

# PRIMARY HEALTH CARE SYSTEMS (PRIMASYS)

*Case study from Thailand*

Abridged Version



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# Primary Health Care Systems (PRIMASYS)

## *Case study from Thailand*

### Overview of the primary health care (PHC) System

Over the past 40 years or so, Thailand's health system requirements have multiplied as the national population has grown, from 37 million in 1970 to 68 million today. As demonstrated in Table 1, despite increasing overall population, the population growth rate has continuously decreased from 3% in 1970 to 0.4% in 2015, largely as a result of an effective family planning programme introduced in the 1970s. As a result of slowed population growth, the proportion of people aged 0–14 years decreased from 45.1% to 19.6% from 1970 to 2010, while the proportion of people aged 65 years and over increased continuously, almost tripling from 3.1% in 1970 to 8.9% in 2010. Rapid population ageing has been influenced both by declines in fertility and in mortality. During this period, the total fertility rate declined from 4.9 births per woman in 1985–6 to 1.5 in 2005–6. As a result of population growth, the population density increased from 67.1 people/km<sup>2</sup> in 1970 to 128.5 people/km<sup>2</sup> 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 is clearly taking place, from 18.7% in 1990 to 43.4% in 2010. By 2015, available data showed that those living in urban areas had increased to 50.4%.

Life expectancy at birth has gradually increased in the country, reaching 70 years for males and 77 years for females in the mid-2000s, with a period of stagnation due to the HIV epidemic experienced in the 1990s. Life expectancy of females exceeds that of males, due to a higher mortality rate among men attributable to accidents, risk-associated work and unhealthy behaviours, though women suffer more with conditions of disability. In 1980, the infant mortality rate (IMR) was nearly 50 per 1000 live births, while the under-five mortality rate (U5MR) was 60. These rates gradually reduced to 11 and 13 respectively by 2010. The maternal mortality ratio (MMR) was also reduced from 42 per 100 000 live births in 1990 to 26 in 2010.

The Thailand economy has also developed over time, as reflected in the increased gross domestic product (GDP) per capita from 700 US\$ in 1970 to nearly 6000 US\$ in 2014, as well as a shift in the income/wealth inequality indicator (Gini coefficient) of 44.2 in 1970 compared to 40.0 in 2010. Total health expenditure (THE) as a proportion of GDP also increased from 3.5% in 1998 to 6.5% in 2014. Changes in THE by financing source have also been observed: Before the Asian economic crisis of 1997, household out-of-pocket payment was the major component of health care spending, but subsequently dropped from 44.5% in 1994 to 12.4% in 2011 due to full implementation of the Universal Coverage Scheme (UCS) in 2002.

The Ministry of Public Health tackles health inequity problems through three major policies: 1) Region-based health services system. The aims of this policy are to facilitate better sharing of related resources within each region not only money but also human resources, information, medicines/technologies, and to strengthen referral across care levels within region toward more efficient services. 2) Health services development plan or 'Service plans', which comprise primary and holistic health care as one of 15 service plans that all of health facilities under the Ministry of Public Health (MoPH) will use as their operation plan and implementation. Goals of this primary care and holistic care service plan include care provision by family care teams and establishment of long-term community care and health promotion for elderly, disabled, and vulnerable groups. 3) District health system (DHS) that calls for multisectoral collaboration in the community using strategic approaches called "U-CARE": Unity district health team; Community participation; Appreciation; Resource sharing and human development; Essential care provision. It is also believed that DHS could become an active participatory model that can harmonize upstream and downstream processes of health services system in Thailand.

