NHSO
National Health Security Office

NHSO
Annual Report

Fiacal Year 2018

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Annual Report,
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A Message from the Chair of the National Health Security Board

Thailand's governmental policies have been implemented to increase equitable and inclusive access to quality public healthcare services for citizens from all sectors, utilizing the three health insurance schemes, thereby benefiting the health of people of the Kingdom of Thailand. This is in accordance with the national development goal on human competency and development under the Developing and Strengthening Human Capital Strategy and Social Cohesion and Equity Strategy of the Twenty Year National Strategy B.E. 2561 - 2580 (A.D. 2018 - 2037).

The Universal Health Coverage (UHC) is the health security foundation for the eligible. It increases the efficiency of healthcare's financial management under the principles of "decrease suffering, increase happiness" and "the strong can strengthen the weak, the wealthy can enrich the poor." These principles have been employed and continuously developed for over 16 years; moreover, since 2017, the National Health Security Board has adopted the 4th Strategic Plan of Universal Coverage Scheme B.E. 2560 - 2564 (A.D. 2017 - 2021) as a framework for development and driving the UHC. This strategic plan focuses on the vulnerable group or those who do not have access to essential healthcare services, such as the dependent elderly, the prisoners, the monks, and the underprivileged. In addition, it gives special emphasis on the improvement of both the quality and quantity of health services, efficient management of fiscal budget, the contribution of all stakeholders, and good governance.

The key successes of the Universal Coverage Scheme (UCS) in 2018 were mutual cooperation, mutual brainstorming, and mutual action among the Ministry of Public Health, the major healthcare providers, the Office of National Health Security, health management organizations, and all key strategic players for fiscal budget management and to drive numerous critical activities, such as setting up Primary Care Cluster: PCC, providing health services for the prisoners, strengthening long term care system for the dependent elderly in the community, monitoring and controlling the quality and standard of major health services, kidney replacement therapy for end-stage renal failure patients, increasing the accessibility and administration of essential and high-cost medicines, including expanding cancer screening. In addition, we have received continuous cooperation from both the National Health Security Board and the Health Service Standard and Quality Control Board in driving the UCS continuously.

I would like to express my gratitude to both executive and staff of the Ministry of Public Health, other relevant ministries, the National Health Security Office, health facilities and hospitals from both the public and private sectors, health professional institutes, local governmental organizations, civil society, and other affiliated organizations in the implementation of the government's policies and the National Health Security Board's policies, including their contribution to enhance UCS. As a result, citizens are ensured of accessible standard quality of care according to their needs, and Thailand has a sustainable health services system.

(Clinical Prof. Emeritus
Piyasakol Sakolsatayadorn,M.D.)
Minister of Public Health
Chair of the National Health Security Board

A message from the Chair of the Health Service Standard and Quality Control Board

The Fiscal year 2018 was the third year of the four – year term that the Health Service Standard and Quality Control Board (HSQCB) have been in service since February 2016. I can proudly say that next year, the HSQCB will complete its fourth term.

Over the past three years, HSQCB has accomplished its duties pursuant to Section 50 of the National Health Security Act B.E. 2545 (A.D. 2002), with a goal to realize Section 5 of the National Health Security Act B.E. 2545 (A.D. 2002): for all citizens to have the right to receive standard and effective public health services. Certain performances are harmonized with relevant strategic plans such as the 4th Strategic Plan of Universal Coverage Scheme B.E. 2560 - 2564 (A.D. 2017 - 2021), Strategy No. 2: Ensure quality and adequacy of health services, the Master Plan of Integrated Preliminary Universal Health Coverage Development B.E. 2561-2564 (A.D. 2017-2021) Strategy No. 1: Ensure that the eligible can access health services equally, and the Patients and Personnel Safety Strategic Plan.

The performance of the HSQCB has been focused on creative promotion and development of service quality, including enhancing contribution from all partners by promoting quality development of services in all organizations which had excellent results. In cases of unsatisfactory performances, the HSQCB has encouraged improvement of all relevant mechanisms and set up guidelines for the prevention of repetitive adverse outcomes leading to a reduction of conflicts between the providers and the beneficiaries. In addition, it has been learned that the Sub-committee on Health Service Standard and Quality Control in all 13 NHSO health regions (SHSQC) were crucial mechanisms for local standard and quality control, including rights protection. SHSQC has operated by coordinating with HSQCB and other local subcommittees: the subcommittee on Provincial Petition Diagnosis for Initial Aid, Independent Unit to Receive Complaints, Coordination Center for Civil Health Security,

NHSO Customer Service Center in the Service Facility. In addition, the HSQCB also cooperated with other sub-committees at a local level such as the Sub-committee on Health Security at Health Region, the Committee on Service Plan Development; the working committee on Creating the National Health Security Fund budget-spending guideline under the units of Office of the Permanent Secretary of the Ministry of Public Health (5x5 committee).

Furthermore, the HSQCB has encouraged sustainable and quality control development by integrating and linking with technical institutions, professional councils, professional associations, and civil societies.

The performance of HSQCB for the final year of the 4th term, besides compliance according to the National Health Security Act, will prepare for the next HSQCB and relevant subcommittees to continuously work effectively whilst still maintaining its goal: to provide citizens with access to safe, standard and quality healthcare services, health service providers are satisfied, and the sustainability of the healthcare services system.

Finally, I would like to thank the HSQCB, all sub-committees at the central, local and provincial level, health networks, civil societies and NHSO for supporting and contributing to enhance quality and standards of health services, and to protect rights; consequently, people deserve equitable and standard health services according to the National Health Security Act B.E. 2545 (A.D. 2002)

(Dr. Chatree Banchuen)
Chair of the Health Service Standard
and Quality Control Board

Message from the Secretary–General of the National Health Security Office

The National Health Security Act B.E. 2545 (A.D. 2002) has been in effect since November 19th, 2002, dictating that every person shall enjoy the right to standard and efficient health services, and with it came the National Health Security Office (NHSO) as the state agency with the status of a juristic person under the supervision of the Minister of Public Health. The NHSO manages the Fund in accordance with the rules as prescribed by the Board, HSQCB, and sub-committee with collaboration of relevant organizations from both public and private sectors including social sector, consequently expanding access to necessary health services, enhancing the quality of health service development, increasing efficient management of fund, people and community participation for a sustainable Thailand's Universal Health Coverage.

Under the limitations of the fiscal budget, the process of the Universal Coverage Scheme (UCS)'s benefit package development is very crucial. It must be carefully scrutinized by relevant committees, sub-committees and task forces for efficiency, effectiveness, and value. Today, many benefit packages that cover nearly all necessary health services needed, however, it is also a threat to the sustainability of health financial security. Therefore, various measures have been developed in accordance with the Twenty Year National Strategic Plan for Public Health B.E. 2560-2579 (A.D. 2017-2036) to reduce the cost of treatment such as drug procurement at country level, promotion of "community health services" and "primary care system" including District Health System Development. All of these measures aim to increase the quality of life for all age groups, reduce disease complications, and reduce long-term health expenditure.

In Fiscal Year 2018, the National Health Security Fund had received approval for additional fiscal budget lines totaling 7 fiscal budget lines;

1) Service under capitation
2) Specialized care for HIV/AIDS
3) Specialized care for renal replacement therapy
4) Specialized care for health promotion and disease prevention for chronic diseases.
5) Compensation for remote and at-risk areas
6) Long-term care for elderly.
7) Primary Care Unit with family medicine.

Health services for dependent elderly is an example of integrated policies by relevant stakeholders at ministerial level; the Ministry of Public Health, the Ministry of Interior, the Ministry of Social Development and Human

Security; simultaneously, the local level included health facilities under local administration and municipality, volunteers in the community, Office of the Auditor General of Thailand for revision of rules and regulations according to fiscal guidelines. As for the National Health Security Fund, the Sub-committee on Development of Long-Term Care Plan for Dependent Elderly initiated the Strategic Long Term Care Plan for Dependent Elderly B.E. 2557-2561 (A.D. 2014-2018), which was proposed to the National Health Security Board and the National Elderly Committee for approval in 2013. The approval was followed by the implementation of the pilot project to provide long-term care for the dependent elderly in 11 areas to study the development of tactics and relevant factors for systematic management. Moreover, model development for health services and benefit packages were conducted and researched. Training curriculum for caregiver and care management, database and information system for long-term care of elderly was consequently developed. Finally, budget allocation for long-term care of dependent the elderly funds was set up in 2016. In 2018, there was a cumulative number of 211,118 dependent elderly, and 5,640 local administration organizations have joined this project.

The successes of other performances under the National Health Security System also required integrated collaboration from every stakeholder, especially those related to Social Determinants of Health, (SDOH), such as chronic diseases, risk group, HIV/AIDS, monks, prisoners, or vulnerable group to increase access to healthcare; the success relied on the unanimous collaboration from all stakeholders for the management of dependent elderly.

On this occasion, I would like to express my gratitude to all the relevant sectors that support and drive the UCS forward according to the concept of "Universal Health Coverage (UHC) and Good Health and Well-Being, one of the goals of Sustainable Development Goals or SDGs. As a result, people are healthy and they can access necessary and quality health services without having to face financial catastrophe resulting in Thailand being accepted at a global level.

Sakchai Kanjanawatana.

(Dr.Sakchai Kanjanawatana)
Secretary-General
National Health Security Office

Executive Summary

The National Health Security Board and the Health Service Standard and Quality Control Board have embarked on the fourth National Health Security Strategic Development Plan (2017-2021) to ensure that *every Thai citizen in the Kingdom of Thailand is assured of access to quality care without undue financial hardship.* Their mission is guided by three principles: 1) accessible services; 2) financial sustainability; and 3) good governance.

The government budget for the 48.797 million Thais under the Universal Coverage Scheme (UCS), including additional appropriations, totaled to 175,559.7975 million baht (6.05% of the national budget), of which health-worker salary accounted for 44,840.5392 million baht (26% of the UCS fund) while policy implementation by central and branch offices accounted for 1,376.87 million baht (0.78% of the UCS fund).

The 2018 performance is summarized as follows:

1. Financial coverage

A total of 131,104.40 million baht (99.87% of the UCS fund, excluding health-worker salary), was used to commission healthcare services.

2. Population coverage

Of the 47.84 million Thais eligible for UCS, 47.80 million (99.92%) were signed up at health facilities.

3. Health facilities

12,151 health facilities on the UCS registry comprised of primary care units (11,587), specialty units (1,331) and referral units (1,355). Nine primary care units, six specialty units, and 23 referral units have joined the list in 2018.

4. Service Coverage

Services	Targets	Outputs	Performance (% of target)
1. Services under capitation			
1.1 Outpatient and inpatient services			
- Outpatient services (million visits)	164.590	184.556	112.13
- Outpatient services rates (per case per year)	3.373	3.845	113.99
- npatient services (million visits)	5.856	6.220	106.22
- Inpatient service rates (per case per year)	0.120	0.127	105.83

Services	Targets	Outputs	Performance (% of target)
1.2 Special services			
- Thrombolytic therapy for STEMI patients (visits)	4,058	4,726	116.46
- Thrombolytic therapy for stroke patients (visits)	4,158	4,844	116.50
- Cataract surgery (visits)	120,000	124,705	103.92
- Lens replacement (cases)	591	479	81.05
- Heart transplantation (cases)	94	84	89.36
- Liver transplantation (cases)	205	268	130.73
- Stem-cell transplantation (cases)	50	56	112.00
- Knee surgery (visits)	12,000	9,577	79.81
- Blood transfusion and iron-chelating therapy for thalassemic patients (cases)	12,381	12,401	100.16
- Palliative care (cases)	15,390	16,814	109.25
1.3 Health promotion and disease Prevention			
- Influenza vaccinations for targeted populations (cases)	3,400,000	2,661,542	78.30
- Dental implants for the elderly (cases)	40,000	43,069	107.67
1.4 Disability service			
- Assisted disability aids (cases)	33,247	28,360	85.30
- Rehabilitative care (cases)	864,103	1,019,639	118.00
1.5 Thai traditional medicine			
- Traditional Thai herbal massage (visits)	4,109,849	4,482,707	109.07
- Herbal medicines (prescriptions)	7,390,460	8,161,087	110.43
1.6 Medicine and medical supplies			
- Essential, high-cost medicines (cases)	38,024	33,393	87.82
- Orphan drugs/antidotes (cases)	7,099	5,312	74.83
2. Specialized care			
2.1 HIV and AIDS			
- Antiretroviral therapy (cases)	224,400	72,500	261,930
- HIV/AIDS prevention for at-risk population (cases)	77,589	116.72	107.02
2.2 Renal replacement therapy: CAPD, HD and KT (cases)	52,976	57,288	108.14
2.3 Secondary prevention for diabetic and hypertensive patients (million cases)	2.9072	3.9819	136.97
2.4 Community care for chronic psychiatric patients (cases)	10,250	10,389	101.36
2.5 Long-term care for dependent elderly (cases)	193,200	211,138	109.28
2.6 Outpatient services by Primary Care Cluster team (visits)	652,173	332,968	51.06
2.7 Compensation for remote and at-risk areas in Southern border provinces (health units)	175	202	115.43

Executive Summary

5. Service quality

5.1 Accreditation (in collaboration with the Hospital Accreditation Institute)

Of the 1,064 referral units, 847 were certified (79.6%).

5.2 Satisfaction

93.91% of beneficiaries, 70.67% of providers, and 90.01% of partner agencies gave the highest satisfaction score, respectively.

6. Consumer protection

6.1 Inquiries, complaints, petitions and referrals

Beneficiaries and providers can make inquiries, lodge complaints and file petitions through various channels including the 1330 hotline, letters, fax, e-mails and in-person communication. There were 930,302 such contacts made in 2018.

6.2 Compensations

Of the 970 petitions from beneficiaries, 755 received compensations. Of the 511 petitions from providers, 427 received compensations.

6.3 Partner networks

To ensure due process as stipulated in Article 50 (5), 885 facilitation centers and 156 coordination centers are available in health facilities across 77 provinces, while 122 independent complaint units are located across 77 provinces.

7. Participation from non-health sectors

7,738 local administrative organizations out of 7,776 nationwide contributed to the local fund for public health activities aimed at the most vulnerable such as schoolchildren, the elderly, the disabled and patients with chronic illnesses. The total amount of 3,957 million baht were derived from three main sources: 2,512 million baht from the UCS fund (63.48%); 1,430 million baht from local administration offices (36.14%); and 15 million baht from communities (0.38%).

8. Challenges

8.1 Raise public awareness of the necessity to improve the efficiency and effectiveness of fund utilization through the appropriate use of medical interventions, application of empirical data to policy decisions, and continuous monitoring and evaluation of policy implementation;

8.2 Nurture partnership and cooperation from all sectors for active engagement and mutual accountability;

8.3 Expand coverage to vulnerable groups such as the homeless, ethnic minorities and people who are unaware of their rights to health services;

8.4 Prioritize health promotion and self-care;

8.5 Strengthen long-term care; and

8.6 Align UCS policies with the national healthcare reform and national strategy to ensure the most cost-effective and beneficial service coverage and financial risk protection for all population groups and schemes.

10 Major achievements in Fiscal Year 2018

1. NHSO received Revolving Fund Award

In 2018, the NHSO received two of the six Revolving Fund Awards from the Comptroller General Department, the Ministry of Finance. The two awards reflected the success of NHSO through the "Excellent Performance Award" and "Excellently Efficient Management Award."

2. The National Health Security Fund received an additional budget allocation

The cabinet approved per capita budget allocation for 2019, according to NHSO, at the proposed amount of 181,584,093,700 baht of which the per capita is 3,426.56 baht/individual, an increase of 143.45 baht/population compared to the fiscal year 2018. The National Health Security Board had issued the policy on adjusting guidelines of in-patient expenses with an annual minimum payment of 8,050 baht according to the adjusted RW and to also reduce in-patients overcrowding by adjusting the reimbursement for one-day surgery. According to the disbursements of 11 disease groups (January-September 2018), 2,176 patients received services whilst reducing in-patient LOS by 3,826 days.

