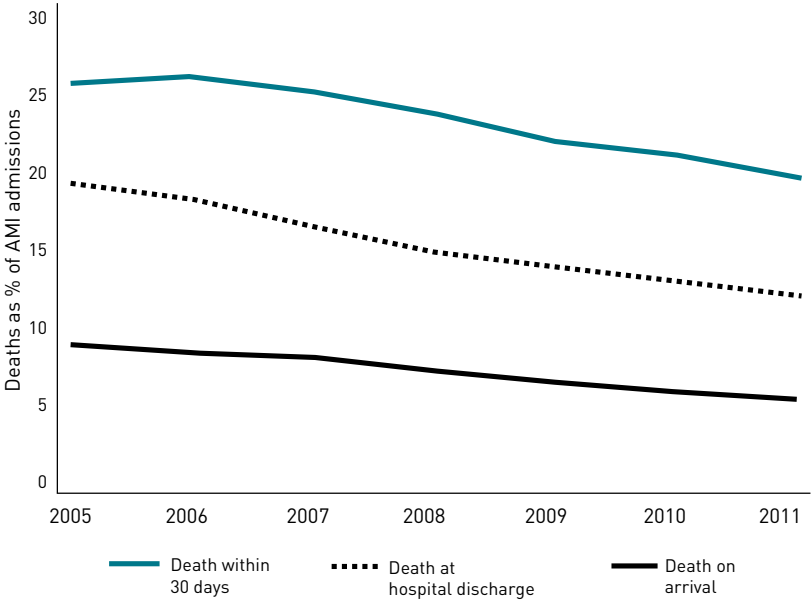


Source: Analysis of national inpatient databases of insurance schemes.

Acute exacerbations of chronic conditions: in-hospital mortality, 30-day mortality for admission following acute myocardial infarction and stroke

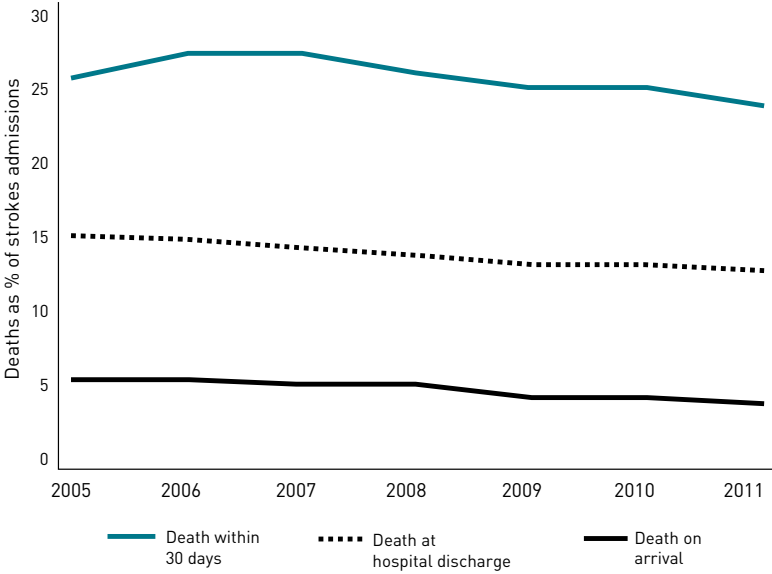
For the UCS, there was a decrease in mortality following hospitalization with acute myocardial infarction (AMI) and stroke over 2005–2011. Reduction in the death rate within 30 days after hospital admission with AMI is parallel to the rapid decline in death rate at the hospital discharge (Figure 7.24). Reduction in deaths from ischaemic and haemorrhagic strokes shows slower progress than those from AMI over the same period (Figure 7.25). Note that both figures are analysed from all hospital types, they reflect better progress in treatment outcomes on AMI than ischaemic and haemorrhagic strokes. As UCS patients preferred to die at home, the 30-day mortality is probably a better indicator for assessing the treatment outcome than the in-hospital death rate.

Figure 7.24 Deaths from AMI on hospital arrival, at discharge and within 30 days for UCS patients, 2005–2011



AMI: acute myocardial infarction.
 Source: Analysis of national inpatient databases of insurance schemes.

Figure 7.25 Deaths from strokes on hospital arrival, at discharge and within 30 days for UCS patients, 2005–2011



UCS: Universal Coverage Scheme.
 Source: Analysis of national inpatient databases of insurance schemes.

7.4.3 Equity of outcomes

With the almost universal access to preventive interventions, immunization in Thai children is perfectly equitable. The extreme high–low education, rich–poor and urban–rural ratios for coverage of five essential vaccines reached unity (1.0) according to the recent national survey jointly conducted by NSO and United Nations Children’s Fund (UNICEF), the Multi-indicator Cluster survey in 2005–2006 (Table 7.1).

Table 7.1 Concentration index and extremal quotients of child immunization between the highest and lowest socioeconomic status groups, 2005–2006

	BCG	OPV	DTP	MCV	HBV
Concentration index (CI) ^a	-0.0104	0.0002	0.0002	-0.0041	-0.0052
Overall coverage	87.5%	84.9%	84.9%	75.2%	80.4%
Extremal quotients:					
Postsecondary school : no education	1.01	1.05	0.96	1.12	0.93
Quintiles of asset index 5 : 1	1.02	1.02	0.97	1.02	0.89
Urban : rural	0.99	0.99	0.97	0.98	0.95

BCG: Bacillus Calmette–Guérin (tuberculosis vaccine); OPV: oral polio vaccine; DTP: diphtheria, tetanus and pertussis; MCV: measles contained vaccines; HBV: Hepatitis B vaccine .

Note: a Summary measure of health inequality across household asset index, $-1 \leq CI < 0$ if concentrated among the poor and $0 < CI \leq +1$ if concentrated among the richer households.

Source: Limwattananon, Tangcharoensathien & Prakongsai(2010).

Inequity in child health outcomes, however, is still a major policy concern. The problems of low birth weight, reported diarrhoea and suspected pneumonia, and malnutrition are disproportionately concentrated among children whose mothers have a low level of education, live in poorer households and in rural areas (except for the low-birth weight prevalence) (Table 7.2).