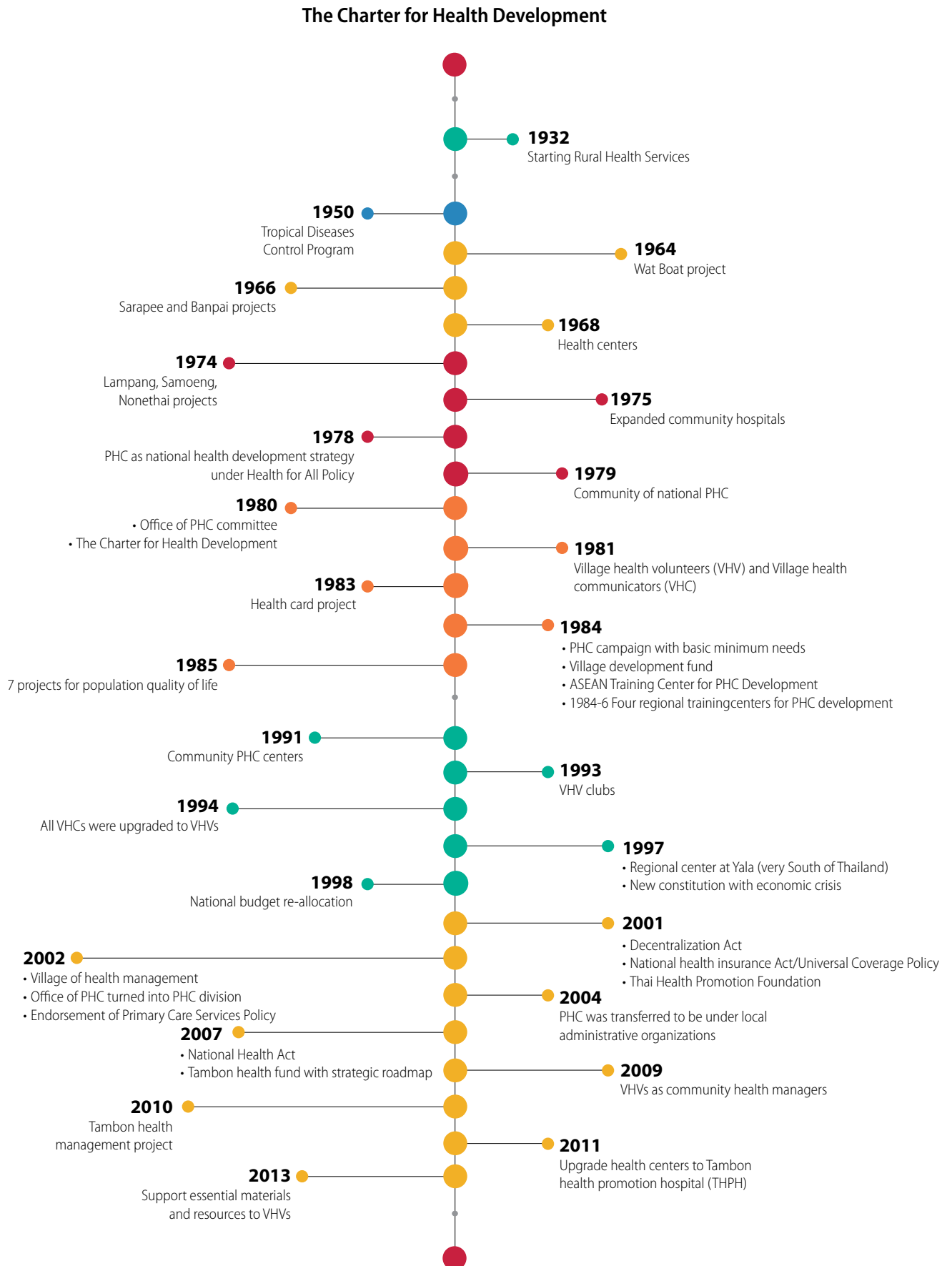
**Table 1. Key demographic, macroeconomic and health indicators in Thailand**