3. Increase the benefits of drugs and a colostomy bag

In FY 2018, the National Health Security Board approved the rights of necessary medical equipment as it had increased accessibility to treatments as follows: List E (2) {(National List of Essential Medicines E (2)}, Raltegravir, an antiretroviral medication, used to prevent HIV transmission from mother to child, Bevacizumab for the treatment of central retinal vein occlusion (CRVO), 2 hormone depressants: Leuprorelin 11.25 mg inj., and Triptorelin 11.25 mg inj. for treatment of central precocious puberty, Genotyping for HLA before carbamazepine therapy in epilepsy patients.

Increasing the colostomy bag benefit package for colostomy patients was as a result of the cooperation with PTT Global Chemical Public Company Limited or PTTGC, Faculty of Medicine, Prince Songkla University, and Plastics Institute of Thailand for research and development of the Compound LLDPE containing special characteristics such as deodorization, waterproof and can be used for the production of colostomy bag including reducing imports. This innovative colostomy bag was by Thai people for Thai people.

4. Proactive care for vulnerable groups

In Fiscal Year 2018, the NHSO, together with relevant organizations, expanded healthcare coverage;

Mani Margin Group, an indigenous group located in the southern part of Thailand had received assistance from the Department of Provincial Administration in collaboration with the NHSO Region 12 Songkla. This helped 313 of 500 Mani to achieve Thai status, obtain an identification card, and UCS registration.

Inmates: The NHSO, together with the Department of Correction and the Ministry of Justice signed the Memorandum of Understanding (MOU) to ensure that inmates can receive healthcare services under the UCS. The relevant organizations enrolled eligible inmates into the system allowing them access to screening services, treatment and rehabilitation services. The UCS also allocated a budget to provide access to healthcare and referral units in relation to the MOU.

Monks: NHSO region 13, Bangkok conducted a survey of monks and registered those that were eligible to the UCS. Additionally, the office collaborated with the National Health Security Fund at the local level to ensure the appropriate management.

5. NHSO and Social Security Office (SSO) partnership increases health promotion and disease prevention in FY 2019.

In 2018, the NHSO partnered with SSO to expand coverage in the prevention and promotion program by drawing on the resources of 78 private hospitals registered under the SSS (Social Security Scheme); 48 of which are not under the UCS. The project is an important step in reducing inequality in healthcare by harmonizing the three main public health schemes in Thailand. In the Fiscal Year 2018, the NHSO adjusted payment mechanisms for disease prevention and health promotion in accordance with the Fee Schedule in 8 areas: antenatal care, thalassemia anemia in pregnant women and husbands, Down Syndrome screening during pregnancy, Thyroid hormone deficiencies in a newborn, intrauterine contraceptive device/implant contraception for teenagers (16-20 years), unwanted pregnancy in adults (20-59 years) and screening for cervical cancer in women aged 30-59 years old.

6. 10-year Achievement of peritoneal dialysis.

Peritoneal dialysis has been introduced in the UCS since FY 2008, and upon completing a decade, six relevant organizations such as the Nephrology Society of Thailand, Ministry of Public Health, National Health Security Office, Thai Nephrology Nurses Society, Thai Pediatric Nephrology Association, and Thai Dietetic Association held a meeting called “A Decade of Peritoneal Dialysis Quality Development.” Peritoneal dialysis helps increase quality of life, reduce admission rate and mortality rate of end-stage chronic renal failure patients as mortality rate is less than 9.2% per year. Today, we have overcome all obstacles such as management, attitude, budget, and all chronic renal failure patients have access to health services.

7. WHO appreciated with Thailand’s UHC

The UHC was first implemented in Thailand over 17 years ago. It provides both accessibility to, as well as reducing financial hardship from, healthcare expenditure. Its success has been recognized nationwide and lessons learnt have been shared internationally. As a consequence,

many high-ranking international executives have visited Thailand to study the workings of Thailand's healthcare system. These include:

Dr.Tedros Adhanom Ghebreyesus, Director-General of World Health Organization (WHO), visited Thailand and gave praise in "Achieving Universal Health Coverage: from the past to the future" to ambassadors and representatives of international organizations at the Ministry of Foreign Affairs. He also visited the peritoneal dialysis patients in Soi PraJen, Bonkai community, Lumpini subdistrict, Pathumwan District, Bangkok. The Director-General has said that Thailand's UHC is an inspiration that proves sustainable, affordable healthcare is achievable in all countries worldwide. The WHO agreed that Thailand has an outstanding UHC system.

Dr. Daniel Kertesz, WHO Representative to Thailand, visited Bueng Yitho Medical and Rehabilitation Center at Bueng Yitho Municipality, Thanyaburi district, Pathumthani, to observe the success of this facility in providing health services both at OPD and home visits in communities. He admired the collaboration of NHSO and local administrative organization for health promotion budget and the people center policy.

Clinical Prof. Emeritus Piyasakol Sakolsatayadorn, Minister of Public Health and Chair of the National Health Security Board, together with Dr.Sakchai Kanjanawatana, Secretary-General, National Health Security Office, took Dr. Daniel Kertesz, WHO Representative to Thailand, and team to meet with General Prayut Chan-o-cha, Prime Minister of Thailand and report the progress of "Health for All" on the occasion of "World Health Day" on 7th April; also and annual occurrence. General Chatchai Sarikulya, Deputy Minister, also visited and inspected the exhibition in advance. General Prayut stated that today, the world applauds Thailand's policy on Universal Health Coverage with the coverage of 99.9% except for newborn children. Thailand's challenge now is only to provide complete coverage, equity and reduce inequality in our health services system.

Dr. Soumya Swaminathan, Deputy Director-General of WHO, visited Namphong Community Hospital and Saard Subdistrict Municipality in Nam Phong District, Khon Kaen Province. She explored health insurance and health services in rural areas, visited end-stage renal failure with peritoneal dialysis at home.

8. IMF consulted with NHSO to retrieve Thailand's health insurance data for economic evaluation in this region.

National health insurance not only helps Thai citizens access health services but also affects household's and the country's economics because it reduces household's health expenditure, increases quality of lives and income. As a result, Mr.Manrique Saenz, senior economist, International Monetary Fund (IMF), Mr.Yiqun Wu, economist, Asia and Pacific Department (APT) APD, and Mr.Kaweevudh Sumawong, senior

consultant, Southeast Asia Voting Group Office of the Executive Director visited NHSO and requested health insurance information for annual economic evaluation of IMF in this region.

The IMF is interested in Thailand's UHC, NHSF, SSF, CSMBF, specifically, their effects on macroeconomics such as expense behavior, consumer behavior, saving behavior both before and after the introduction of health insurance.

9. Universal Health Coverage Day 2018 "Investing in Health, Never Leaving Anyone Behind"

The United Nations Assembly has resolved that every 12 December be "the Global UHC Day". UN requests all nations drive universal health insurance to achieve SDGs in 2030. In this year, WHO raised the issue of "UNITE FOR UNIVERSAL HEALTH COVERAGE" and asked member states to drive health insurance systems in their countries.

Even though Thailand has achieved universal coverage insurance, driving for continuous sustainability is still needed. Thailand held UHC Day under the theme "Investing in Health, Never Leaving Anyone Behind". This is aimed at every sector to prioritize investing in health for economic development. This is the collaboration among MoPH, Ministry of Foreign Affairs, Comptroller's General Department, Office of Social Security, and NHSO

10. Thailand sent Botulinum Antitoxin to help patient in Nigeria

NHSO received a request from WHO to help 2 patients in Nigeria suffering from botulinum toxin. With efficient collaboration among NHSO, Government Pharmaceutical Organization (GPO) and others, the two patients in Nigeria received 4 vials botulinum antitoxin on January 15, 2018, 3 days after the NHSO was contacted by the WHO; the two patients have survived.

It is evident that the health insurance system helps Thai citizens access essential medicine under the UC Fund. NHSO also has collaborated with Ramathibodi Poison Center to develop a system to help increase accessibility to orphan drugs and anti-poison drugs not only for Thai citizens but also other countries such as the case of Nigeria.

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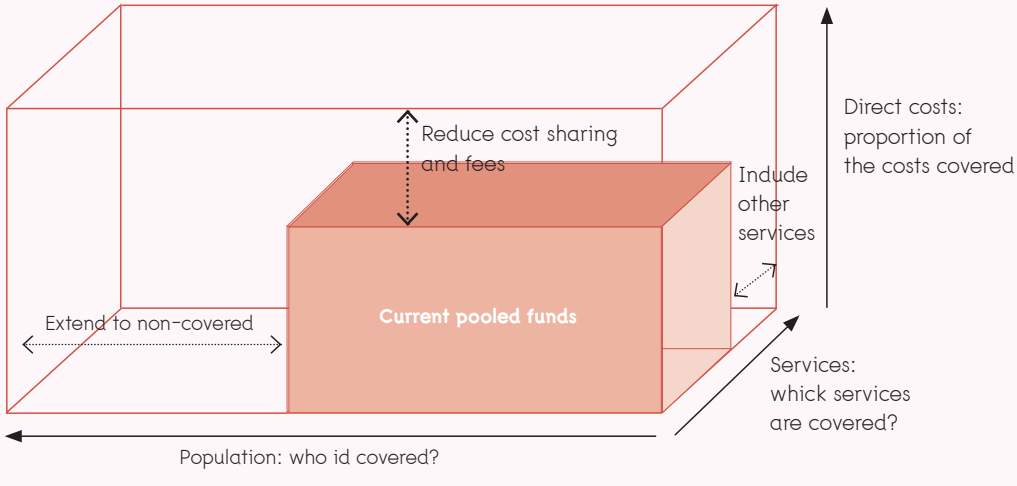
Conceptual Framework of the Universal Coverage Scheme

The Universal Coverage Scheme (UCS) has been developed based on rights for all Thai citizen to have access to essential and quality health services whilst preventing financial catastrophes. In this regards, there must be available governmental financial strategies to protect families' financial obligations and bring equity to the poor who cannot afford expensive health services. The World Health Organization recommends expanding Universal Health Coverage with 3 dimensions. (Diagram 1)

1) Expanding UHC for population coverage
2) Expanding UHC for services coverage
3) Expanding UHC for cost coverage

Diagram 1 The Three dimensions of expanding Universal Coverage Scheme



Three dimensions to consider when moving towards universal coverage

Source: WHO.Universal coverage - three dimensions [online]. [cited 2019 Feb 7; Available from:URL: https://www.who.int/health_financing/strategy/dimensions/en/

Universal Health Coverage is incorporated into one of 17 Sustainable Development Goals (SDGs), a global community unanimous agreement of developmental projects, and the 3rd SDGs being to ensure health and well-being for all at all ages as specified in the Target 3.8 Achieve UHC, including financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all. (Diagram 2)

Diagram 2 Sustainable Development Goals: SDGs

Source: https://www.undp.org/content/undp/en/home/sustainable-development-goals.html 71 Sustainable Development Goals (SDGs) by the United Nations source of picture: UN Thailand

Part 2

Universal Coverage Scheme Overview

1. Financial Coverage

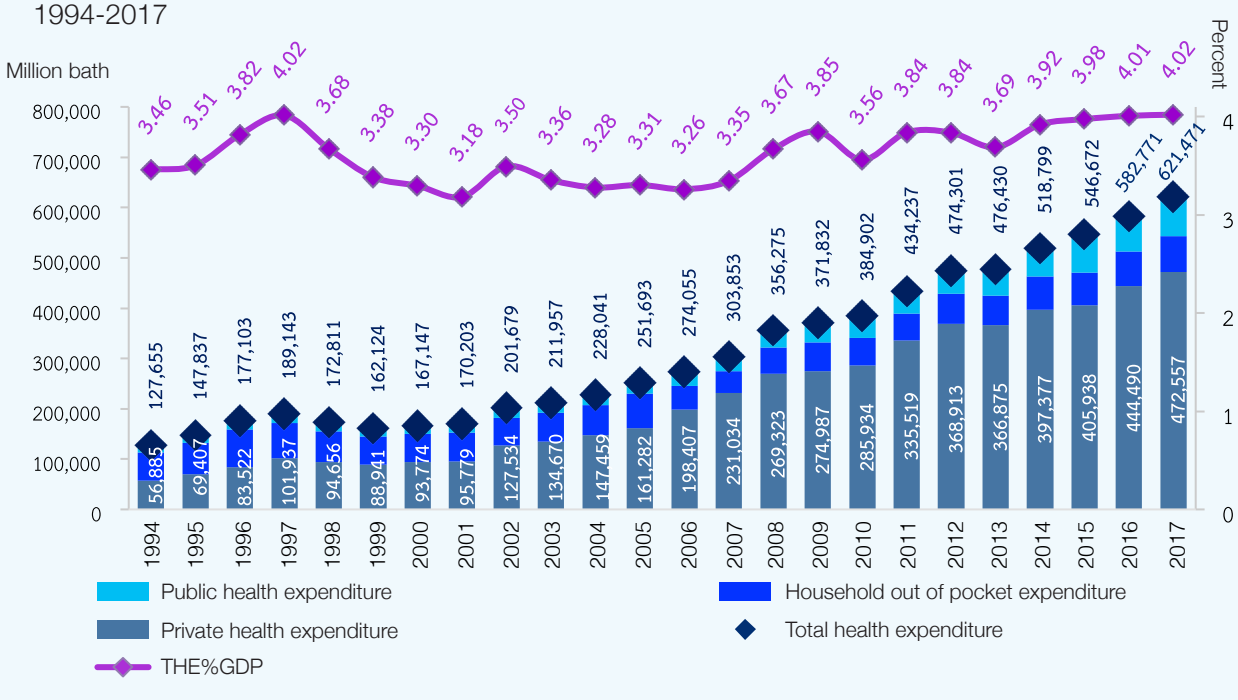
1.1 Health Financing

Financial sustainability in healthcare refers to the financial sources consisting of funds, contribution budget and household expenditure within the vision where countries, governments, and households can have long-term, investments in healthcare with budgets for all citizen to have access to health services including medicine and necessary medical technologies. Hence, preventing households' impoverishment from health expenditures.

The major indexes used to monitor and evaluate the situations and trends of health expenditures including amount of healthcare resources consumed both by the public and private sectors are comprised of *(1) Total Health Expenditure (THE) must be no less than 4.6% and no more than 5% (2) General Government Health Expenditure (GGHE) per General Government Expenditure (GGE) must be no less than 17% and no more than 20% (3) the incidence of households faced with catastrophic health expenditure must be no more than 2.3%, and (4) Household faced with health impoverishment must be no more than 0.47%.*

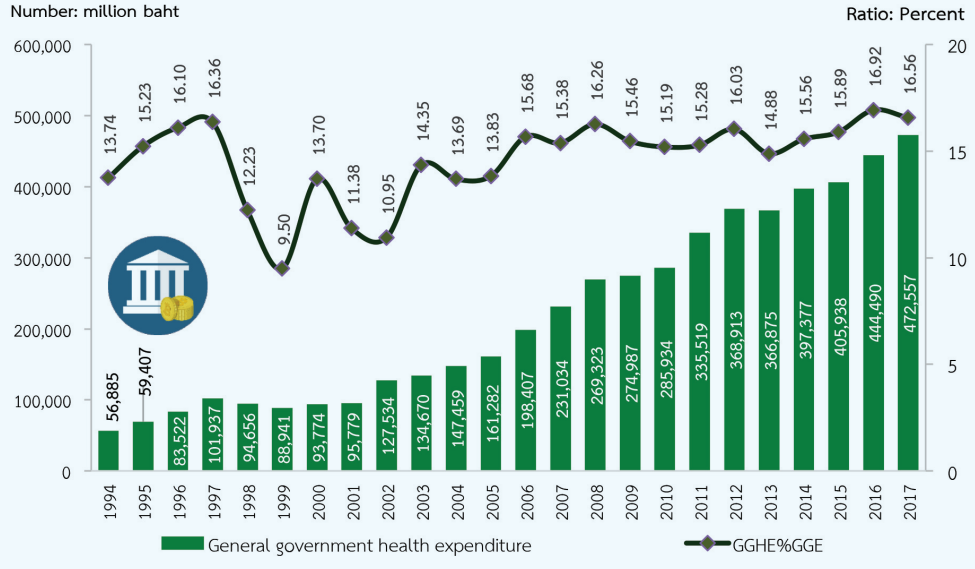
It was evidenced that the Total Health Expenditure (THE) has continuously escalated from 127,655 million baht in 1994 to 621,471 million baht in 2017; when compared to GDP, it was between 3.18-4.02 % in 2017 (Figure 1), and GGHE per GGE was between 9.50 – 16.92%, both of which were below the criteria (Figure 2).