Table 7.2 Concentration and extremal quotients of child health between the highest and lowest socioeconomic status groups, 2005–2006

	Low birth weight	Reported illnesses		Malnutrition		
		Diarrhoea	Suspected pneumonia	Underweight	Stunting	Wasting
Concentration index (CI) ^a	0.0367	-0.0531*	-0.0896**	-0.2192***	-0.1767***	-0.0655
Overall prevalence	8.3%	8.7%	4.6%	9.3%	11.9%	4.1%
Extremal quotients:						
Postsecondary school : no education	0.80	0.61	0.93	0.29	0.39	0.53
Quintiles of asset index 5 : 1	0.84	0.58	0.46	0.27	0.43	0.85
Urban : rural	1.14	0.90	0.62	0.52	0.66	0.93

Notes: a Summary measure of health inequality across household asset index, $-1 \leq CI < 0$ if concentrated among the poor and $0 < CI \leq +1$ if concentrated among the richer households; * $P < 0.1$, ** $P < 0.05$, *** $P < 0.01$.

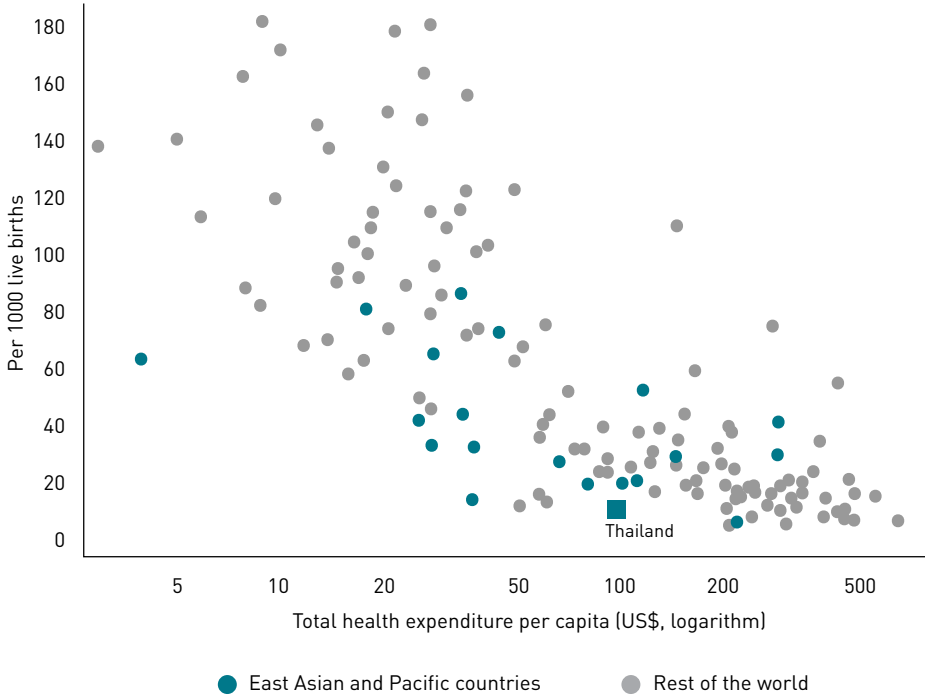
Source: Limwattananon, Tangcharoensathien & Prakongsai (2010).

7.5 Health system efficiency

7.5.1 Allocative efficiency

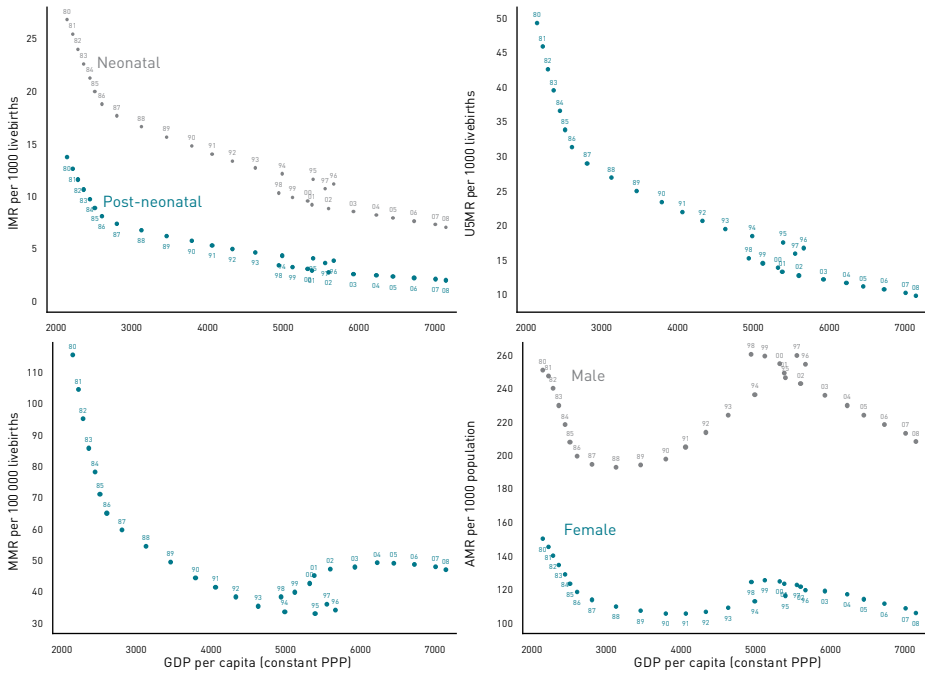
Between 1980 and 2010, Thailand demonstrated a high level of health achievement in terms of infant and child and maternal mortality (except adult mortality, as discussed above on impact of HIV/AIDS epidemics) at a relatively low cost, compared with international peers having similar GDP per capita and health-care expenditure per capita (Figure 7.26 and 7.27). Achieving good health at a relatively low cost reflects a relatively efficient health system. Note that the gradual increase in maternal mortality ratio around the turn of century is due to method changes in the reporting system, as well as the impact of HIV/AIDS epidemics.

Figure 7.26 Under-five mortality and per-capita health-care expenditure in Thailand and in other low- and middle-income countries, 2005



Source: Patcharanarumol et al. (2011).