Variable	Results by year		Source(s)
Total population of country (million)	68.147 (2016)		NSO <sup>1</sup>
Sex ratio: male/female	0.967 (2014)		NSO <sup>1</sup>
Population growth rate (%)	0.4 (2015)		NSO <sup>1</sup>
Population density(people/km <sup>2</sup> )	128.5		NSO <sup>1</sup>
Distribution of Population (rural/urban %)	49.6/50.4 (2015)		NSO <sup>1</sup>
GDP per capita (US\$)	5,977.4 (2014)		NESDB <sup>2</sup>
GDP per capita (PPP; US\$)	8120		NESDB <sup>2</sup>
Income or wealth Inequality (Gini coefficient)	40.0		NESDB <sup>2</sup>
Life expectancy at birth (year)	Male	70.6	NSO <sup>1</sup>
	Female	77.4	
Top five main causes of death (ICD–10 classification)	1. Malignant neoplasms (C00–C97) 2. Circulatory diseases (I00–I99) 3. Infectious and parasitic diseases (A00–B99) 4. Chronic respiratory diseases (J00–J99) 5. Transport accidents (V00–V99)		Thai BOD, MoPH <sup>3</sup>
Total mortality rate, adult (per 1000)	Male	204.8	Thai BOD, MoPH <sup>3</sup>
	Female	101.0	
Infant mortality rate (per 1000 live births)	9.504 (2016)		MoPH <sup>4</sup>
Under 5 mortality rate (per 1000 live births)	10 (2014)		World Bank <sup>5</sup>
Maternal mortality rate (per 100 000 live births)	25		World Bank <sup>5</sup>
Immunization coverage under 1 year (%)	Measles 99%, DTP3 90%, Hepatitis B3 46%, Hib3 90% (2013)		MoPH <sup>4</sup>
Total health expenditure as proportion of GDP (%)	7 (2014)		World Bank <sup>5</sup>
Proportion of health expenditure on prevention and public health services	6.2 (2012)		Thai NHA Working Group (2013) <sup>6</sup>
Public expenditure on health as proportion of total expenditure on health (%)	86 (2014)		Thai NHA Working Group (2013) <sup>6</sup>
Out-of-pocket payments as proportion of total expenditure on health (%)	12.4 (2011)		MoPH <sup>4</sup>
	8 (2014)		
Voluntarily health insurance as proportion of total expenditure on health (%)	10.3 (2011)		MoPH <sup>4</sup>
	4.7 (2012)		
Proportion of households experiencing catastrophic health expenditure (%)	3.9 (2009)		NESDB <sup>2</sup>

NSO: National Statistical Office; NESDB: National Economic and Social Development Board; MoPH: Ministry of Public Health; IHPP: International Health Policy Programme; Thai BOD: Thai Burden of Disease; Thai NHA Working Group: Thai National Health Account working group.

- 1 National Statistical Office. (Available at: <http://www.nso.go.th>; accessed 13 February, 2017).
- 2 Office of National Economic and Social Development Board. (Available at: <http://www.nesdb.go.th>; accessed 13 February, 2017).
- 3 Burden of Disease, Thailand. (Available at: <http://bodthai.net>; accessed 13 February, 2017).
- 4 Ministry of Public Health, Thailand. (Available at: <http://www.moph.go.th>; accessed 13 February, 2017).
- 5 World Bank data on Thailand. (Available at: <http://www.worldbank.org/en/country/thailand/research>; accessed 13 February, 2017)
- 6 National Health Account, Thailand. (Available at: <http://ihppthaigov.net>; accessed 13 February, 2017)