Figure 1 Ratio of Total Health Expenditure (THE) to Gross Domestic Products (GDP), Fiscal Year 1994-2017



Source: National Health Account 2015, International Health Policy Program (IHPP), Ministry of Public Health (MoPH)
Note: Data from 2016-2017, which was the estimated health expenditure

Figure 2 Ratio of General Government Health Expenditure (GGHE) to General Government Expenditure (GGE), Fiscal Year 1994-2017

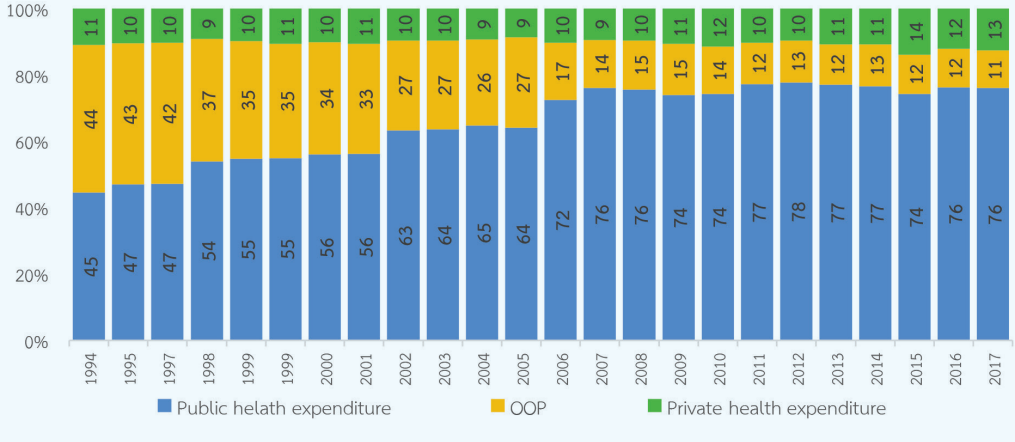


Source: National Health Account 2015, International Health Policy Program (IHPP), MoPH
Note: Data from 2016-2017, which was the estimated health expenditure

Upon consideration of the ratios of Public health expenditure to Out of pocket (OOP) and to Private health expenditure, it revealed that the ratio of public health expenditure has increased continuously from 45% in Fiscal Year 1995 to 76% in 2017 or increased from 56,885 million baht to 472,557 million baht (8.31 fold increase).

Conversely, the ratio of OOP has decreased continuously from 44% in 1995 to 11% in 2017 as a result of all Thai citizens being entitled to the UHC without the burden of payment. (Figure 3)

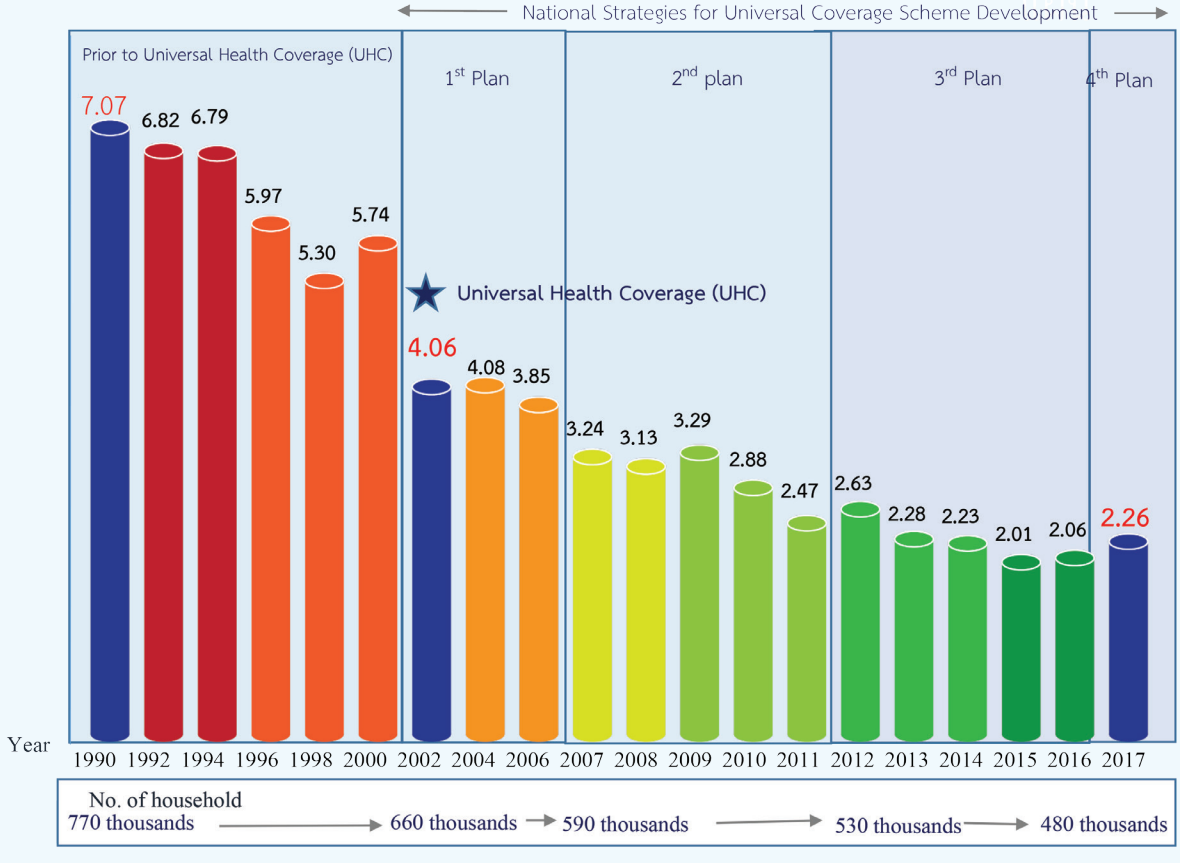
Figure 3 Ratio of government health expenditure to household expenditure and to private sector's expenditure, Fiscal Year 1994-2018



Source: National Health Account 2015, International Health Policy Program (IHPP), Ministry of Public Health
Note: Data from 2016-2017, which was the estimated health expenditure

In regards to the Household Health Expenditure, the data from Household Socio-economic Survey by The National Statistical Office revealed that households faced with catastrophic health expenditure (out of pocket health expenditure more than 10% of total out of pocket expenditure) had declined continuously from 7.07% (770 thousand households) in 2010 to 2.26% (480 thousand households in 2017, which was less than the target of 2.3% (Diagram 3). For household impoverishment, households above poverty line crossing the poverty line becoming poor post-healthcare payment, it has declined from 2.34% (250 thousand households) in 1990 to 0.24% (520 thousand households) in 2017, which was lower than the criteria of 0.47% (Diagram 4).

Diagram 3 Percentage of households with catastrophic health expenditure, Fiscal Year 1990 -2017

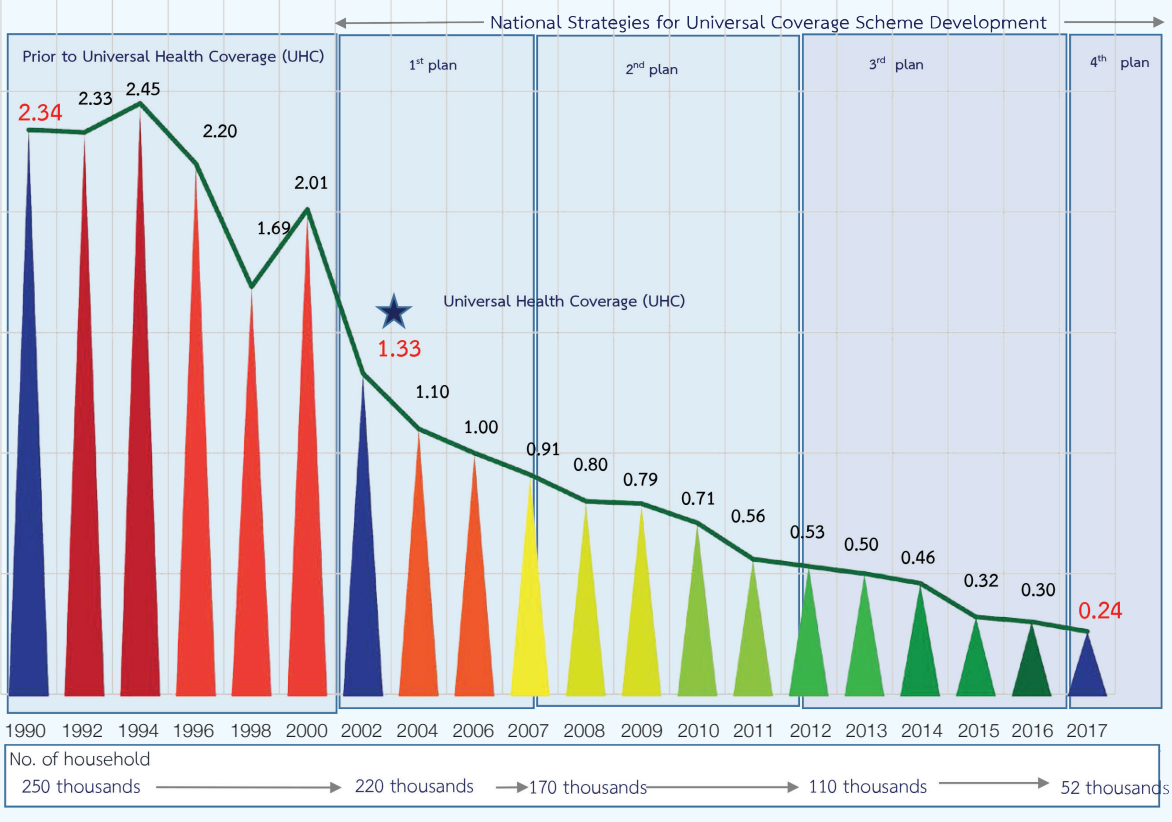


Source: *Household Socio-economic Survey by The National Statistical Office 1990-2017, analyzed by Dr. Supon Limwattananonta*

Notes: 1. *Calculated from household with out of pocket health expenditure more than 10% of total out of pocket Expenditure.*

2. *As of 2006, the National Health Statistic Office conducts the household socio-economic survey (household expenditure) every year.*

Diagram 4 Percentage of households with Health impoverishment, Fiscal Year 1990-2017



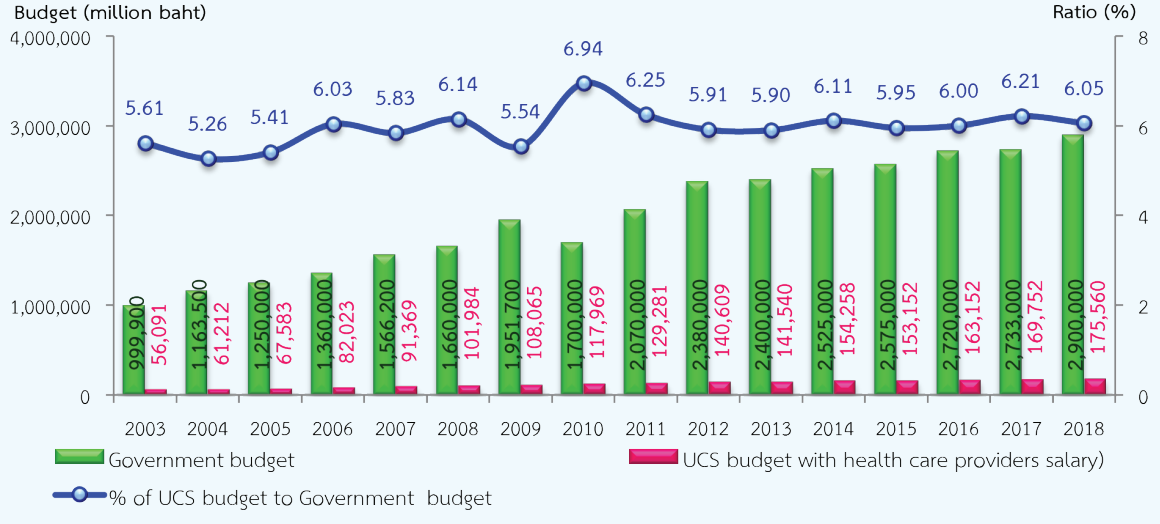
Source: *Household Socio-economic Survey by The National Statistical Office 1990-2017, analyzed by Dr. Supon Limwattananonta*

Notes:
1. *Calculated from household with out of pocket health expenditure more than 10% of total out of pocket expenditure.*
2. *Updated by recalculating and using poverty line from the annual survey of the National Health Statistic Office.*
3. *As of 2006, the National Health Statistic Office conducts the household socio-economic survey (household expenditure) annually.*
4. *The poverty line in 2017 was calculated from the poverty line in 2016 by adjusting with Customer Price Index: CPI in 2017*

1.2 The Budget of the National Health Security Fund.

The ratio of the National Health Security Fund budget to total government budget from 2003 – 2018 was quite consistent or with a minimum increase within a range of 5.26% to 6.94% in FYs 2004 and 2010. (Figure 4)

Figure 4 National Health Security Fund compared to the Government budget, Fiscal Year 2003-2017

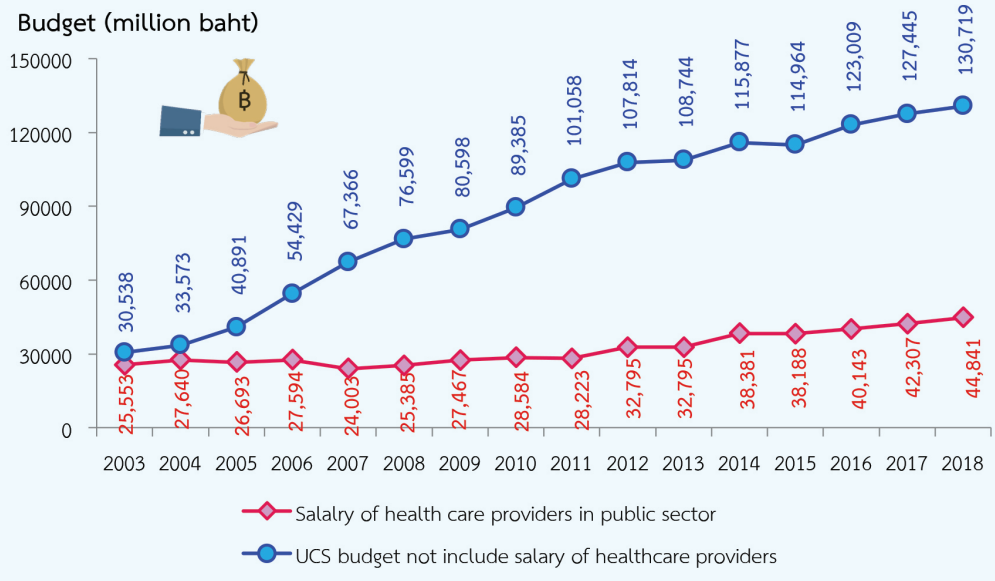


Source: Notification of the National Health Security Board Re: Performance and Management Criteria of the National Health Security Fund for beneficiaries.