Figure 7.27 Infant, under-five, maternal and adult mortalities and per-capita GDP, Thailand 1980–2008



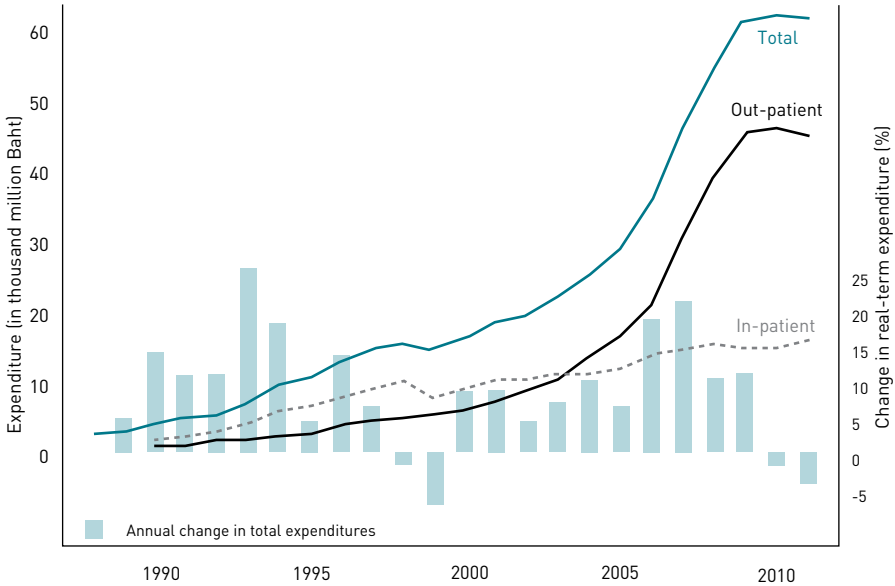
IMR: infant mortality rate; U5MR: under-five mortality rate; MMR: maternal mortality ratio; AMR: adult mortality rate.
 Note: Each dot represents the mortality and the per-capita GDP amount, labelled with the last two digits of the calendar year.
 Source: Analysis of IHME (on mortality) and World Development Indicators (on country GDP) data.

The continuous drop in the child mortality is a result of two strands of health systems development: (a) the expansion of rural health infrastructure and workforces since the third national economic and social development plan in 1972, which enables geographical access to functioning PHC and referral services; and (b) financial risk protection by public insurance schemes, which enables financial access to essential health services, successively introduced in 2002 UHC reform (Patcharanarumol et al., 2011).

Though the health system is relatively efficient in terms of allocative efficiency (Figure 7.26), some inefficiency needs policy attention – for example, rapid cost escalation in health spending with unknown health outcomes in the CSMBS, covering 5 million people (8% of total population). There was double-digit real-term growth in the CSMBS expenditure most years in 1990s and 2000s. Cost escalation of

outpatient expenditure is a result of fee-for-service payment without adequate regulatory capacity of the Ministry of Finance to manage the Scheme and contain expenditure. However, a recent reform that introduced tougher measures for the top spending drug classes had halted outpatient expenditure growth in 2010 and 2011 (Figure 7.28) (Limwattananon et al., 2011; Jongudomsuk et al., 2012).

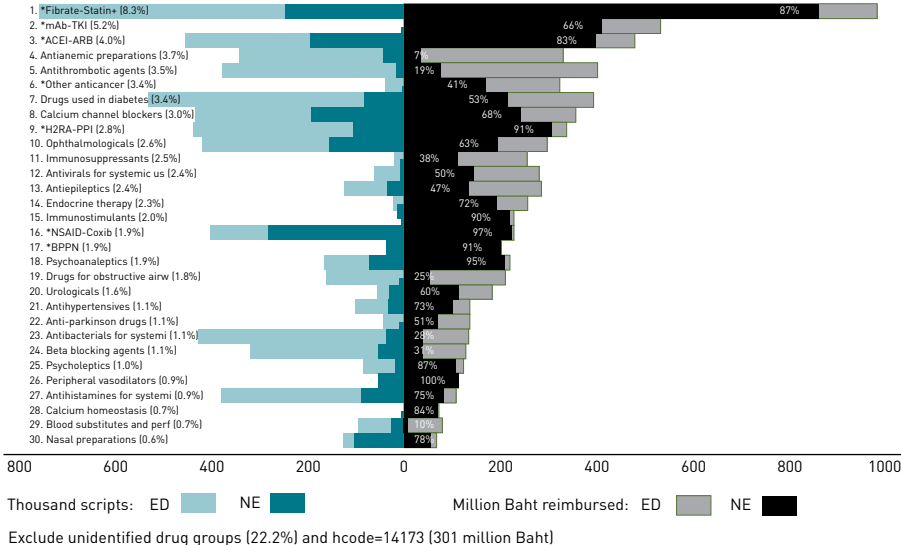
Figure 7.28 Total health-care expenditures of CSMBS by types of service and annual growth, 1988–2011



Source: Analysis from the database of Comptroller General Department, Ministry of Finance.

Drug costs typically account for approximately three quarters of total outpatient expenditure. Figure 7.29 illustrates the top 30 expenditure items ranked by drug classes in the 33 tertiary care hospitals most used by CSMBS members. Among these top spending drug classes, the products covered in the National Lists of Essential Medicines (so-called essential drugs, ED) had a minor share of the total expenditure, as compared with nonessential drugs (NED).

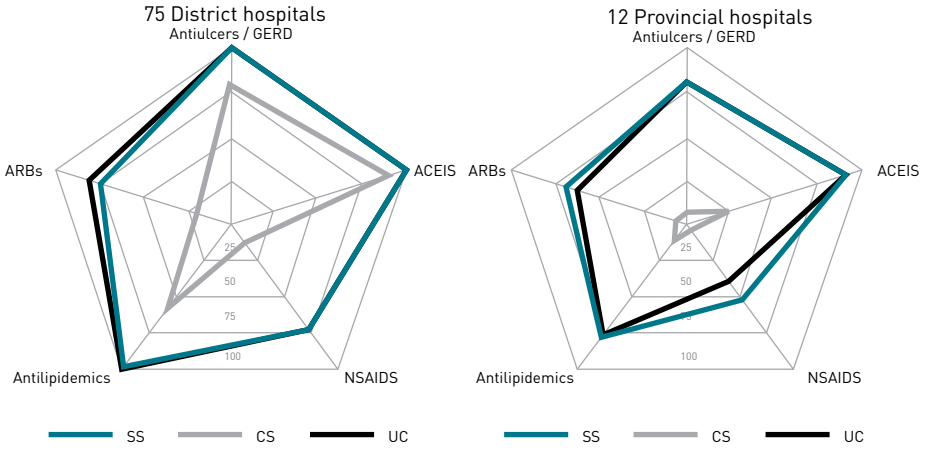
Figure 7.29 Top 30 drug classes for outpatient expenditure of CSMBS in number of prescriptions and amount reimbursed by essential drug status, 2012



ED: essential drugs; NED: nonessential drugs.
 Source: HISRO (2012).