**Figure 1. Timeline for PHC Development in Thailand**<sup>4,7,8</sup>

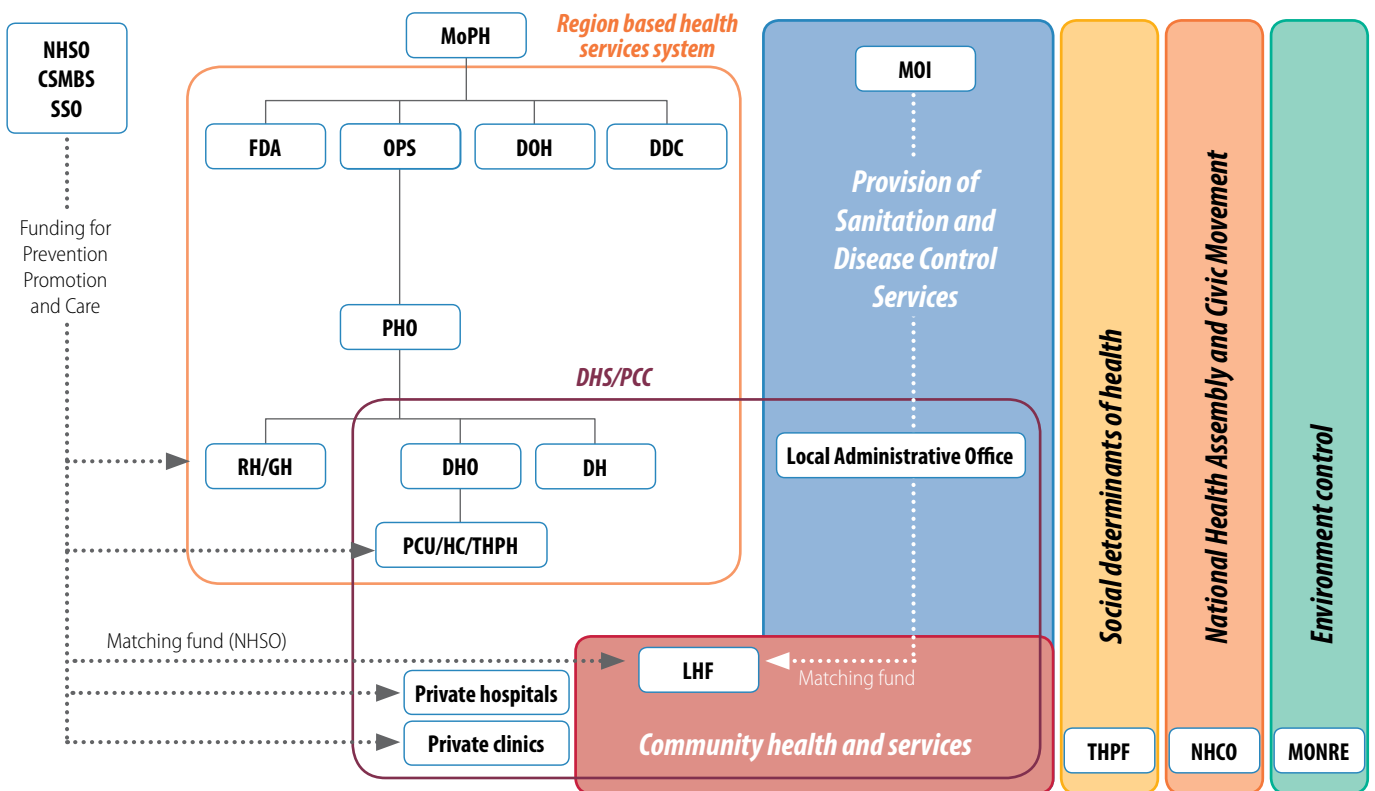


## Governance and primary health care-related infrastructure

The Thailand population are eligible for health services that are covered financially by the main schemes: Universal Coverage Scheme (UCS); Civil Servants Medical Benefits Scheme (CSMBS); and Social Health Insurance Scheme (SHI). Structurally, there is at least one Tambon (sub-district) Health Promotion Hospital (THPH), formerly known as “Health centres”, in each sub-district, which covers and average of approximately 5000 people. At the district level, there is typically at least one district hospital (30–120 beds) covering a population of around 50 000. At the provincial level, general hospitals cover a population of approximately 600 000, and some general hospitals have been upgraded to be regional referral hospitals. At the top level of the system, there are 11 medical school hospitals, five of them located in the capital city of Bangkok. Primary health care (PHC) in Thailand mostly encompasses government health care facilities at all levels.

At present, the Thailand government aims to control total health expenditure and reduce burdens of work at higher levels of health care facilities by strengthening PHC at the community level.<sup>7</sup> Three governance models have been recently implemented: 1) Region-based health services system: 13 regional management offices have been established in order to manage and reallocate available resources effectively and efficiently; 2) District health system (DHS): Health management at the district level in order to effectively coordinate and operate through multisectoral collaboration; and 3) Primary care cluster (PCC): Comprehensive health prevention, promotion and other primary care services are provided through family care teams comprising family physicians and local multidisciplinary teams of health personnel (Figure 2).<sup>8</sup>

**Figure 2. Governance and PHC-related services infrastructure**



(NHSO: National Health Security Office; MoPH: Ministry of Public Health; CSMBS: Civil Servant Medical Benefit Scheme; SSO: Social Security Office; FDA: Office of Food and Drug Administration; OPS: Office of Permanent Secretary; DOH: Department of Health; DDC: Department of Disease Control; PHO: Provincial Health Office; RH/GH: Regional Hospital/General Hospital; DHO: District health office; DH: District hospital; PCU/HC/THPH: Primary Care Unit/Health Centre/Tambon Health Promotion Hospital; LHF: Local Health Fund; DHS/PCC: District Health System/Primary Care Cluster; THPF: Thai Health Promotion Foundation; NHCO: National Health Commission Office; MONRE: Ministry of Natural Resources and Environment; MOI: Ministry of Interior).