Note: The Fund received additional appropriations 2003-2006 in the amount of 5,000 million baht, 3,845.33 million baht, 4,993.33 million baht, and 14,761.83 million baht respectively. Moreover, during 2017-2018, the cabinet approved central budget, emergency or necessity reserve to compensate public health services of the Ministry of Public Health in the amount of 3,979.41 million baht (excluding salary 1,000 million baht), and 4,186.13 million baht (excluding medical compensation 1,000 million baht) respectively.

In the Fiscal Year 2018, the National Health Security Fund (NHSF) was approved a budget in the amount of 175,560 million baht for 48.797 million beneficiaries under UCS. The total fund was divided into 2 parts: 1) Public salary in the amount of 44,841 million baht, which was 1.75 fold increase of FY 2003 and 2) Health services expense in the amount of 130,719 million baht, a 4.28 fold increase of Fiscal Year 2003. (Figure 5) (Diagram 5) (Table 29 in appendix 5)

Figure 5 Budget of the National Health Security Fund, Fiscal Year 2003- 2018

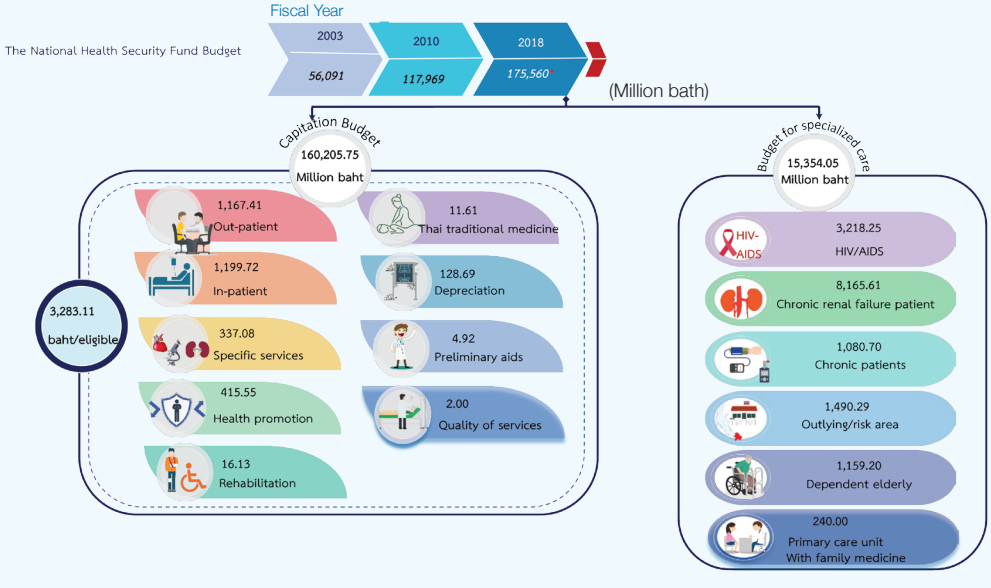


Source: Notification of the National Health Security Board Re: Performance and Management Criteria of the National Health Security Fund for beneficiaries

Notes: 1. *The Fund received additional appropriations 2003-2006 in the amount of 5,000million baht, 3,845.33 million baht, 4,993.33 million baht, and 14,761.83 million baht respectively. Moreover, during 2017-2018, the cabinet approved central budget, emergency or necessity reserve to compensate for public health services of the Ministry of Public Health in the amount of 3,979.41 million baht (excluding salary 1,000 million baht), and 4,186.13 million baht (excluding medical compensation 1,000 million baht) respectively.*

2) *Salary Deduction refers to the monthly salary of governmental service units, which is the personnel monthly salary, liable under the National Health Security System as there are periodical reviews of salary deductions*

Diagram 5 The National Health Security Fund, by category, Fiscal Year 2018



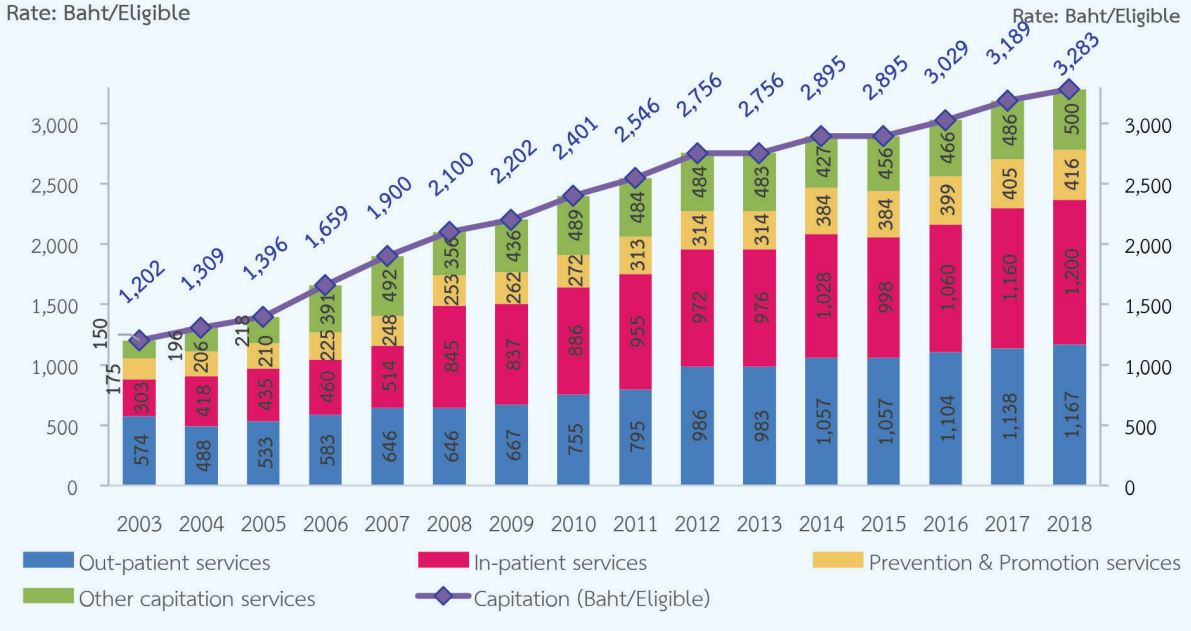
Source: Notification of the National Health Security Board Re: Performance and Management Criteria of the National Health Security Fund for 48.797 million beneficiaries

Note: The budget of the National Health Security Fund 175,559.80 million Baht, the sum of government salary 44,840.54 million baht, central budget for emergency or necessity reserve to compensate for public health services of the Ministry of Public Health 4,186.13 million baht (excluding medical compensation of 1,000 million baht

Per capita of beneficiary for the National Health Security Fund increased from 1,202.40 baht per beneficiary in 2003 to 3,283.11 baht per beneficiary in 2018 or increased by 2.73 folds. (Figure 6) (Table 30 in appendix 5) As a result, the National Health Security Fund was able to increase benefits and support health services for beneficiaries.

Except for capitation, in Fiscal Year 2006, 2009, 2010, 2016, and 2018, the government had allocated additional budget for specific groups comprising of HIV/AIDS services, renal replacement therapy for chronic renal failure patients, prevention of complication in Diabetes Mellitus and hypertensive patients, prevention of HIV in high-risk group (homosexuals and transgenders, prostitutes, and intravenous addicts), long-term care series for dependent elderly, chronic psychiatric patients in community and primary care clinic with family medicine respectively.

Figure 6 Per capita for beneficiaries under Universal Coverage Scheme, by category of health services, Fiscal Year 2006-2018



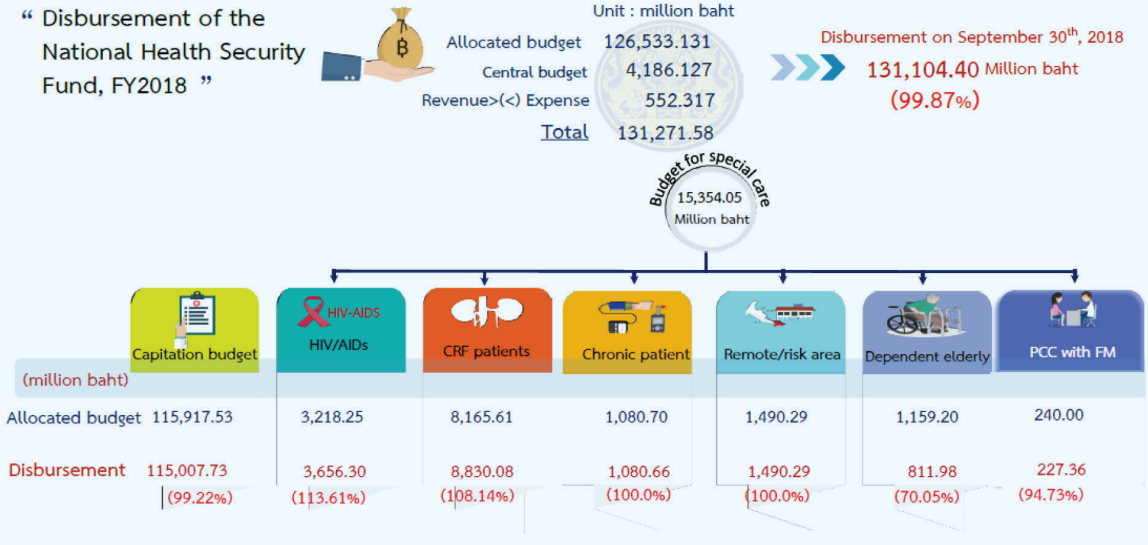
Source: Notification of the National Health Security Board Re: Performance and Management Criteria of the National Health Security Fund for beneficiaries

Notes:
1. *The Fund received additional appropriations 2003-2006 in the amount of 5,000million baht, 3,845.33 million baht, 4,993.33 million baht, and 14,761.83 million baht respectively. Moreover, during 2017-2018, the cabinet approved central budget, emergency or necessity reserve to compensate for public health services of the Ministry of Public Health in the amount of 3,979.41 million baht (excluding salary 1,000 million baht), and 4,186.13 million baht (excluding medical compensation 1,000 million baht) respectively.*
2. *Other services except in-patient services, out-patient services, prevention and promotion services such as specific services, rehabilitation services, Thai traditional medicine services, depreciation (investment budget), preliminary aid to providers, and additional expense according to criteria and quality of services.*

1.3 Disbursement of the National Health Security Fund

In Fiscal Year 2018, there was disbursement from the National Health Security Fund in the amount of 99.87% as detailed in Diagram 6

Diagram 6 Disbursement of the National Health Security Fund, by category, Fiscal Year 2018



Sources: 1. Notification of the National Health Security Board Re: Performance and Management Criteria of the National Health Security Fund for beneficiaries in Fiscal Year 2018

2. Statement report of the National Health Security Fund Fiscal Year 2018. September 30th , 2018.

Note: Budget dispensed was higher than budget received as a result of exceeding the service performance goals. Therefore, the NHSF received additional allocated budget of 4,186.13 million baht according to the Cabinet's resolution for emergency and necessary payment to compensate for the health services of the service units under the Ministry of Public Health, simultaneously, revenue was higher (or lower) than cumulative expense in the amount of 552.317 million baht.

1.4 Administrative budget of the National Health Security Office

In Fiscal Year 2018, the National Health Security Office's administrative budget was separated from the budget of the National Health Security Fund since it was a general grant under national health insurance development plan and promotion of research and development plan totaling to the amount of 1,376.87 million baht. This budget was for the management of the National Health Security Fund to achieve its objectives according to the National Health Security Act. B.E. 2545 (AD 2003). Disbursement as of September 2018 was in the amount of 1,346.15 million baht or 97.77%.

2. Population coverage

Thailand's health insurance system comprises of Civil Servant Medical Benefit Scheme (CSMBS), Social Security Scheme (SSS), and Universal Coverage Scheme (UCS), and other government health insurances (private enterprise, local government organizations, public organization, and autonomous state agencies (agencies governed by specific acts).

In 2018, there were 66.2452 million Thai people with rights to Universal Health Coverage (UHC), and 66.2058 million were registered accounting for 99.94%. Of the 47.8420 million individuals with rights to the Universal Coverage Scheme (UCS), 47.8027 million were registered which accounted for 99.92%. (Diagram 7 and Diagram 8) (Table 31 in appendix 5)

There are a total of 39,351 individuals not registered to select their regular units (pursuant to Section 6 of the National Health Security Act B.E. 2545 (AD. 2002) accounting for 0.06% consisting of newborn group, individuals in transition of rights, individuals without national status or proof of right pending and exclusive of individuals without a home registration (proof of right pending) totaling to 107,442 individuals, 14,045 Thais abroad and 411,528 migrants.

Upon consideration of the age structure as classified by rights, it has been found that the majority of eligible persons under Universal Coverage Scheme were children (0-19 years old) and the elderly (60 years and over) while those eligible under the Social Security Scheme were labor-age (25-49 years), and the eligible under Civil Servant Medical Benefit Scheme were distributed amongst all age groups, especially in the 40 years and over (Diagram 9).

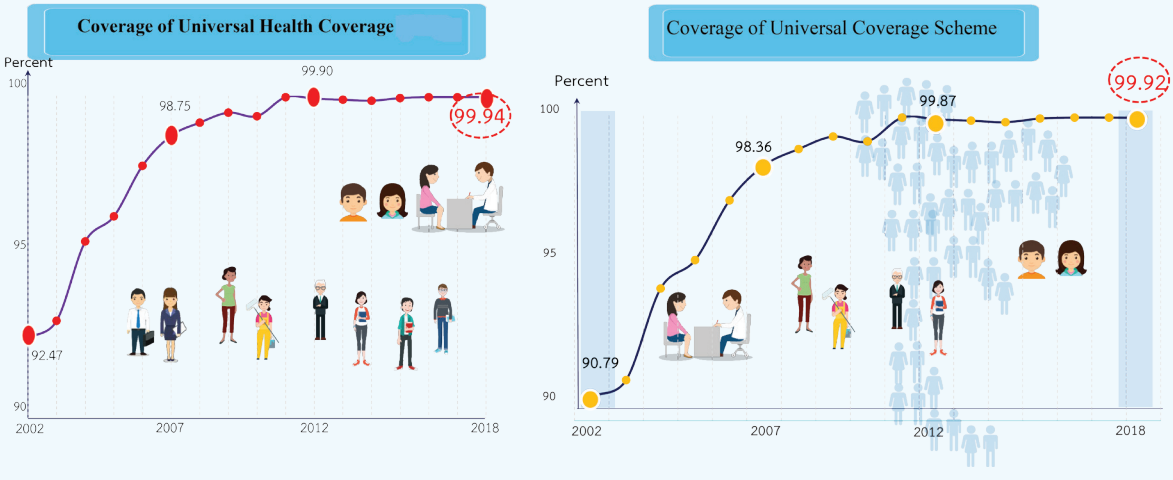
Although the coverage of access to health service under the UCS was high to 99.92% or covered 47.8 million eligible persons or 72% of total Thai citizens, there are still some groups that do not have access to health services such as prisoners, monks, dependent elderly, disabled, and the indigenous individuals living in remote areas.