Compared with the other two public health insurance schemes, CSMBS patients tend to receive ED prescriptions in a lower proportion (by expenditure) for most common drug classes, including antiulcers/ gastro-oesophageal reflux disorders (GERD), ACE inhibitors (ACEI), Angiotensin-2 receptor blockers (ARB), non-steroidal anti-inflammatory drugs (NSAID), and antilipidemics (Figure 7.30). This is true regardless of hospital type – district or provincial.

Figure 7.30 Proportion of essential drugs in major drug classes prescribed for outpatients in district and provincial hospitals by health insurance scheme, 2010

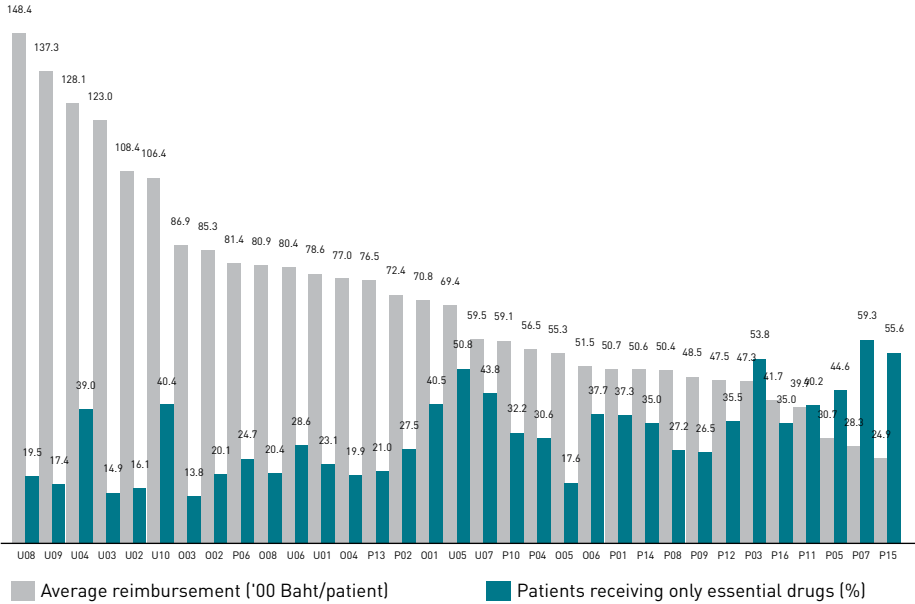


GERD: gastro-oesophageal reflux disorders; ACEI: ACE inhibitors; ARB: Angiotensin-2 receptor blockers; NSAID: non-steroidal anti-inflammatory drugs.

Source: Analysis of NHSO data.

At the hospital level, average drug expenditure per CSMBS patient varies – higher for the large university hospitals and lower for the MOPH hospitals. Among the 33 most-visited hospitals by CSMBS members, those with relatively higher expenditure tended to have a lower fraction of the CSMBS patients prescribed with ED (Figure 7.31).

Figure 7.31 Average reimbursed drug expenditure and use of essential drugs in 33 hospitals, July 2011 to March 2012



U: university hospital; P:MOPH hospital; O: Other type of hospital.
 Source: HISRO (2012).

The inefficient CSMBS, reflected by rapid outpatient cost escalation and excessive use of diagnostics and NED with unclear health outcomes, is the result of the fee-for-service mechanism, demanding patients who send wrong signals to prescribers, lack of single national fee schedule (MOPH has its own fee schedule, but non-MOPH public and private hospitals apply their own schedules), no negotiation of total budget outlay, and most importantly lack of regulatory capacity of the Ministry of Finance to enforce, in the light of powerful medical associations and colleges protecting professional interests and actively discrediting ED and generic medicines.

Efforts since 1994 to reorient towards close-ended payment such as capitation in CSMBS have not been successful, not only because of resistance from the medical community. There was no Ministry of Finance leadership calling for scientific evidence; despite the fact that SHI and UCS have applied capitation for their outpatient services since 1991 and 2002, respectively, and public and private providers have responded in a positive way in prescribing and dispensing generic essential medicines throughout the country without resistance.

While good performance on child health outcomes was evident, Thailand does not perform well in achieving adult health, measured by probability of death between the ages of 15 and 60 years (45q15). Among Thai women, the probability of mortality per 1000 women has improved from 180 in 1970, to 106 in 1990 and then stagnated (100 in 2010). However, among men the mortality probability was 265, 188 and then increased to 200 over the same period; most male mortality in the 2000s was related to HIV/AIDS, tuberculosis and injuries. Efforts should be made to invest in effective interventions to improve adult mortality probability (Rajaratnam et al., 2010).

Allocative efficiency in inpatient care has been achieved through the case-mix funding based on diagnosis-related group (DRG). The national inpatient data from 2004 to 2010 proved that over 6 years after teaching hospitals were paid on DRG for the UCS patients, beds in teaching hospitals for the most common DRGs were used 14% more efficiently based on length of stay (LOS). The efficiency of bed use over the same period for non-teaching hospitals for the most common DRGs was 2% – perhaps this was a marginal effect from the overloaded non-teaching hospitals. This suggests that the scarce high-cost teaching-hospital beds should be allocated to more complex cases needing treatment in tertiary care settings. The impact of DRG on the overall allocation of resources to inpatient services of the CSMBS was convincing, as inpatient costs were contained after the introduction of DRG to the Scheme in 2006.