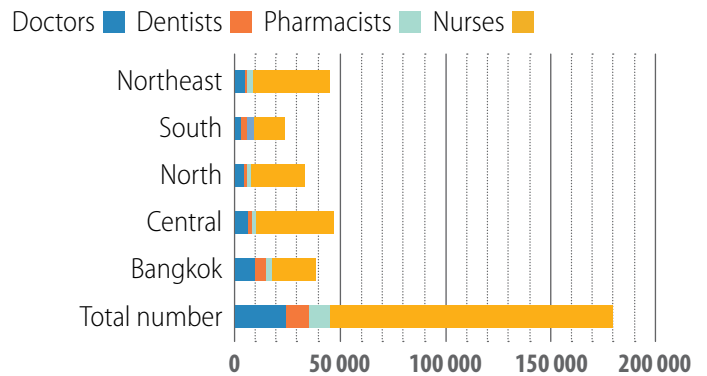
7 The Kingdom of Thailand: Health System Review. Health Systems in Transition (2015); 5(5).

8 The Bureau of Policy and Strategy, Ministry of Public Health. (Available at: <http://bps.moph.go.th>; accessed 13 February, 2017).

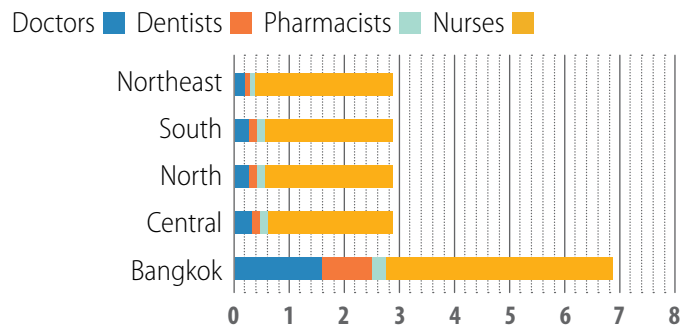
## Human resources

Data on the numbers and distribution of health care workers in Thailand remain unreliable and require urgent measures to strengthen the underlying information system. Available data indicate that the numbers of doctors, dentists, pharmacists and nurses have steadily increased over time. In 2009, there were an estimated 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 government policy since 1996, and in recent years has increased significantly.<sup>9</sup> Concerning distribution of doctors, one third worked in the capital, Bangkok, and only 11% of doctors were in the south of the country. A high proportion of dentists, almost half of all dentists, were in Bangkok and the Central region was second to Bangkok. However, a small proportion of dentists worked in the southern region. Pharmacist and nurse proportions were higher in the Central and the Northeast regions. The health workforce per 1000 population ratio showed that the health workforce was distributed around the capital, Bangkok. On the contrary, the Northeast region – the poorest region – has less health workers compared to the other regions. Especially for doctors and dentists, the density of doctors and dentists working at Bangkok were respectively 7 and 15 times higher than those in the Northeast region. However, the distribution situation has been better for the case of nurses – where the nurse per 1000 population in the Northeast region was close to those of other regions and only 50% of that seen in Bangkok (Figures 3 and 4). Only 18% and 20% of doctors and dentists respectively served the rural areas, making the density of urban areas approximately 5 times higher than that of rural areas. In the case of nurses, the density of nurses in urban areas was almost twice that of the rural areas (Figure 5). More than half of the doctors, dentists and nurses are below 40 years of age. However, approximately a quarter of doctors and dentists are more than 50 years old. The majority of nurses are between 31–40 years of age, and only 10% of them are more than 50 years old. This might be due to the fact that older nurses tend to opt out from nursing jobs as their capacity to provide active care is limited. Focusing particularly on the young health workforce, almost a quarter of all three professions are 30 years of age and below (Figure 6).