Hence, the 4th Strategic Plan of Universal Coverage Scheme (2017-2021) aims to coordinate and collaborate with many sectors as follows:

- Automatic registration for the prisoners to primary care unit within the correctional facility itself, develop a referral system among services units and matching between correctional facility and services units for providing services to the prisoners including screening, diagnosis, treatment infectious diseases that are widely contagious and spreads easily in prisons such as Tuberculosis
- Driving a health constitution for Monks to have access to healthcare by inspecting the 13 digits of the national identity card including registering monks to their respective provincial health units.
- Integrated Long-Term Care: LTC between local service units and local governmental organization and establish the Elderly's Quality of Life Development, Community Center with a care manager and volunteer care worker including family care team to support and improve the quality of life of the elderly and for the elderly to become considerably self-dependent.

- Collaborations with relevant organizations to search for individuals with registration issues and develop an information database for those with registration issues to have access to comprehensive healthcare benefits, specifically, for Thais without rights or status such as tribal individuals, sea-faring individuals or those having lived in Thailand for a period but do not have the 13 digits national identity needed to procure the UCS benefits.

Diagram 7 Population coverage under Universal Health Coverage (UHC) and Universal Coverage Scheme (UCS), Fiscal Year 2003-2018



Source: Bureau of Registration, NHSO, September 30th, 2018

Notes: 1. Total Thai population not inclusive of those waiting for proof of right, Thai people abroad, and migrant

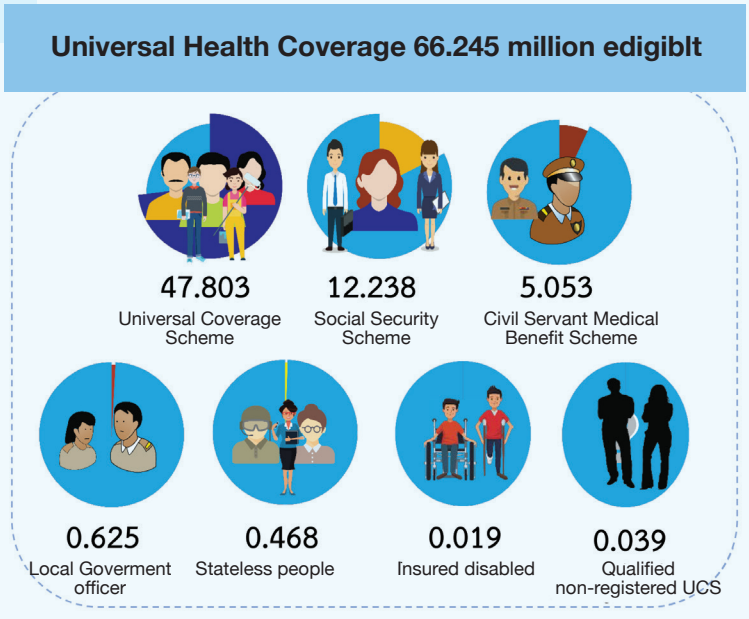
2. Percentage of Universal Coverage Scheme coverage: UHC

$$= \frac{\text{Registered UC} + \text{registered under other health insurance schemes} + \text{Stateless people} \times 100}{\text{Total population in Thailand}}$$

3) Percentage of Universal Coverage Scheme (UCS) coverage

$$= \frac{\text{registered UC} \times 100}{\text{Registered UC} + \text{unregistered individuals}}.$$

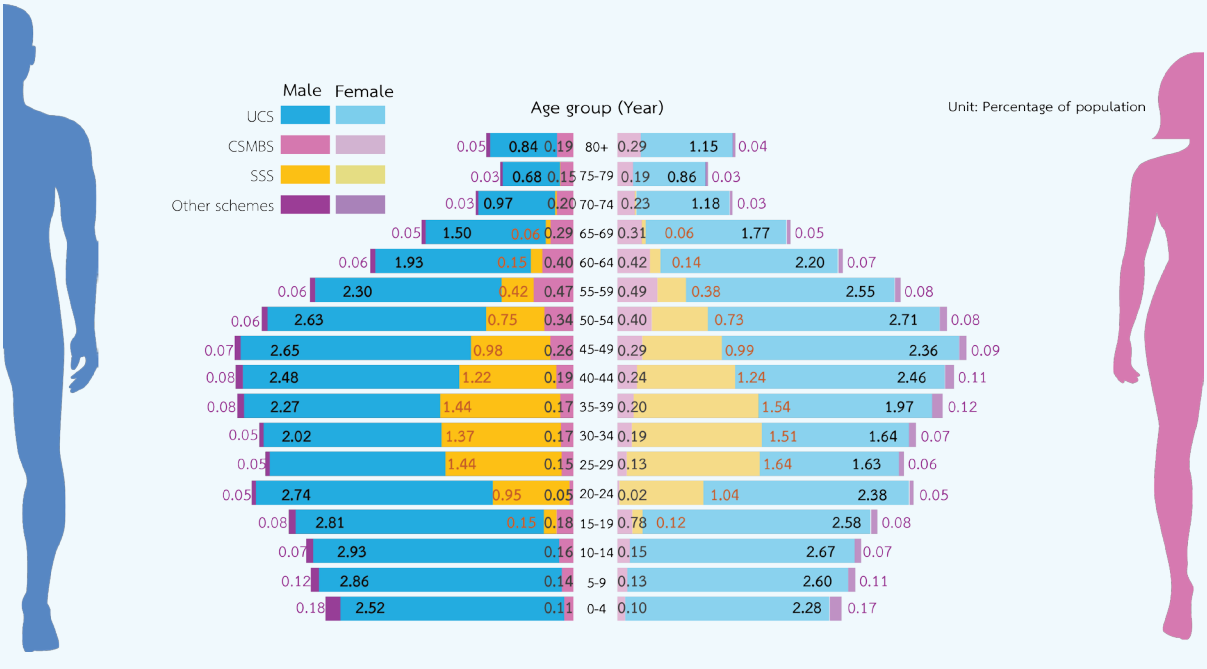
Diagram 8 Number of Thai population, by health insurance status, Fiscal Year 2018



Source: *Bureau of Registration, NHSO, September 30th ,2018*

Notes:
1. *Refers to the Total population not inclusive of those without house registration (proof of right pending), Thais abroad and migrant*
2. *Refers to individuals with issues as to the status and right and private school teacher*

Diagram 9 Proportion of Thai population, by gender, age group, and health insurance scheme, Fiscal Year 2018.



Source: *Bureau of Registration, NHSO, September 30th, 2018*

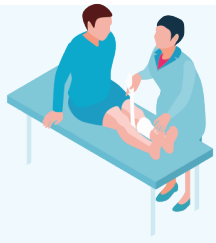
3. Services coverage

3.1 Benefit package of the Universal Coverage Scheme

During the 4 periods of the National Health Security Development Strategy starting from the First National Health Security Development Strategy (B.E. 2546-2550) to the Forth National Health Development Plan (B.E. 2560-2564), there have been continuous revision and development of the benefit packages with the goal to expand coverage of necessary health services as follows:

During the 1st Strategic Plan of Universal Coverage Scheme B.E. 2546-2550 (A.D. 2003-2007), not only the basic benefit package but also the special benefit package for specific groups were developed such as HIV/AIDS, high cost of treatment groups, for example heart surgery, cataract surgery including access to necessary and high-cost medicines. During the 2nd Strategic Plan of Universal Coverage Scheme B.E. 2551- 2554 (A.D. 2008-2011), increased benefits of access to renal replacement therapy, added a methadone maintenance program for opioid addiction patients to the benefits package, together with psychiatric services, liver transplantation in children, heart transplantation, and changing service unit 4 times per year were developed. During the 3rd Strategic Plan of Universal Coverage Scheme B.E. 2555-2559 (A.D. 2012-2016), there was an increased benefits of seasonal influenza vaccinations, stem cell transplantation for leukemia, lymphoma, integrated treatment of cancer for the same standard, increased access to 4 drug items in drug list E (2), treatment with antiretroviral therapy (ARV) without limiting the levels of CD4 count assessment, unlimited deliveries, integration of 3 public health insurance funds, prevention of HIV in high risk group, long-term care for dependent elderly. During the 4th Strategic Plan of Universal Coverage Scheme B.E. 2560-2561 (B.E. 2017-2018), increased benefits of accessing to primary care unit with primary care doctor, HPV vaccinations to prevent cervical cancer for Grade 5 students, colon cancer screening, Viral hepatitis C screening and antiviral C drug, one day surgery (Diagram 10) Table 32 in appendix 5).

Diagram 10 Benefit Package of the Universal Coverage Scheme, Fiscal Year 2003-2019:
Step into the 17th year



- Everyone who lives in Thailand covered by UHC and access to health promotion, disease prevention, treatment, medical rehabilitation and National Essential Drug Lists with confidence when needed

- Reduced waiting list for cataract lens replacement surgery

- Increased of the Rehabilitation Fund for the disabled
- Established Consumer Coordinating Center

The First Strategic Plan

2002 | **2003** | **2004**

2012 | **2011**

The Third Strategic Plan

- Added pediatric liver transplantation to the benefit package
- Added heart transplantation to the benefit package
- The government launched the Emergency Claims Online Project (EMCO)
- Application for a change of the service unit 4 rounds/year

- Started screening for complications of diabetes and hypertension

2013 | **2014** | **2015** | **2016**

- Expansion of flu vaccine for seasonal coverage
- Added stem cell transplantation for leukemia and lymphoma in the benefits package

- NHSO established a National Clearing House (NCH)
- Integrated cancer treatment into a single standard service
- Additional budget to increase efficiency to service units in remote area and high risk area

- Expanded the list of E2 drugs 4 items:
  - Trastuzumab for early stage of breast cancer
  - Peginterferon for Hapatitis C and HIV+
  Nilotinib and Dasatinib for Leaukemia and lymphoma
- Expanded ART for all HIV cases, regardless of CD4 count
- Expansion of coverage for delivery, regardless of number of births

- Integrated data throughout the three Public Health Insurance Scheme (CSMBS, SSS, and UCS)
- Increased HIV prevention service for high risk group
- Long-term care project for dependent elderly
- Initiated a project for the care of chronic psychiatric patients in the community

- Added anti-retroviral therapy (ART) and other related services to people living with HIV/AIDS

- Launched the Community Health Fund together with the Local Government Organization.
- Creation of and NHSO consumer service center inside service units.
- Implemented compulsory licensing for expensive, life-saving drugs (CL)

- Heart surgery queue reduction program (from 2 years to 6 months)
- Added traditional Thai medical services to UCS benefits package
- Implemented a program for high-cost diseases

2005 **2006** **2007**

The Second Strategic Plan

2010 **2009** **2008**

- Expanded the rights of undocumented persons
- Implemented an orphan drugs/Thai traditional drugs program
- Abolish the ceiling of 15 days service among mental ill patients

- Developed the high-cost medicine scheme (Category E2)
- Project to reduce queues in the treatment of kidney stones
- Added influenza vaccine to the benefit package
- Established the independent complaint receiving unit according to Article 50 (5) of the National Health Security Act A.D. 2002

- Added renal replacement therapy for end-stage chronic kidney failure to the benefits package•
- Added a methadone maintenance program for opioid addiction patients to the benefits package

2017 **2018** **2019**

Action Plan

- Expanded cervical cancer screening service
- Launch of the Universal Coverage for Emergency Patients program (UCEP) start April 1st, 2017

- Implemented Primary Care Cluster program
- Added HPV vaccine in the benefits package
- Screening for colon cancer
- Screening and added drug lists for treatment of Viral Hepatitis C
- One-day surgery program

- Expanded the list of E2 drugs
- Added 5 vaccines: Diphtheria, tetanus, pertussis, Viral hepatitis B, encephalitis (DTP-HP-Hib)
- Rabies vaccine
- Include new medicines: Raltegravir (for prevention of mother-to-child transmission of HIV)
- Include new medicine: Bevacizumab (for central retinal vain occlusion)
- Expanded the health promotion and disease prevention list to eight diseases in pregnant women and infants

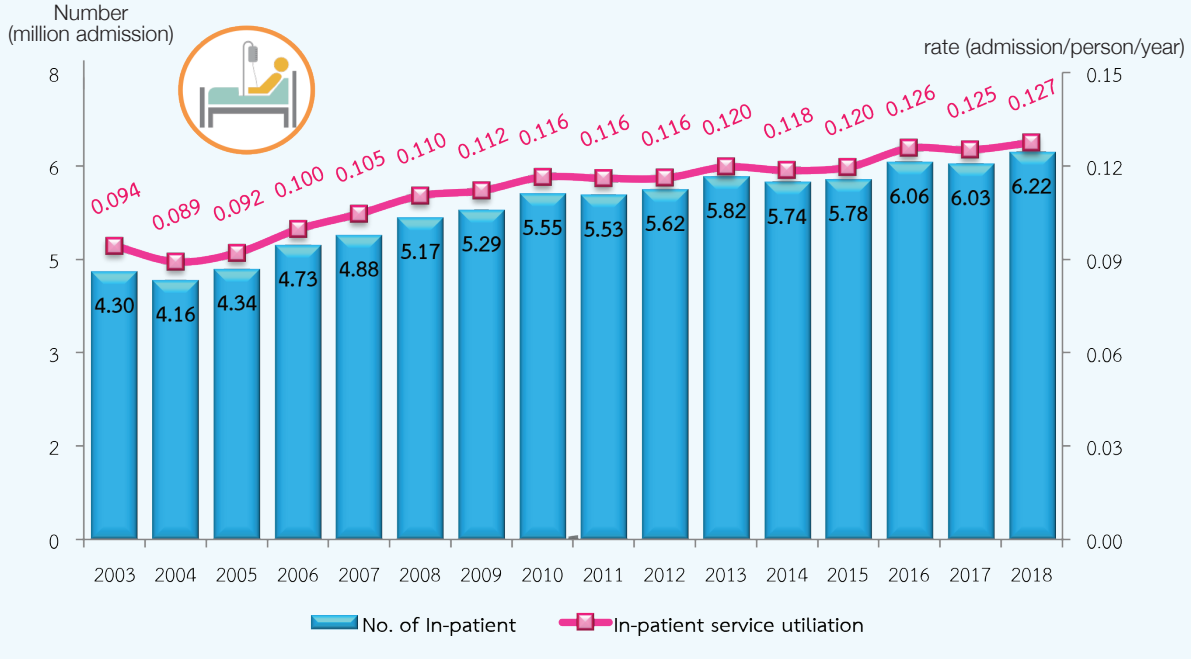
3.2 Overview of service utilization under the Universal Coverage Scheme

1) Service utilization of out-patients and in-patients

Services utilization is the first step of accessibility to health services. According to the National Health Security data, out-patient services utilization between Fiscal Year 2003 -2018 revealed that the number had increased from 111.95 million visits in Fiscal Year 2003 to 184.56 million visits in Fiscal Year 2018. The outpatient services utilization grew from 2.450 times per individual per year (2003) to 3.845 per individual per year (2018) (In Fiscal Year 2018, the rate of out-patient service utilization, not inclusive of Thai traditional medical services and rehabilitation services, was 3.740 visits per individual per year (Figure 7).