However, considering the overall framework of allocative efficiency based on National Health Accounts studies, Thailand still needs mechanisms to balance allocation of public resources to the three public health insurance schemes and to the MOPH commensurable with health needs and outcomes. Harmonization of payment mechanisms has yet to be realized. In the future, more elderly and care-dependent people will put stress on the allocative efficiency model channelling more resources to pharmaceuticals, skilled allied health services and others.

7.5.2 Technical efficiency

The close-ended provider payment applied by the SHI in 1991 and UCS in 2002 contributed significantly to technical efficiency gains, as it aligns proper incentives towards efficiency through the use of low-cost effective generic medicines and rational prescribing. The risk under capitation is inadequate services, so unit costs and rates of use are monitored and members can change contractor yearly if they are not satisfied.

Studies have suggested that service use of this model in Thailand is adequate in terms of rate of use (more than 3.5 visits per person per year and around 11% admission rate) and good quality of care provided to both UCS and SHI members (Tangcharoensathien, Supachutikul & Lertiendumrong, 1999; Mills et al., 2000; Prakongsai, Limwattananon & Tangcharoensathien, 2009). The medical service utilization rate among SHI members is adequate: 2.5 visits per capita per year and 6% admission rate in 2013 (SSO, 2015). The contracting model under capitation designating PHC as gatekeeper further strengthens technical efficiency.

Since 2008, inclusion of new medicine and interventions into the benefit package of UCS has required full-blown studies of cost-effectiveness, where the Health Intervention and Technology Assessment Program (HITAP), established in 2007 as a non-profit-making organization, is mandated to appraise a wide range of health technologies and programmes, including pharmaceuticals, medical devices, interventions, individual and community health promotion and disease prevention (Tantivess, Teerawattananon & Mills, 2009). HITAP is an associate organization under the auspices of the International Health Policy Program (IHPP). HITAP contributed to a number of studies having major policy impact, including the study on cervical cancer screening in the light of high-cost human papilloma virus (HPV) vaccine campaign by the industry recommended that it not be adopted into the benefit package, while at the same time recommended the scaling up cervical cancer screening through Pap smear and visual inspection and acetic acid application (Yothasamut et al., 2010).

To cope with high spending, the CSMBS imposes strong vigilance by auditing the indications of prescribing certain expensive drugs and revoking reimbursement. Some hospitals help control overprescribing less technically efficient expensive drugs by asking patients to pay cash and later process for reimbursement. Utilization reviews on CSMBS and UCS patients with diabetes reveal that as the morbidity burdens of both patient cohorts increased, they had better access to cost-effective expensive drugs according to clinical practice guidelines with cost reduction overtime for the CSMBS patients, but with cost increase overtime for the UCS patients.

7.6 Transparency and accountability

Many health policies, including healthy public policies in the early 2000s, have significant involvements in the social sectors (Rasanathan et al.,

2012). The passages of the Social Security Act in 1990 and the National Health Security Act in 2002 also involved policy advocates and popular movements. From 1990 to 2002, popular demands for transparency and public accountability grew fast. The design of multi-stakeholder governance of UCS was in responses to more public accountability. Though the National Health Security Act stipulated that the management of the CSMBS and the SHI should be integrated with the UCS when ready, resistance from CSMBS and SHI beneficiaries and their governing boards have prevented such integration. Intermittent interventions from rapid turnover of health ministers since middle 2000s struggled to achieve even the payment harmonization across the three schemes. The governing boards of individual schemes are more stable entities (membership-wise) than the Cabinet.

8 Conclusions

8.1 Health achievement and remaining challenges

The 1998 Asian economic crisis resulted in negative gross domestic product (GDP) growth for a few years; it took Thailand 10 years to recover gross national income (GNI) per capita to the same level as 1996. Thailand was classified as an upper middle-income country in 2011. The country has transitioned from high fertility and high mortality to low fertility and low mortality status with rapid demographic and epidemiological transition (Bundhamcharoen et al., 2011a). The major causes of death and burden of disease measured by disability-adjusted life years (DALY) loss are noncommunicable diseases, although HIV/AIDS and tuberculosis remain public health problems (Bundhamcharoen et al., 2011b). Despite high performance of maternal and child health outcomes, adult mortality has not performed well enough, mostly attributable to road traffic injuries, homicide and excessive use of alcohol. Despite advancement in tobacco control with the Tobacco Product Control Acts (1992) and the Non-smoker Health Protection Act (1992) legislated well before the ratification of the Framework Convention on Tobacco Control in 2004, reduction in the prevalence of regular smokers levelled off within a few years. The tobacco retail price has not kept pace with increases in household disposable income. Increased trend of unintended pregnancy among adolescents with various psychosocial, economic and health consequences are noted.

8.2 Good access in rural areas, but weak primary health care systems in urban areas

The health-care infrastructure in Thailand is well developed with good geographical coverage. There is a health centre covering each sub-district with an average population of 5000, a community hospital covering each district with an average population of 50 000, and a general hospital covering each province with a population of 600 000. Some general hospitals have been upgraded to regional hospitals and serve as referral centres in their regions. At sub-district level, primary health care (PHC)

services are provided by 10 347 health centres, covering all sub-districts, though only 5% of them have physicians, notably in urban areas including Bangkok. Almost all rural health centres belong to the Ministry of Public Health (MOPH) and there were 3.8 staff per health centre in 2011. There are several private clinics in urban settings which can serve as points for ambulatory care, but do not provide a comprehensive package of PHC, as most are open only part-time. However, there are Social Medicine Departments in general and regional hospitals, which serve as PHC providers for populations in municipalities.

As a health centre has no physician, it cannot be a gatekeeper in the Universal Coverage Scheme (UCS) and has to collaborate with a community hospital to constitute a main contractor for primary care (contracting unit for primary care, CUP) for a given catchment population (usually a district). Although there was a policy to upgrade health centres to Sub-district Health Promotion Hospitals, the upgrading only renames the health centre, without changing its functions or number of staff, which is far below the benchmark of 5–6 staff per health centre serving smaller populations and 8–10 staff serving larger populations. In urban settings, there is a problem of coverage of PHC due to weakness of local government in health-care provision. The numbers of urban health centres belonging to municipalities are grossly inadequate for the entire urban population, although Social Medicine Departments can help in limited geographical areas. The situation is worse in Bangkok where investments have been in hospitals, both public and private, but Bangkok Metropolitan Authority has 68 health centres serving an official population of 8 million (though the unofficial figure is around 12 million, including 3 million domestic and 1 million international migrants). In addition, family physicians and general practitioners providing PHC services are very limited due to overspecialization. The proportion of specialist was 85% and generalists 15% of total physicians in 2009 (HISO, 2014).