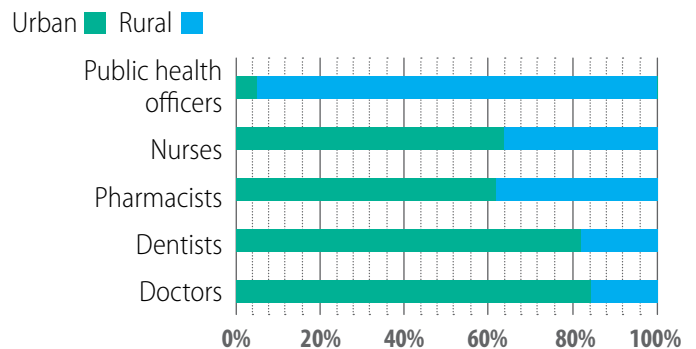
**Figure 3. Regional distribution of health workforces in Thailand, 2010**



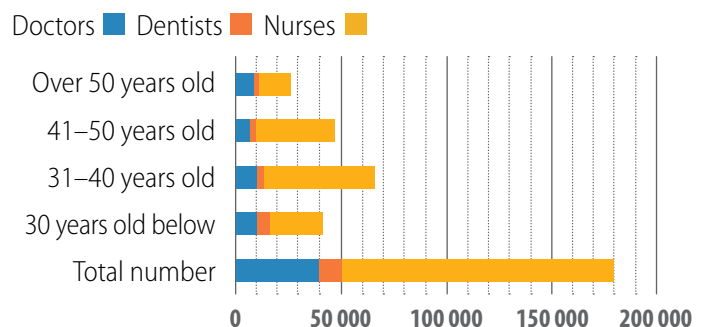
**Figure 4. Number of health workforces in Thailand per 1000 population by region in 2010**



**Figure 5. Proportional distribution of number of health workforces per 1000 population**

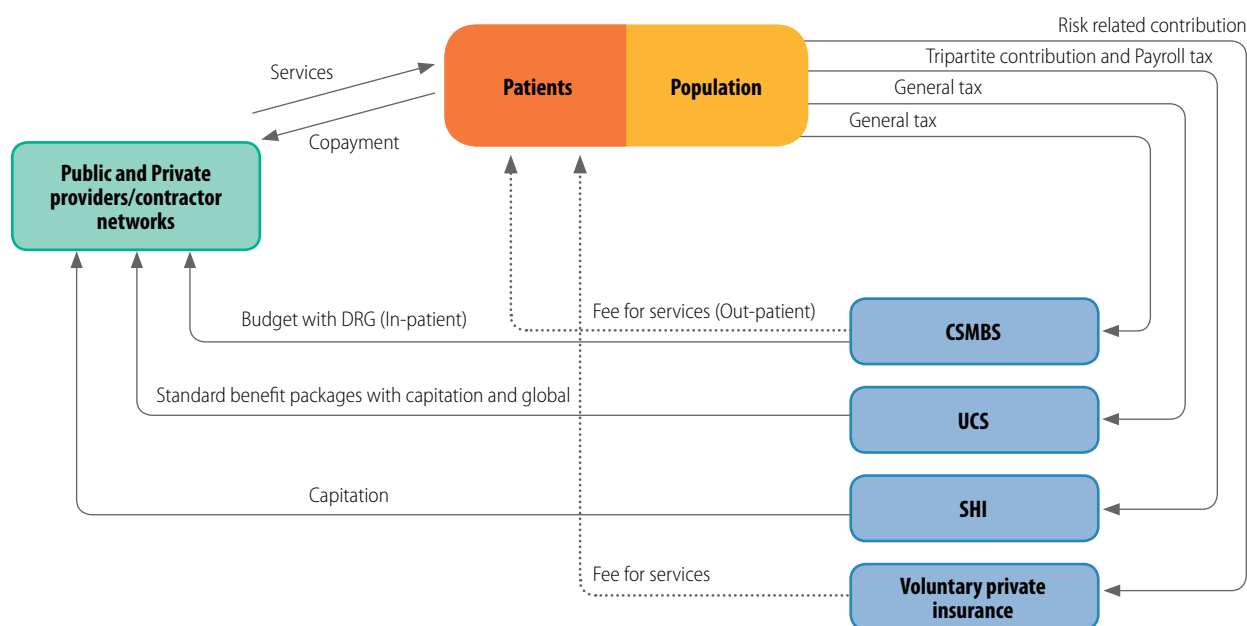


**Figure 6. Age distribution and number of the health workforce in Thailand, 2010**



9 Thailand Health Profile Report (2008–2010). Bangkok: Bureau of Policy and Strategy, Ministry of Public Health, Royal Thailand Government; 2011.