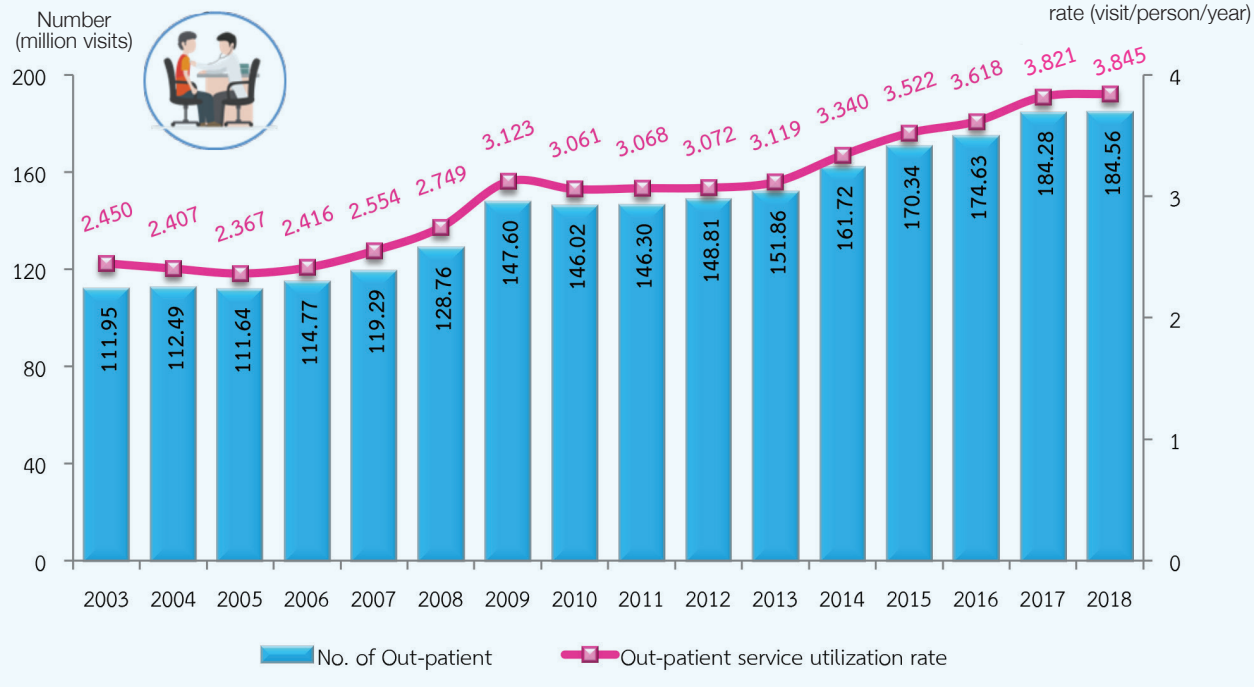
For in-patient service utilization under UCS, data showed that the number of in-patient usage had increased from 4.304 million visits in Fiscal Year 2003 to 6.220 million visits in Fiscal Year 2018; this is a growth from 0.094 visits per individual per year in 2003 to 0.127 visit per individual per year in 2018 (Figure 8).

Figure 7 Number and rate of out-patient service utilization under the Universal Coverage Scheme, Fiscal Year 2003-2018



Source: In-patient data, by individual beneficiary under UCS, September 30th , 2018. Analyzed by Bureau of Planning and Budget Administration, NHSO

Figure 8 Number and rate of in-patient service utilization under the Universal Coverage Scheme, Fiscal Year 2003-2018



Source: In-patient data, individual beneficiary under UCS, September 30th , 2018; analyzed by Bureau of Planning and Budget dministration.

Classification of the causes of in-patient morbidity or admission, according to age group in the year 2018, revealed that the most common causes were gastritis/enteritis pneumonia, normal labor, chronic obstructive pulmonary diseases, and cataract (Table 1). For in-patients' causes of mortality classified by age group, the leading causes were pneumonia, cerebral hemorrhage, bacterial pneumonia, acute myocardial infarction (Table 2 and Table 3)

Table 1 The top 30 leading causes of morbidity (diseases/groups of diseases) of UCS in-patients, by age-group, Fiscal Year 2018.

Unit:Episode

Ranking	Causes of illness (diseases/groups of diseases): 298 groups of diseases	Total (Patient)	Age Group					
			< 1 year	1-4 years	5-14 years	15-59 years	60-69 years	70+ years
1	Diarrhea and gastroenteritis of presumed infectious origin: A09	318,290	30,666	78,805	45,829	86,618	32,667	43,705
2	Live born infants according to place of birth: Z38	304,701	304,701	0	0	0	0	0
3	Pneumonia, organism unspecified: J18	263,782	34,109	78,122	16,410	43,094	30,500	61,547
4	Single spontaneous delivery: O80	141,071	0	0	1,212	139,859	0	0
5	Other chronic obstructive pulmonary disease: J44	132,251	28	141	64	21,019	37,679	73,320
6	Senile cataract: H25	129,210	0	0	0	22,413	51,060	55,737
7	Acute bronchitis: J20	121,007	16,130	53,566	16,991	14,336	7,874	12,110
8	Chronic renal failure: N18	119,018	33	50	236	40,965	34,605	43,129
9	Thalassemia: D56	97,892	457	10,230	43,937	34,272	4,787	4,209
10	Heart failure: I50	96,562	179	149	251	27,969	24,660	43,354
11	Non-insulin-dependent diabetes mellitus: E11	96,260	16	15	175	40,180	28,949	26,925
12	Cerebral infarction: I63	86,221	25	52	48	27,428	24,583	34,085
13	Neonatal jaundice from other and unspecified causes: P59	85,090	85,090	0	0	0	0	0
14	Other disorders of urinary system: N39	82,642	2,247	2,706	2,981	26,284	17,157	31,267
15	Acute appendicitis: K35	78,638	13	1,025	16,562	48,682	7,105	5,251
16	Cellulitis: L03	66,776	643	4,664	3,859	27,361	13,847	16,402
17	Dyspepsia: K30	62,353	86	910	5,848	31,959	10,298	13,252
18	Fever of unknown origin: R50	60,342	2,630	6,210	6,704	26,276	8,112	10,410
19	Bacterial pneumonia, unclassified: J15	59,435	5,030	10,889	2,998	12,473	8,997	19,048
20	Acute myocardial infarction: I21	55,540	8	23	9	16,213	16,571	22,716
21	Gastritis and duodenitis: K29	54,910	1,467	13,660	14,001	15,176	5,045	5,561
22	Intracranial injury: S06	52,259	516	2,224	4,748	30,446	6,413	7,912
23	Other diseases of digestive system: K92	49,972	206	251	561	22,719	11,100	15,135

Unit:Episode

Ranking	Causes of illness (diseases/groups of diseases): 298 groups of diseases	Total (Patient)	Age Group					
			< 1 year	1-4 years	5-14 years	15-59 years	60-69 years	70+ years
24	Dengue hemorrhagic fever: A91	49,478	588	2,093	19,251	26,067	1,012	467
25	Classical Dengue Fever: A90	48,594	575	4,150	22,392	19,841	1,052	584
26	Acute tubulo-interstitial nephritis: N10	47,081	615	748	1,248	20,662	9,777	14,031
27	Disorders related to short gestation and low birth weight; unclassified: P07	45,328	45,328	0	0	0	0	0
28	Mental and behavioral disorders due to use of alcohol: F10	40,127	0	12	97	36,461	2,806	751
29	Malignant neoplasm of colon: C18	39,128	4	3	32	15,864	13,994	9,231
30	Essential (primary) hypertension: I10	38,132	6	32	190	16,074	9,540	12,290
Total top 30 groups of diseases		2,922,090	531,396	270,730	226,634	890,711	420,190	582,429
Total 298 groups of diseases		**6,213,476**	**738,886**	**504,245**	**441,812**	**2,507,896**	**919,641**	**1,100,996**

Source: IP- Research, Bureau of Information Technology, September 30th, 2018. Data processing on January 31st, 2018. Analyzed by Bureau of Health Inforamtion and Outcome Evaluation, NHSO.

Note: Classification of morbidity according to the International Statistical Classification of Diseases and Related Health Problems (ICD-10-TM) consisting of codes for diseases and signs, symptoms, detected abnormalities as referred from Public Health Statistics, Bureau of Policy and Strategy, the Ministry of Public Health.

Table 2 The top 30 leading causes of mortality (diseases/groups of diseases) of the UCS in-patients, by age-group, Fiscal Year 2018.

Unit:Episode

Ranking	Causes of death (diseases/groups of diseases): 298 groups of diseases	Total (Patient)	Age Group					
			< 1 year	1-4 years	5-14 years	15-59 years	60-69 years	70+ years
1	Pneumonia, organism unspecified: J18	12,938	183	121	77	3,380	2,506	6,671
2	Intra-cerebral hemorrhage: I61	6,666	0	5	10	2,972	1,455	2,224
3	Bacterial pneumonia, not elsewhere classified: J15	5,514	85	35	45	1,332	1,097	2,920
4	Acute myocardial infarction: I21	4,766	2	2	2	897	1,188	2,675
5	Other chronic obstructive pulmonary disease: J4	3,780	2	4	2	314	761	2,697
6	Heart failure: I50	3,743	12	14	17	998	779	1,923
7	Cerebral infarction: I63	3,519	2	4	0	702	815	1,996
8	Malignant neoplasm of liver and intrahepatic bile ducts: C22	3,310	1	3	3	1,410	1,040	853
9	Chronic renal failure: N18	3,115	0	2	2	978	886	1,247
10	Malignant neoplasm of bronchus and lung: C34	3,053	0	0	1	866	935	1,251
11	Intracranial injury: S06	3,039	13	25	107	1,881	460	553
12	Other septicemia: A41	3,017	34	18	31	964	638	1,332
13	Other diseases of digestive system: K92	2,715	1	4	3	1,244	534	929
14	Other disorders of urinary system: N39	2,555	3	3	3	469	512	1,565
15	Shock, not elsewhere classified: R57	2,506	29	15	21	963	529	949
16	HIV disease resulting in infectious and parasitic diseases: B20	2,464	3	1	5	2,298	127	30
17	Pneumonitis due to solids and liquids: J69	1,961	23	15	14	325	340	1,244
18	Diarrhea and gastroenteritis of presumed infectious origin: A09	1,581	21	13	18	477	355	697
19	Decubitus ulcer: L89	1,400	2	5	2	198	259	934
20	Cardiac arrest: I46	1,350	10	4	8	482	335	511
21	Fibroblastic disorders: M72	1,198	1	0	1	432	344	420

Unit:Episode

Ranking	Causes of death (diseases/groups of diseases): 298 groups of diseases	Total (Patient)	Age Group					
			< 1 year	1-4 years	5-14 years	15-59 years	60-69 years	70+ years
22	Disorders related to short gestation and low birth weight, not elsewhere classified: P07	1,088	1,088	0	0	0	0	0
23	Acute Tubule-interstitial nephritis: N10	1,060	2	1	1	219	237	600
24	Malignant neoplasm of colon: C18	1,026	0	0	0	291	314	421
25	Peritonitis: K65	987	0	3	0	502	239	243
26	Respiratory tuberculosis, bacteriologically and histologically confirmed: A15	968	1	0	0	421	207	339
27	Malignant neoplasm of breast: C50	929	0	0	0	558	243	128
28	Fibrosis and cirrhosis of liver: K74	869	0	2	0	502	201	164
29	Non-insulin-dependent diabetes mellitus: E11	855	0	0	1	296	226	332
30	Respiratory tuberculosis, not confirmed bacteriologically or histologically: A16	813	0	0	0	329	177	307
Total 30 Syndromes		82,785	1,518	299	374	26,700	17,739	36,155
Total 298 Diseases		**122,042**	**2,684**	**652**	**906**	**42,170**	**26,348**	**49,282**

Source: IP- Research, Bureau of Information Technology, as of September 30th, 2018. Data processing on January 31st , 2018. Analyzed by Bureau of Health Information and Outcome Evaluation, NHSO.

Note: Classification of morbidity according to the International Statistical Classification of Diseases and Related Health Problems (ICD-10-TM) consisting of codes for diseases

Table 3 The top 30 leading case – fatality (diseases/groups of diseases) of UCS in-patient, by gender, Fiscal Year 2018

Unit: Individuals

Ranking	Causes of death (diseases / group of diseases): 298 Diseases	Total (Individuals)	Gender	
			Male	Female
1	Pneumonia, organism unspecified: J18	12,938	7,450	5,488
2	Intracerebral hemorrhage: I61	6,666	4,148	2,518
3	Bacterial pneumonia, not elsewhere classified: J15	5,514	3,186	2,328
4	Acute myocardial infarction: I21	4,766	2,513	2,253
5	Other chronic obstructive pulmonary disease: J44	3,780	3,043	737
6	Heart failure: I50	3,743	1,608	2,135
7	Cerebral infarction: I63	3,519	1,702	1,817
8	Malignant neoplasm of liver and intrahepatic bile ducts: C22	3,310	2,438	872
9	Chronic renal failure: N18	3,115	1,410	1,705
10	Malignant neoplasm of bronchus and lung: C34	3,053	2,000	1,053
11	Intracranial injury: S06	3,039	2,324	715
12	Other septicemia: A41	3,017	1,590	1,427
13	Other diseases of digestive system: K92	2,715	1,894	821
14	Other disorders of urinary system: N39	2,555	913	1,642
15	Shock, not elsewhere classified: R57	2,506	1,303	1,203
16	HIV disease resulting in infectious and parasitic diseases: B20	2,464	1,603	861
17	Pneumonitis due to solids and liquids: J69	1,961	1,087	874
18	Diarrhea and gastroenteritis of presumed infectious origin: A09	1,581	802	779
19	Decubitus ulcer: L89	1,400	574	826
20	Cardiac arrest: I46	1,350	746	604
21	Fibroblastic disorders: M72	1,198	694	504
22	Disorders related to short gestation and low birth weight, not elsewhere classified: P07	1,088	615	473
23	Acute tubulo-interstitial nephritis: N10	1,060	385	675
24	Malignant neoplasm of colon: C18	1,026	557	469
25	Peritonitis: K65	987	625	362
26	Respiratory tuberculosis, bacteriologically and histologically confirmed: A15	968	690	278
27	Malignant neoplasm of breast: C50	929	7	922
28	Fibrosis and cirrhosis of liver: K74	869	583	286
29	Non-insulin-dependent diabetes mellitus: E11	855	367	488
30	Respiratory tuberculosis, not confirmed bacteriologically or histologically: A16	813	594	219
	Total 30 Groups of Diseases	82,785	47,451	35,334
	Total 298 Diseases	**122,042**	**69,456**	**52,572**

Source: In-Patient Research, Office of Information Technology, Insurance, September 30th, 2018, analyzed by the Information and Health Information Agency, NHSO.

Note: Classification of Diseases according to the International Statistical Classification of Diseases and Related Health Problems (ICD-10-TM) consisting of codes for diseases and syndromes, symptoms, detected abnormalities as referred from Public Health Statistics, Bureau of Policy and Strategy, Ministry of Public Health

2) UCS Compliance rate

Citing from the report of The 2017 Health and Welfare Survey, National Statistical Office, on Out- Patient *Self-Care Behavior during an Illness,* it has been found that patients covered by the UCS would opt to purchase modern medicine as the first action followed by visiting the Tambon Health Promoting Hospital/ Health Center. However, in-patients prefer to use the services of general hospitals/ regional hospital followed by community hospitals (Table 4).