8.3 Significant increase in public spending and fiscal space

Thailand achieved universal health coverage in 2002 with the introduction of the UCS. The UCS is tax-financed where budget per population is estimated based on unit cost of services and average utilization rate for various types of service. The per-capita budget increased from 1202.4 Baht in 2002 to 2895.09 Baht in 2014, a 2.4-fold nominal increase due to increase in utilization, expansion of the benefit package, significant labour cost inflations from annual 6% government salary adjustments, and inflation of other medical products.

The Civil Servant Medical Benefit Scheme (CSMBS) is tax-financed, historically a noncontributory scheme despite public employees being engaged in the formal employed sector. The budget for the CSMBS is proposed by the Comptroller General Department (CGD) based on historical expenditure and projection to the fiscal year under consideration. As a result of fee-for-service for outpatients, significant cost escalation has occurred; meanwhile CSMBS contains inpatient expenditure fairly well as it applies a conventional diagnosis-related group (DRG) payment system. Cost pressures from UCS and CSMBS resulted in the increase of General Government Health Expenditure (GGHE) from 8% of General Government Expenditure (GGE) in 2001 to 11% in 2010. At the same time, the public finance sources increased from 54–56% of total health expenditure (THE) in 1997–2001 to 74.8% of THE in 2010. Despite this spending, THE increased only slightly from 3.3% of GDP in 2001 to 3.9% of GDP in 2010 due to the fast growth of GDP. The level of spending in relation to GDP is within the Government's fiscal capacities. The projected THE in 2020 is less than 4.5% of GDP and is felt to be within the Government's fiscal capacity. A major concern is budget for capital investment – reduced from 10% of THE in 1998 to 4.8% of THE in 2010 – not keeping pace with capacity needs for infrastructure and medical devices.

8.4 Multiple actors, complex relations and MOPH role as national health authority

Historically, the MOPH was the sole agency responsible for policy formulation, regulation, human resources production (through its own Nurse Colleges and also affiliation with universities for additional production of physicians), implementation of health programmes, and monitoring and evaluation. The MOPH has its bureaucratic structures from central to the most peripheral sub-district health centre. In 1992, the first public autonomous agency, the Health System Research Institute (HSRI), was established by law; it is responsible for the management and financing of health system research. HSRI supports the MOPH on evidence-based policy development since there is no agency in the MOPH fulfilling this function.

The Thai Health Promotion Foundation (ThaiHealth) was established by law in 2001 as a public autonomous agency and financed by sin tax, an additional 2% surcharge from tobacco and alcohol excise tax. ThaiHealth finances and empowers public, private and civil society to promote the well-being of the citizens. Its catalyst funding supports

programmes and actions that change social values, lifestyles and environments in ways that are conducive to health. ThaiHealth resources can be used even by the Department of Health of the MOPH responsible for health promotion.

The most critical event was the establishment of the National Health Security Office (NHSO) mandated by National Health Security Act 2002, as almost all of the operating budget, except salaries, was transferred from the MOPH to the NHSO. All MOPH health-care facilities are now solely financed by the demand-side allocation, notably capitation for outpatient services based on registered population and DRG for inpatient care, all managed by the NHSO. This purchaser–provider split reform meant that supply-side financing through annual budget allocation to MOPH health-care facilities was terminated with the advent of UCS in 2002. The MOPH and the NHSO have to work collaboratively to address the problem of the provider–purchaser split.

The National Health Commission Office (NHCO) was established in 2007 under the National Health Act. It is responsible to ensure that public policies, including health policies, are participatory and engage all actors through convening an annual National Health Assembly and other related Local Assemblies (Rasanathan et al., 2012). The Emergency Medical Institute of Thailand (EMIT) was established by the National Emergency Medical Act 2008 and is responsible for the management and financing of prehospital care and ambulance services throughout the country. The Health-care Accreditation Institute was established in 2009 through a royal decree authorized by the Public Organization Act (1999). It is mandated to improve quality of care, and accredit and re-accredit all public and private health-care institutions. Thus, MOPH is no longer the sole health actor, as independent public agencies, local government agencies, non-state actors (including private sector and civil society constituencies) are increasingly active health actors. The MOPH has to learn how to work constructively and engage with all relevant stakeholders, in a network manner, to contribute to the achievement of national health goals and fulfil its mandate as the national health authority. The MOPH should not protect its own territory or its own interests, but engage in effective intersectoral actions to address determinants outside its jurisdiction in non-health sectors as required.

8.5 From equity focus to health in all policies

Over the four decades 1970–2010, the stated objectives of the health system and the outcome of its implementation were in favour of health

equity. The four decades of health system development can be classified into two major strands of reform. First, supply-side investment, focusing on rural PHC infrastructure at district level, making it functional by producing adequate health-care workforce and ensuring they serve the rural communities through mandatory rural health service, financial and non-financial incentives. Extensive geographical coverage of functional PHC minimizes geographical barriers.

Second, minimizing financial barriers to health care through expansion of financial risk protection to the target population (Tangcharoensathien et al., 2009). This started with the poor, was then expanded to public- and private-sector employees, and finally to the vast majority engaged in the informal sector, reaching universal health coverage (UHC) in 2002. The poorest quintile used outpatient services disproportionately more (26–28% cf. 8–10%) than the richest quintile during the first decade after UHC reform. To a similar degree, inpatient services were concentrated more among the poor than the rich over the same period. This substantially decreased the incidence of catastrophic health spending and medical impoverishment.