**Figure 7. Financial flows for PHC services in the Thailand health system<sup>7,8</sup>**



(CMBS: Civil Servant Medical Benefit Scheme; UCS: Universal Coverage Scheme; SHI: Social Health Insurance)

## Financing

The Thailand health care system has traditionally been financed by a mixture of health financing sources, namely general taxes, social insurance contributions, private insurance premiums and direct out-of-pocket payments. Health expenditure is income elastic: As seen in the 1997 Asian economic crisis, health spending reduced both by the government and households. The Universal Coverage Scheme (UCS), which was fully implemented in 2002, significantly increased the public share of total health spending, while household out-of-pocket (OOP) payments strikingly decreased. This is because the UCS is financed by general taxes, with a huge coverage of more than 75% of total population. After achieving universal coverage in 2002, there have been three major public insurance schemes providing health insurance coverage for the entire population: 1) The Civil Servant Medical Benefit Scheme (CSMBS) which covers around 5.2 million people, as of early 2010, government employees and their dependents (parents, spouse and children) as well as pensioners; 2) The Social Health Insurance (SHI) scheme, which covers approximately 13.9 million employees, as of early 2016, in the formal sector from non-work related health care expenditures; and 3) The UCS which covers the rest of the population, nearly 49 million people in 2016, and replaces all previous government-subsidized health insurance schemes, namely the Health Card (HC) or Voluntary Health Card (VHC), and the Low Income Card (LIC) scheme for the poor, the disabled, the elderly, and children aged less than 12 years.

PHC in Thailand has been financed by several sources including general taxes, social insurance contributions, private insurance premiums, and direct OOP payments. In recent decades, the public share of THE has significantly increased, while household OOP payments have dramatically declined after the UCS was fully implemented in 2002 (Tables 2 and 3). Overall financial flows are shown in Figure 7.

**Table 2. Health care spending profiles, as percentage of total health expenditure (%)<sup>1</sup>**

Health Spending	1994	2000	2010	2012
Out-patient care	42.6	40.7	42.1	29.2
Ancillary services	0.0	0.1	0.1	0.2
Prevention and public health services	7.1	8.2	10.3	6.2

**Table 3. Health care spending by source, and percentage of total health expenditure (%)<sup>7</sup>**

Health Spending	1994	2000	2010	2012
Government general expenditure	41.7	50.8	66.6	68.4
Social health insurance	2.9	5.3	7.7	7.3
Out-of-pocket	44.5	33.7	14.2	11.6
Private voluntary health insurance	1.8	3.0	5.6	4.7
Traffic insurance	2.4	2.6	2.3	1.8
Employer benefit	6.2	4.0	2.1	1.6



## Planning and implementation<sup>4,7,8</sup>

Under the UCS, primary health care (PHC) is delivered through contracting units for primary care (CUP), which have minimum staffing requirements and comprise networks of a THPH and a hospital. In rural areas, where qualified staff are available only in hospitals, the health centres have to collaborate with the district hospital to constitute a CUP, which often comprises a network of public services in the district. One CUP is equivalent to one district. In urban settings, there could be several hospitals in the same area and doctors in health centres. Each CUP can comprise several health centres plus one hospital, or a group of health centres or even private clinics in order to fulfil the human resources criteria. In private clinics, each facility formulates a CUP with only one PHC unit, and this contracted PHC unit constitutes 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. Secondary and tertiary care is provided by hospitals, mainly on referral up the system (from PHC to district to provincial/regional etc.). For Social Health Insurance (SHI), the patients must go to registered health facility, whereas the Civil Servants Medical Benefits Scheme (CSMBS) offers more flexible options for patients to have access by either electronic payment at registered point-of-care or non-registered health facilities with later reimbursement.

The number of outpatient contacts per person per year increased continuously from 2.0 in 2004 to 3.6 in 2010. In 2009, the figures indicate that PHC services have been provided through 10 347 health centres (HC)/THPH, 17 671 clinics, 992 outpatient departments (OPDs) of public hospitals, and 322 OPDs of private hospitals. All HCs/THPHs are under the MoPH and their main staff are junior sanitarians (i.e. 2 years training) and technical nurses (2 years training). However, after UCS implementation, the numbers of registered nurses (i.e. 4 years training) have increased from 1766 in 2006 to 10 274 in 2011, although shortages of human resources are still encountered in many areas.