In regards to the Compliance Rate of eliciting health services from service unit, it has been learned that health service utilization of out-patient covered by UCS has a tendency to increase as in the year 2017, there was an 80.19% utilization. This trend was also found in in-patient service utilization where the highest utilization was at 91.21 in 2013 before decreasing to 87.88% in 2017 (Figure 9)

However, the main reasons for not using the UCS by out-patients are the services were slow and too much waiting-time followed by patients unable to elicit services during office hours and their ailments were minor; simultaneously, for inpatient services, the causes were slow and too long waiting-time followed by accident and emergency illnesses and their illnesses were not covered by scheme, respectively (Table 5)

Table 4 Percentage of health seeking behavior of UCS population, by types of services, Fiscal Year 2017

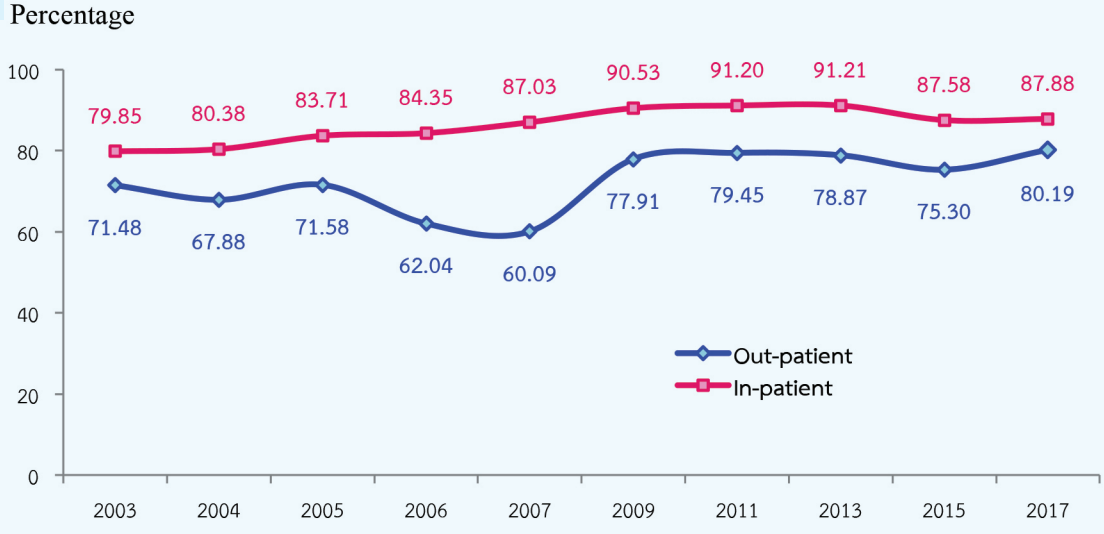
Unit:Percentage

Customers' Behaviour in Using Services / Self-care during illnesses	Out-patient	In-patient
1. No Treatment	6.19	-
2. Purchased/Searched for Modern Medicine	21.59	-
3. Purchased/Searched for Traditional/ Herbal Medicine	0.74	-
4. Visited local doctors/ traditional doctors/ Thai traditional masseuse	0.30	-
5. Visited Tambol Health Promoting Hospital (THPH)/Health Center, Community Health Center	19.25	-
6. Visited Community Hospitals	16.15	33.61
7. Visited General Hospitals / Regional Hospitals	16.15	43.37
8. Visited a University Hospitals	0.81	4.07
9. Visited Government Affiliated Hospitals	4.72	9.55
10. Visited Private Clinics	10.24	-
11. Visited Private Hospitals	3.53	9.37
12. Others	0.32	0.03
Total	**100.00**	**100.00**

Source: The 2017 Health and Welfare Survey, National Statistical Office. Analyzed by Bureau of Health Information and Outcome Evaluation, NHSO.

Notes: Calculated from respondents claiming to have had illnesses one month prior to the survey.

Figure 9 Compliance rate of Out-patient services and In-patient services under UCS , Fiscal Year 2003-2017



Source: The 2003- 2017 Health and Welfare Survey, National Statistical Office, analyzed by Dr. Supon Limwattananonta

Notes: 1. Since 2007, the National Statistical Office has conducted Health and Welfare Survey every two years.

2. Out-patients: calculated based on respondents claiming to have illness one month prior to the survey and had utilized the National Health Insurance at point of health services

3. In-patients: calculated based on respondents claiming to have illness one year prior to the survey and had utilized the National Health Insurance at point of health services

Table 5 Percentage of reasons for not eliciting UCS benefit when accessing services Fiscal Year 2018

Unit:Percentage

Reasons for not eliciting UCS benefit	Out-patient	In-patient
1. Mild illness	10.48	-
2. Accidents and emergency	1.93	20.08
3. Remote regular service units / inconvenience in travelling	3.98	4.65
4. Inconvenience to visit during official hours	14.42	-
5. Slow and long waiting-period	41.90	34.8
6. Not confidence on quality of medicines	9.60	4.46
7. Discrimination/Inequality	0.81	-
8. Mean medical personnel/ impolite healthcare officers	0.45	1.07
9. Physicians had no time to provide accurate health service information upon requests	0.06	-
10. Physicians were inaccurate diagnosis/ Incurable	7.38	7.98
11. Beneficiaries did not live in domiciles covered by UCS	2.49	5.37
12. Existing illness did not cover by UCS.	4.79	12.46
13. Others	1.79	9.13
Total	**100.00**	**100.00**

Source: The 2017 Health and Welfare Survey, National Statistical Office, analyzed by the Bureau of Health Information and Outcome Evaluation, NHSO.

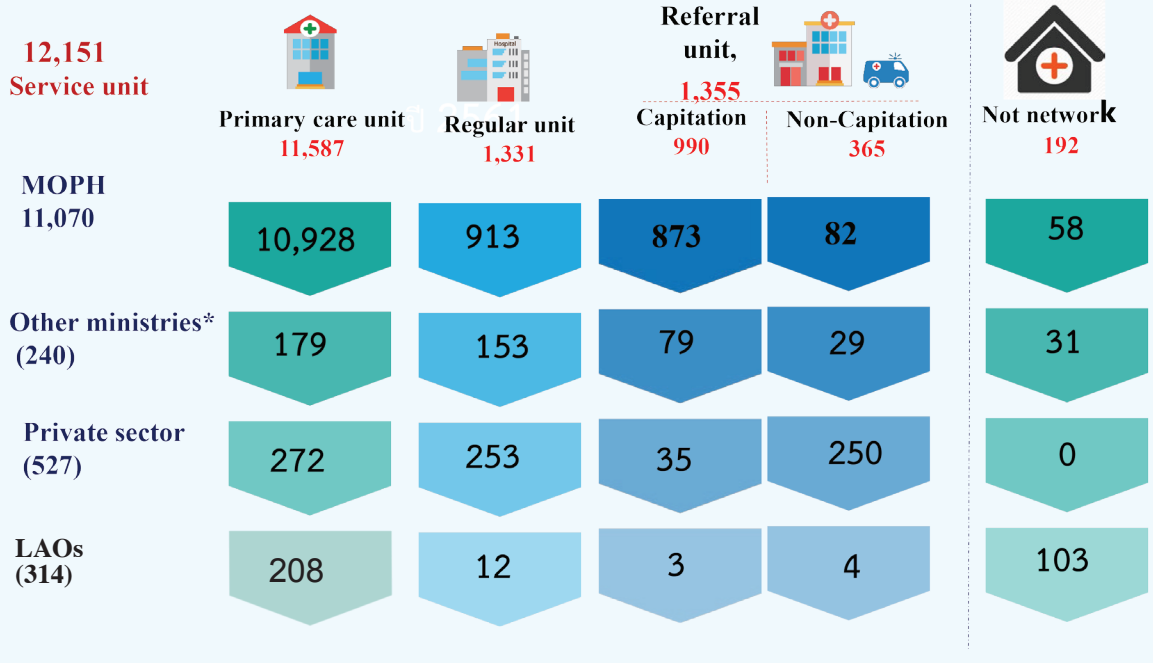
Note: Calculated from respondents who did not use the Universal Coverage Scheme at service units

3.3 Service Units

In the fiscal year 2018, there were a total of 12,151 registered service units in the UCS to provide holistic health care services at the primary care level onwards such health promotion, disease prevention, diagnosis, medical treatment and rehabilitation. The registered units consisted of:

1) 11,578 Primary Care Units (94.31% are affiliated with the Ministry of Public Health)
2) 1,331 Regular Units (68.59% are affiliated with the Ministry of Public Health while 19.01% affiliated with the private sector)
3) 1,355 Referral Units (70.48% affiliated with the MoPH while 21.03% with the private sector)
   990 units were compensated based on Capitation.
   365 units were compensated by Non-Capitation.
4) 192 units were not networks of service unit. (Diagram 11) (Table 33 and Table 34 in Appendix 5)

Diagram 11 Service units registered in the Universal Coverage Scheme, Fiscal Year 2018



Source: *Buraeu of Registration, NHSO, September 30th , 2018*

Notes:
1. *Each service unit can register in the Universal Coverage Scheme for more than one type.*
2. *Referral Unit with capitation is a service unit that is compensated by the Capitation payment system while the non-capitation referral unit is the service unit that is not compensated by the capitation system*
3. *Service units under other ministries; such as the Ministry of Interior, the Ministry of Defense, the Ministry of Education.*
4. *Non- network service unit is a service unit in public sector registered to the Universal Coverage Scheme according to the Ministry of Public Health's Notification*

3.4 Quality of service units

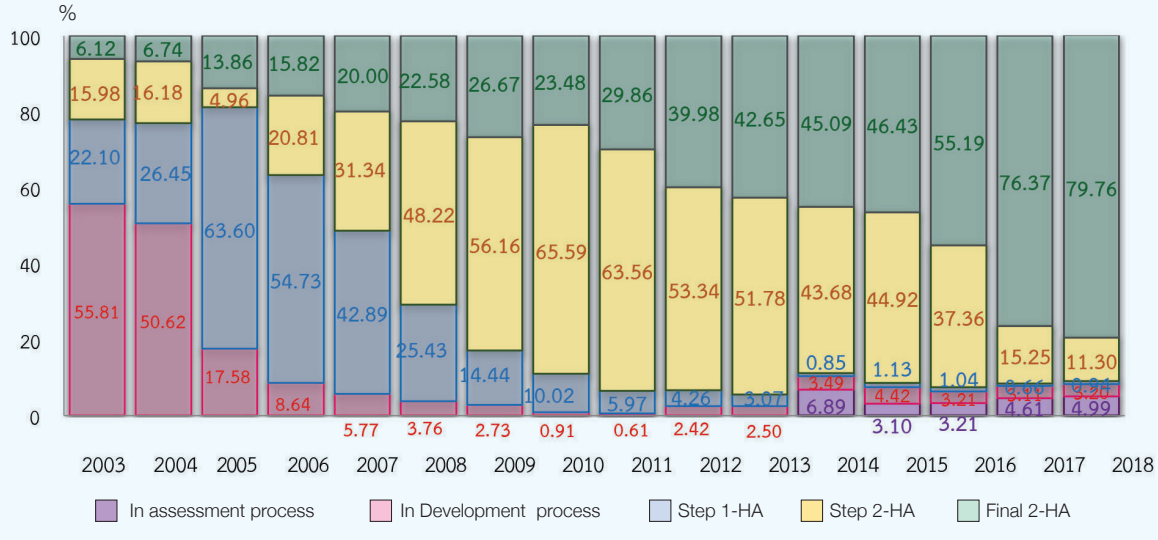
1) Referral Unit

The Referral units in the Universal Coverage Scheme have had quality and standard development according to the Hospital Accreditation (HA) process. In Fiscal Year 2018, there were 977 units, or 92% from 1,064 units submitted application, accredited. The results of accredited were as follows:

1. 847 referral units or 79.76% have been accredited.
2. 120 referral units or 11.30% have been certified at step-2
3. 10 referral units or 0.94% have been certified at step-1

There are 34 referral units, or 3.20%, in the development process for accreditation and 53 referral units are in the process of accreditation. Nevertheless, there was a significant increase in accredited referral units from 6.12 in 2003 to 79.76% in 2018 (Diagram 10) (Table 35, Appendix 5).

Figure 10 Referral Unit, by level Hospital Accreditation (HA), Fiscal Year 2003-2018.



Source: The Healthcare Accreditation Institute (Public Organization), September 30th, 2018, analyzed by Bureau of Healthcare Quality Management, NHSO

Notes: 1. Hospital Accreditation Certification by The Healthcare Accreditation Institute (Public Organization), September 30th, 2018
2. Referral Unit status, Bureau of Registration, August 31st, 2018

2) Primary Care Units and Regular Units

In Fiscal Year 2018, the percentage of Primary Care Units, Regular Units and Referral Units that passed the registration criteria was 94.71% (included passed with conditions), 97.82%, and 92.74% respectively. (Tables 6 and 7) (Table 37 in Appendix 5)

Table 6 Service unit assessment, by category of registration, Fiscal Year 2018

Unit: Unit

Assessment Results / Registration Category	Primary Care Unit		Regular Unit		Referral Unit	
	Units	Percentage	Units	Percentage	Units	Percentage
Passed	7,550	65.16	989	74.30	371	36.41
Passed with conditions	3,424	29.55	313	23.52	574	56.33
Failed	613	5.29	29	2.18	74	7.26
Total	**11,587**	**100.00**	**1,331**	**100.00**	**1,019**	**100.00**

Source: Bureau of Registration, NHSO, September 30th, 2018

Table 7 Assessment of Service Units according to NHSO's criteria, by categories of registration and affiliation, Fiscal Year 2018

Unit: Unit

Affiliation	Primary Care Unit				Regular Unit				Referral Unit			
	Passed	Passed with conditions	Failed	Total	Passed	Passed with conditions	Failed	Total	Passed	Passed with conditions	Failed	Total
1. MoPH (Office of the Permanent Secretary)	7,136	3,202	584	10,922	804	88	16	908	315	502	52	869
2. MoPH (not in the Office of the Permanent Secretary	4	1	0	5	2	1	2	5	3	7	1	11
3. Other ministries	93	65	11	169	89	51	10	150	35	30	20	85
4. Private sector	200	72	0	272	84	169	0	253	14	34	0	48
5. Special public sector	6	4	0	10	2	1	0	3	2	1	0	3
6. Local Admini-stration Organization	111	80	18	209	8	3	1	12	2	0	1	3
Total	**7,550**	**3,424**	**613**	**11,587**	**989**	**313**	**29**	**1,331**	**371**	**574**	**74**	**1,019**

Source: Bureau of Registration, NHSO, September 30th, 2018

3.5 Services utilization

1) Health services under capitation

In the Fiscal Year 2018, the beneficiaries access to health services under capitation compared to the allocated budgetary are briefly summarized as follows: (Table 8) (Table 39 in Appendix 5)

Table 8 Performances of medical services, Fiscal Year 2018

Items	Unit cont	Target (according to budget allocation)	Performance	Percentage
Targeted populations [1]				
- Registered beneficiaries in the UHC	person	65,700,035	66,205,796	100.77
- Registered beneficiaries in the UCS	Person	48,797,000	47,802,669	97.96
1. Out-patient services [2]				
- Total visit	visit	164,590,329	184,556,400	112.13
- Utilization rate	visits/person/ year	3.373	3.845	113.99
2. In-patient Services [3]				
- Total admission	admission	5,855,640	6,219,767	106.22
- Admission rate	admissions/ person/year year	0.120	0.127	105.83
3. Specific Services				
3.1 Necessary Services, outside networks of service unit				
- Accident or Emergency at service units located outside beneficiaries' registered province (OP-AE), and the disable access to service units not their registered service unit [3]	Visit	1,302,522	1,396,475	107.21
- Number of non-registered UCS first visit and the insured who are not entitled to the Social Security Scheme; both out-patient and in-patient [3]	visit	13,252	8,545	64.48
- OP refer out of province or OP refer from regional hospital/general hospital to university hospital within the province [4]	visit	350,068	375,380	107.23
- Refer case with transportation cost [3]	visit	255,171	252,631	99.00
3.2 Services increasing confidence in service quality				
- Antithrombotic drugs for acute myocardial infarction, type ST-elevated patients (STEMI fast track) [3]	visit	4,058	4,726	116.46
- Antithrombotic drugs for cerebral infarction patients (Stroke fast track) [3]	visit	4,158	4,844	116.50
- Cataract Surgery [3]	visit	120,000	124,705	103.92