The CSMBS per-capita expenditure is almost four times that of UCS and SHI, largely due to excessive use of medicines on the nonessential drug list, diagnostic and other therapeutic services, especially when the outpatient is paid for on a fee-for-service basis directly disbursed to hospitals. This creates inequity gaps across the three insurance schemes. Current policies concentrate on harmonization of the three public health insurance schemes to minimize the inequity gap.

The recommendations to address social determinants of health were applied in Thailand. Both positive and negative factors that determine health lie in all sectors, hence to achieve the health of the population, one has to ensure that health concerns are captured by all policies, so-called health in all policies. Active movements to reform the health system and support health in all policies started in 2000 by active engagement of civil society groups and academia in drafting the National Health Act. The National Health Act was finally legislated by parliament in 2007, mandating the establishment of the NHCO as a secretariat office. Three main instruments to ensure health in all policies are proposed and implemented: health assemblies, health impact assessment and health statue.

Health and Environmental Impact Assessment is mandatory according to the Constitution of the Kingdom of Thailand 2550 B.E. (2007), Article 67, for projects and activities that may have impact on the community,

environment and health. Despite NHCO successes in mobilizing all partners in the upstream policy development phase, through the adoption of annual National Health Assembly resolutions; at downstream phase, translating the resolutions into effective intersectoral actions is challenging with a mix of results (some successes, some failures). Success factors are ownership and buy-in by the line agencies that are competent enough. Failure factors are the real nature of intersectoral, complex problems and weak government line agencies. Sometimes, possible policy captures are major problems as observed by the civil society organizations –for example, the 2010 National Assembly Resolution on the total ban of chrysotile asbestos (see Chapter 6 for details).

8.6 Lessons learnt

One of the key success factors of health reforms in Thailand is the capacity to generate knowledge/information to support policy formulation. Equally important is the implementation capacity and governmental effectiveness. This capacity was systematically built when the HSRI was established in 1992. A critical mass was built up in close collaboration with international agencies such as London School of Hygiene and Tropical Medicine, and Prince Leopold Institute of Tropical Medicine, Antwerp, Belgium. This critical mass was consolidated with the emergence of the International Health Policy Program (IHPP) and the Health Intervention and Technology Assessment Program (HITAP) under the Bureau of Policy and Strategy of the MOPH, and Health Insurance System Research Office (HISRO) under the HSRI. IHPP, HITAP and HISRO worked productively in both knowledge generation and knowledge translation. Melgaard (2004) describes strong national technical and research capacity that supports evidence-based policy formulation of the country.

Another key success factor is the links between policy entrepreneurs and civil society, which are essential to the success of both upstream and downstream policy development. This is called the “triangle that moves the mountain” theory proposed by Wasi (2000). He says that to overcome a difficulty, three synergistic and interlinked powers are required: (i) wisdom and evidence generated by the researcher constituencies; (ii) civil society movement and public support; and (iii) involvement of the politicians who make the political decisions. Policy entrepreneurs, therefore, have to play a bridging role among the three forces to get the desired decision (Jongudomsuk et al., 2012).

Finally, successful reform approaches from outside the existing organization structure. The failed education reform addressed the organization structure and power positions within the Ministry of Education, creating many problems, especially power conflicts. Health system reforms started from knowledge generation, which was led effectively by HSRI and its partners. HSRI has a degree of autonomy from the MOPH and works in an independent manner. In 2001, when evidence was strong enough and political windows of opportunities widely opened, ThaiHealth was established as a public autonomous agency outside the MOPH. The NHSO, the NHCO and the EMIT were established by legislation as public autonomous agencies drawing on full evidence. NHSO and EMIT are independent bodies with the health minister as chair of their governing bodies, while the prime minister chairs the National Health Commission due to its intersectoral nature of health in all policies.

8.7 Remaining challenges

8.7.1 Ageing society: clear policies on long-term care

Due to mortality and fertility declines and increase in life expectancy, Thailand is becoming an ageing society: the proportion of people more than 60 years reached 13.2% of the total population in 2010; the proportion of people aged 65 years and over increased from 3.1% in 1970 to 8.9% in 2010, an almost three-fold increase. The oldest population cohort (80 years and over) tripled from 0.5 million in 1970 to 1.7 million in 2010.

Older people face several physiological changes, limited physical function, psychosocial changes, and specific health problems, especially long-term chronic illnesses. The projected number of older people with severe to profound dependence would increase from 60 000 and 80 000 men and women in 2009 to 100 000 and 140 000 by 2020 (Srithumrongsawat et al., 2009). Pre-elderly health promotion to maintain a healthy ageing population was adopted as national policy agenda.

The health system in Thailand is organized for acute care, while long-term care (LTC) requires integrated health and social care. Almost all older people in Thailand who need LTC receive informal care provided by their family members or relatives. There is some institutionalized LTC organized by private for-profit organizations, but the costs are not affordable for the majority of people. The National Health Security Board has approved the Strategies for Long-term Care for Dependent Elderly 2014–2018 with an aim to set up LTC systems in communities with the support of local

governments and local health-care facilities, including health centres and community hospitals. The NHSO will support part of the budget, especially for health-care cost to run the system. However, many issues need to be clarified and achieve consensus, including standard of care and living, and scaling up training of caregivers and care managers. The health system also needs to be strengthened, especially at PHC level, to support community-oriented LTC. Shortage of physiologists and occupational therapists is the first priority that needs strengthening. The National Health Assembly in 2009 adopted a resolution endorsing a principle of family- and community-based systems catering for the needs of older people with strong support from and coordination with health and social welfare sectors (National Health Assembly, 2009). It is noted that long-term institutional care is expensive and therefore not accessible by older people who are often poor.

8.7.2 Systematic development of specialized care

Gaps still exist for a systematic approach to strengthen specialized care. Prehospital care is well developed nationwide – a vast majority (71.5%) of citizens have access to hospital-based emergency medical unit within 10 minutes (EMIT, 2011); but emergency units in hospitals need significant strengthening of infrastructure, diagnostic/therapeutic equipment, communication systems, numbers and skill mix of professionals to cope with increasing service demand. There has been limited progress on the primary prevention strategies to bring down the incidence of traffic injuries and mortalities – for example, mandatory use of helmets among motor-cyclists legislated in 1994 was hampered by weak enforcement, as reflected by the low level of helmet use in 2012 (52% and 20% for cyclists and passengers, respectively; average 43%) (Thai Road Foundation, 2013). Drunk driving contributes to mortality, another major issue where slow progresses is noted.