Private pharmacies in the community have served the frontline population as a conveniently accessible self-care with affordable OOP expenses, but must be operated by a registered pharmacist. Population health promotion and preventive services in Thailand are mostly provided under the UCS. In addition, the Thai Health Promotion Foundation Fund (THF), financed by additional surcharges on tobacco and an alcohol excise tax, supports social determinants of health activities and is managed by an autonomous public organization. Emergency medical services (EMS) are now effectively universal and fully financed by general tax, both in

relation to pre-hospital and hospital accident and emergency services, with patients able to access the nearest emergency department when necessary. Pre-hospital care is divided into first response, basic life support, intermediate life support and advanced life support. Access to rehabilitation services and assistive devices has increased, but those in urban areas have much greater access than those in rural areas. Dental/oral health services are available in all levels of public health system, although there are still significant regional differences in dentist availability. In Thailand, long-term care and palliative care are culturally considered as family members' responsibility (i.e. spouse, children, and grandchildren). Higher numbers of elderly and those patients in needs of long-term care without access to family-based care are an urgent challenge for state and private care provision, either by home-based supportive services, paid caregivers or through institutional care. More cases in need of human rights protection have also been recently noted.

## Regulatory processes<sup>4,8</sup>

Every health scheme has its own distinct rules and regulations, which make for a complex health care system in Thailand. In 2008, nearly 77% of hospitals were public, mostly owned by the MoPH, and a few by other ministries, while 22% were private, 1% state enterprises and local government facilities. There were 17 671 private clinics, mostly single-practice, and 17 187 private pharmacies in 2009, almost all located in urban municipalities. Each ministry and local government has its own regulation mechanisms for hospitals in its jurisdiction. Private health medical institutions are licensed and re-licensed annually under the *Sanatorium Act 1998 (Medical Premises License Act)* in line with stipulated quality standards. The Bureau of Sanatorium and Art of Healing of the Department of Health Service Support (MoPH) is responsible for overseeing all private health care providers.

## Monitoring and information systems<sup>4,8</sup>

In 2016, a report from the Bureau of the Inspector in the Office of the Permanent Secretary (MoPH) indicated that the weakness of the health information system (HIS) remains a major obstacle, and that it should be strengthened in order to achieve more effective and efficient PHC services. Implementation results from PHC facilities in nongovernmental sectors are lacking and remain relatively disorganized. Health information management is conducted through two sub-systems: those that are population and facility based. The population-based HIS includes household

surveys regularly conducted by the National Statistical Office (NSO), and civil registration. Facility-based HIS includes clinical, health and related management information systems. However, clinical and health information systems require strengthening because registries are scattered among health care facilities and are challenging to link together. With regard to the management information system, facilities within the MoPH have both 12-files and 18-files standard data in the form of electronic databases, but use variable software. As a result, interoperability and exchange of data between health care facilities is limited and can only be readily done for administrative data, especially claim data and a limited number of health service activities.

### Ways forward and policy considerations<sup>4,8,10</sup>

Recent studies (in 2015–6) showed that various primary care services were understood differently by health professionals,

academics and the general public. Surveys among almost 3000 patients under CSMBS and SHI schemes demonstrated that, in general, they expected PHC services to provide six essential services to accommodate their needs: 1) Treatment for general illnesses; 2) Emergency medical services; 3) Health promotion services; 4) Preventive services; 5) Continuous care for chronic diseases; and 6) Rehabilitative services. However, respondents are not concerned whether all services are provided at a single facility or only through traditional health facilities. This raises the question of whether innovative service models are useful in order to make PHC services more culturally appropriate, more efficient, more participatory and, overall, more acceptable and utilized. Some of the considerable challenges facing DHS and PCC implementation, as well as regional-based health service systems, should be closely monitored in response to increasing concerns for health equity, calls for harmonizing benefits among different health schemes, and limited resources in the government sector.

10 Woratanarat T, Woratanarat P, Yamchim N, et al. Primary Care Services System in Urban Setting. Health Systems Research Institute, 2016. (Available at: <http://kb.hsri.or.th/dspace/handle/11228/4457>; accessed 13 February, 2017).

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