Mental health care should be organized through a network where PHC provides community-based mental health promotion and prevention, such as in schools. PHC has to ensure regular supplies of antipsychotic drugs and adherence to medication with support from families and the community. Strengthening PHC and the referral system are key to the success of effective mental health system development where the major bottleneck is inadequate number of health-care workforce with skills in mental health.

Increased prevalence of chronic disabling conditions results in increased demand for rehabilitation services by an ageing population. Rehabilitation personnel are concentrated in tertiary urban hospitals not reached by the majority of rural people who need care. Increased training capacities, redistribution of rehabilitation personnel and redesigning of community-based and secondary health care are challenges for future reform. Internal brain drain of well-trained limited expertise such as speech therapy from public to private hospitals disrupts and hampers access to care by the majority of patients.

There is no specific organization responsible for the development of palliative care, while there is exponential growth in demand. Palliative care consists of access to opiate medicines, effective pain management and other supportive psychosocial services. Challenges are to strengthen home-based palliative care to give most terminally ill patients access to help.

9 Appendices

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9.2 Useful websites

ASEAN Plus Three UHC Network: <http://www.aseanplus3uhc.net/>

Central Office for Healthcare Information: <http://www.chi.or.th/>

Centre for Health Equity Monitoring, Naresuan University: <http://www.med.nu.ac.th/chem/index.php>

Health Information Systems Development Office: <http://www.hiso.or.th/hiso5/report/sreport.php?m=4>

Health Insurance Systems Research Office: <http://www.hisro.or.th/main/index.php>

Health Intervention and Technology Assessment Program: <http://www.hitap.net/en/>

Health Systems Research Institute: <http://www.hsri.or.th/en>

International Health Policy Program: <http://www.ihppthaigov.net/>

Ministry of Public Health: <http://eng.moph.go.th/>

National Health Commission Office: <http://en.nationalhealth.or.th/>

National Health Examination Survey Office (NHESO): <http://old.hsri.or.th/en/network/537>

National Health Security Office: <http://www.nhso.go.th/eng/Site/Default.aspx>

National Institute of Emergency Medical Services: <http://www.niems.org/>

National Statistical Office: <http://www.nso.go.th/>

Social Security Office: http://www.sso.go.th/wpr/home_eng.jsp?lang=en

Thai Health Promotion Foundation: <http://www.thaihealth.or.th/>

Thai Healthcare Accreditation Institute: <http://www.ha.or.th/>

Thai Nurse Cohort study: <http://www.thainursecohort.org/nu/web/index.php>

Tobacco Control Research and Knowledge Management: <http://www.trc.or.th/en/>

9.3 HiT methodology and production process

HiTs are produced by country experts in collaboration with an external editor and the Secretariat of the Asia Pacific Observatory based in the WHO Regional Office for the Western Pacific in Manila, the Philippines. HiTs are based on a template developed by the European Observatory on Health Systems and Policies that, revised periodically, provides detailed guidelines

and specific questions, definitions, suggestions for data sources and examples needed to compile reviews. While the template offers a comprehensive set of questions, it is intended to be used in a flexible way to allow authors and editors to adapt it to their particular national context. The template has been adapted for use in the Asia Pacific region and is available online at: http://www.wpro.who.int/asia_pacific_observatory/hits/template/en

The most recent template is available online at: <http://www.euro.who.int/en/home/projects/observatory/publications/healthsystem-profiles-hits/hit-template-2010>.

Authors draw on multiple data sources for the compilation of HiTs, ranging from national statistics, national and regional policy documents to published literature. Data are drawn from information collected by national statistical bureaux and health ministries. Furthermore, international data sources may be incorporated, such as the World Development Indicators of the World Bank.

In addition to the information and data provided by the country experts, WHO supplies quantitative data in the form of a set of standard comparative figures for each country, drawing on the Western Pacific Country Health Information Profiles (CHIPs) and the WHO Statistical Information System (WHOSIS). HiT authors are encouraged to discuss the data in the text in detail, including the standard figures prepared by the Observatory staff, especially if there are concerns about discrepancies between the data available from different sources.

The quality of HiTs is of real importance since they inform policy-making and meta-analysis. HiTs are subject to wide consultation throughout the writing and editing process, which involves multiple iterations. They are then subject to the following.

- A rigorous review process consisting of three stages. Initially, the text of the HiT is checked, reviewed and approved by the Asia Pacific Observatory Secretariat. It is then sent for review to at least three independent experts, and their comments and amendments are incorporated into the text, and modifications are made accordingly. The text is then submitted to the relevant ministry of health, or appropriate authority, and policy-makers within those bodies to check for factual errors.
- There are further efforts to ensure quality while the report is finalized that focus on copy-editing and proofreading.

- HiTs are disseminated (hard copies, electronic publication, translations and launches). The editor supports the authors throughout the production process and, in close consultation with the authors, ensures that all stages of the process are taken forward as effectively as possible.

9.4 About the authors

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Patama Vapattanawong is one among very few demographers in Thailand. She received her B.Sc. in Nursing and Midwifery from Mahidol University, Thailand, in 1983; M.Sc. in Community Medicine from Chulalongkorn University, Thailand, in 1993; and Ph.D. in Demography from Mahidol University, Thailand, in 2002. She is now an Associate Professor at Institute for Population and Social Research, Mahidol University, teaching many courses related to Demography such as Technique of Demographic Analysis; Indirect Technique for Demographic Estimation; Advances Demographic Projection; Population, Health and Community Health Services Development. She is keen on using large datasets, particularly birth and death registration databases, to study demographic transition in Thailand. Her research interests are child and old age mortality.

The Asia Pacific Observatory on Health Systems and Policies (the APO) is a collaborative partnership of interested governments, international agencies, foundations, and researchers that promotes evidence-informed health systems policy regionally and in all countries in the Asia Pacific region. The APO collaboratively identifies priority health system issues across the Asia Pacific region; develops and synthesizes relevant research to support and inform countries' evidence-based policy development, and builds country and regional health systems research and evidence-informed policy capacity.



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