Items	Unit cont	Target (according to budget allocation)	Performance	Percentage
- Surgery for Osteoarthritis [3]	visit	12,000	9,577	79.81
- Orthodontics and speech therapy for cleft-lip/cleft palate patients underwent repair surgery [5]	visit	1,398	1,087	77.75
3.3 Services those help reduce financial risks in service units				
- Treatment for decompression sickness (DCS)/divers' disease with hyperbaric oxygen therapy (HBO)	visit	11	10	90.91
- Corneal Transplantation (Including supply, storage and treatment) [6]	Eyes	591	479	81.05
- Heart Transplantation for severe heart failure that cannot be treated by any other methods [7]	Person	94	84	89.36
- Liver transplantation for children with liver failure from congenital biliary atresia or other causes [7]	person	205	268	130.73
- Hematopoietic Stem Cell Transplantation [6]	person	50	56	112.00
3.4 Services required close monitoring				
- Methadone Maintenance Treatment for opioids and opioid-derived drugs withdrawal patients [3]	person	8,416	7,681	91.27
- Medications according to List E (2) Both old and new cases [8]	person	38,024	33,393	87.82
- Orphan drugs and antidotes (17 items) [8]	person	7,099	5,312	74.83
- Clopidogrel under Compulsory licensing [8]	person	280,783	439,003	156.35
3.5 Disease-specific management				
- Transfusion Dependent Thalassemia (TDT) [9]	person	12,381	12,401	100.16
- Tuberculosis Treatment with a regimen of drugs [10]	person	115,160	77,376	67.19
- Palliative care [11]	person	15,390	16,814	109.25
4. Medical Rehabilitation Services [3]				
- Disabled registered to UC	person	1,261,795	1,270,765	100.71
- Supported equiment to the disabled	person	33,247	28,360	85.30
- Rehabilitation services for the Disabled	person	208,591	197,950	94.90
- Rehabilitation services for the elderly	person	222,288	480,430	216.13
- Rehabilitation services for patients requiring rehabilitation	person	426,939	340,339	79.72
- Rehabilitation services for bedridden patients	person	6,285	920	14.64
- Orientation & Mobility (O&M) Training for the visually impaired	person	2,501	1,972	78.85

Items	Unit cont	Target (according to budget allocation)	Performance	Percentage
5. Thai Traditional Medicine [3]				
- Thai Traditional medicine, massage, hot compression, herbal steaming	visit	4,109,849	4,482,707	109.07
- Postpartum care	person	37,633	45,328	120.45
- Prescribe herbal medicines in national essential drug list	visit	7,390,460	8,161,087	110.43
6. Preliminary aid to the beneficiaries [11]				
- provide preliminary financial assistance to the beneficiaries who are damaged by medical treatment (Section 41)	person	979	755	77.12
- provide preliminary financial assistance to the providers who are damaged by medical treatment	person	355	427	120.28

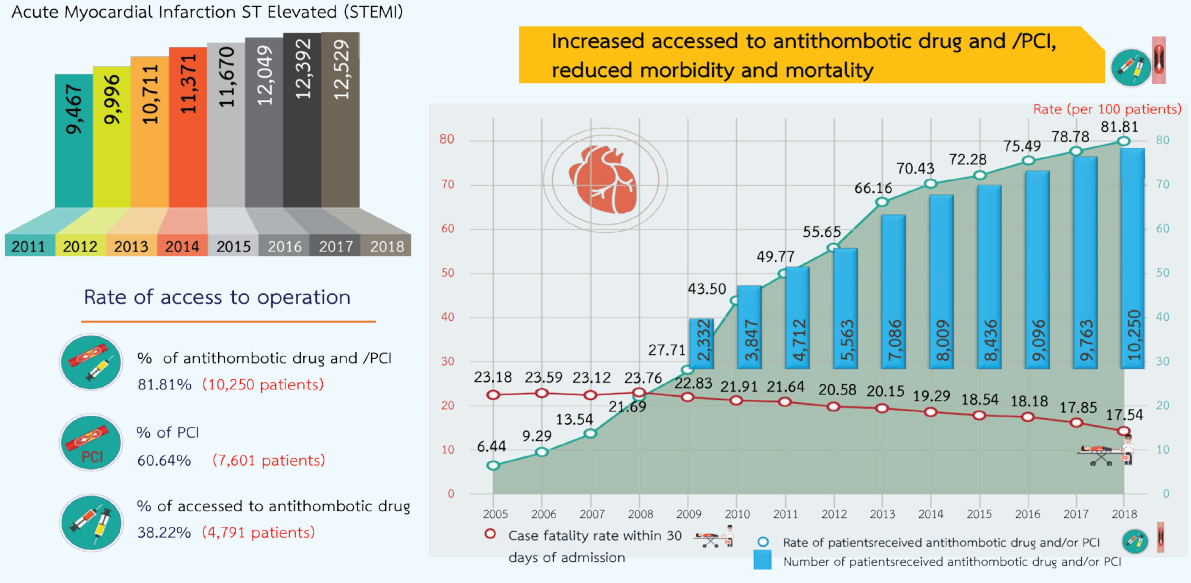
Sources: 1. Bureau of Registration, NHSO, September 30th , 2018
2. Out-patient and In-patient data classified by UCS members, Bureau of Information Technology, September 30th, 2018 , data processing by Bureau of Planning and Budget Administration on January 2018
3. M&E for Payment (H0401), Information and Evaluation Center for Health Information, NHSO,September 30th, 2017; analyzed January 10th , 2018.
4. Bureau of Information Technology, NHSO, September 30th, 2018; analyzed December 30th, 2017
5. Bureau of Fund Allocation and Reimbursement, September 30th, 2018; analyzed December 30th , 2018
6. Bureau of Healthcare Quality Management, NHSO, September 30th, 2018
7. Data from Program for Supporting Renal Failure Systems, NHSO, September 30th, 2018
8. Bureau of Medicines and Medical Supply Management, NHSO, September 30th, 2018
9. Data from the integrated screening system for abnormalities in pregnant women and infants, analyzed by the Office of Primary Care Service, NHSO, September 30th , 2018
10) Tuberculosis Data System (TB Data Hub) as analyzed by the AIDS, Tuberculosis and Infected Support Program, NHSO, September 30th, 2018
11) Bureau of Legal Affairs, NHSO, September 30th, 2018

1.1) Service utilization in high-cost procedures

Cardiovascular diseases

Patients with acute ST-Elevated myocardial infarction (STEMI) receiving antithrombotic and/or percutaneous coronary intervention (PCI) had increased from 6.44% in 2005 to 81.81% in 2017; however, the mortality rate within 30 days of hospitalization has decreased from 23.18% in 2005 to 17.54% in 2018 (Diagram 12) and (Tables 39 and 40 in Appendix 5)

Diagram 12 Antithrombotic and/or Percutaneous Coronary Intervention for patients with acute ST-Elevated myocardial infarction (STEMI), Fiscal Year 2005-2018

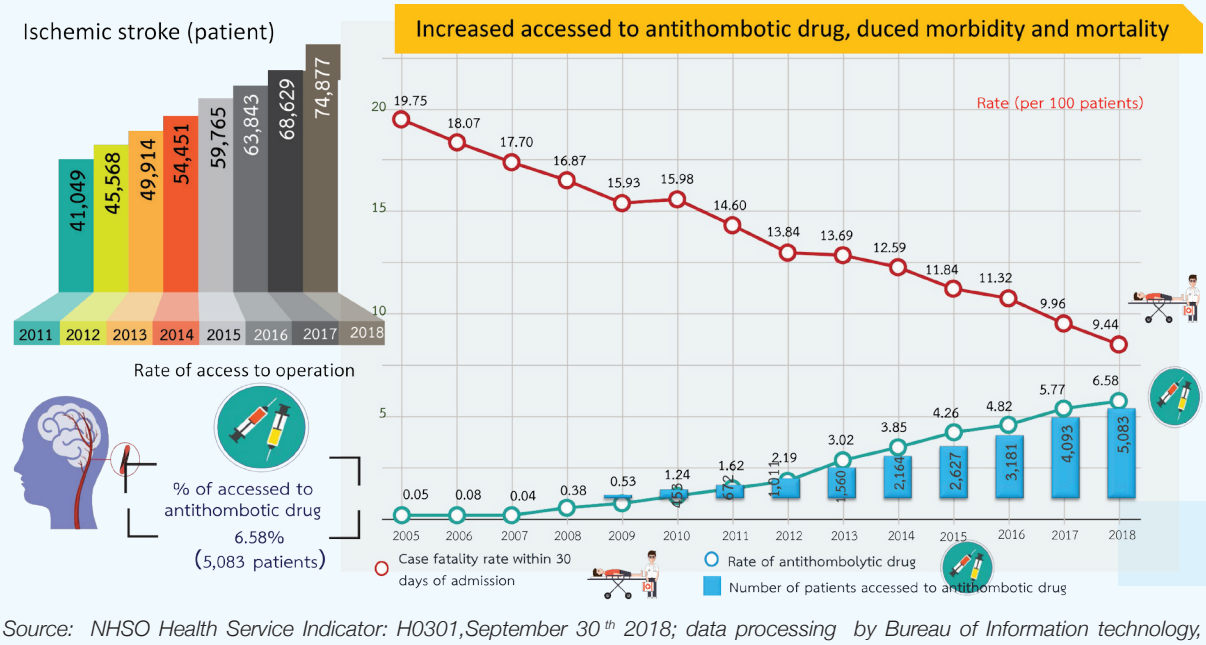


Source: NHSO Health Service Indicator: H0301,September 30th 2018; data processing by Bureau of Information technology, January 10th, 2019

Cerebrovascular diseases

For patients with Cerebral Infarction, it has been found that those who had received antithrombotics had increased from 0.05% in 2005 to 6.58% in 2018 and the mortality rate within 30 days of hospitalization had decreased from 19.45% in 2005 to 9.44% in 2018 (Figure 13) and (Tables 41 and 42 in Appendix 4)

Diagram 13 Access to antithrombotic drugs for Stroke patients, Fiscal Year 2005-2018

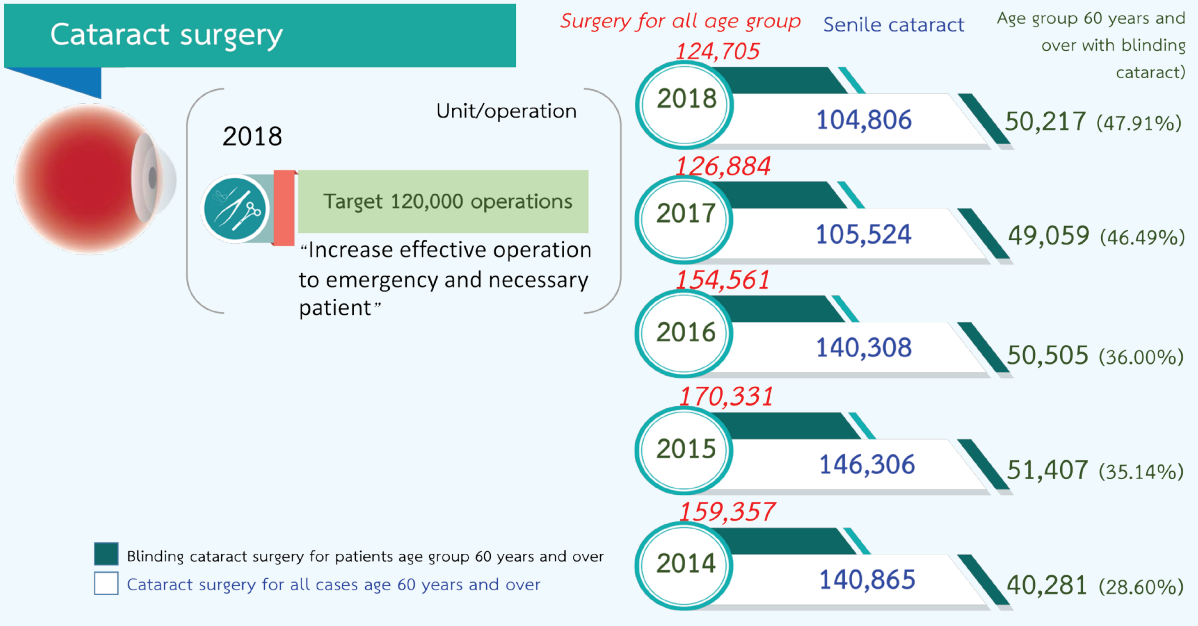


Source: NHSO Health Service Indicator: H0301,September 30th 2018; data processing by Bureau of Information technology, January 10th, 2019

Cataract

To increase the quality of life for patients with cataracts, In the Fiscal Year 2018, UC members received 124,705 cataracts surgery of which 104,806 cataract surgery were for patient age 60 years and over (senile cataracts). Of the senile cataracts, 47.91% (50,217 surgeries) were performed during the Blinding Cataract stage (Eyesight VA worse than or equal to 20/400) (Diagram 14) and (Tables 43 and 44 in Appendix 5)

Diagram 14 Access to Cataract Surgery for adults age 60 years and over, Fiscal Year 2014-2018



Source: NHSO Health Service Indicator: H0301, September 30th, 2018; data processing by Bureau of Information Technology, January 10th, 2019 Analyzed by Bureau of Health Information and Outcome Evaluation

1.2) Health Promotion and Disease Prevention

Health promotion and disease prevention are crucial strategies to decrease morbidity rate from preventable diseases and reduce national health expenditure. People should have good health behavior and avoid risk factors. The National Health Security Board, realizing the significance, has increased the per-capita budget for health promotion and disease prevention from 175 baht in 2003 to 415.5 baht in 2018, which was 2.37 times increase within 16 years. Health Promotion and Disease Prevention service utilization and the results are briefly summarized as Table 9.

Table 9 Percentage of Health Promotion and Disease Prevention service utilization, by age group, Fiscal Year 2014-2018

Items	KPIs	Performance in each Fiscal Year				
		2014	2015	2016	2017	2018
1. Maternal Health Services						
1.1	Percentage of pregnant women attending their first ANC visit at the gestation age of 12 weeks or before [1] (targeted at no less than 60%)	58.08	57.10	62.25	66.43	74.39
1.2	Percentage of pregnant women attending their ANC for 5 visits according to the criteria [1] (targeted at no less than 60%)	55.84	51.10	50.25	53.27	62.92
1.3	Percentage of postpartum women attended 3 postpartum care services according to the criteria [1] (targeted at no less than 65%)	-	49.72	49.79	51.53	63.04
1.4	Percentage of Thalassemia screening in pregnant women [2]	85.26	87.60	87.60	87.60	87.60
1.5	Maternal mortality rate per 100,000 live births for UC registered beneficiaries [3] (targeted at no more than 15% of 100,00 live births)	28.70	28.07	30.96	25.33	24.50
1.6	Rates of fetal hypoxia during delivery for UC registered beneficiaries [3] (targeted at no more than 25% per 100,000 live births)	26.16	26.52	25.74	25.73	25.82
1.7	Percentage of low birth weight (< 2,500 grams) for UC registered beneficiaries [3] (Targeted at no more than 7%)	10.29	10.29	10.57	10.74	10.70
1.8	Live birth rate in teenage pregnancy (15-19 years) for UC registered beneficiaries [3] (Targeted at no more than 40 per 1000 teenage group for UC registered beneficiaries)	46.24	43.44	41.25	39.17	35.22
2. Child Health Services						
2.1	Percentage of confirmed thyroid hormone deficiency [4] (Targeted at no less than 80%)	94.45	86.67	95.25	94.32	91.96
2.2	Percentage of child age 0-5 years with normal childhood development [1] (Targeted at no less than 80%)	93.28	81.50	91.94	95.84	96.66
2.3	Percentage of early childhood with obesity [1] (Targeted at no more than 10%)	3.57	3.55	3.57	3.27	8.35

Items	KPIs	Performance in each Fiscal Year				
		2014	2015	2016	2017	2018
3. Working Population and Elderly Health Services						
3.1	Percentage of screening for Diabetes Mellitus [1] (Targeted at no less than 90%)					
	- 35 - 59 years	74.86	67.89	75.41	84.65	86.32
	- 60 years and over	53.83	63.21	71.45	81.89	84.49
3.2	Percentage of high blood presser screening [1] (targeted at no more than 90%)					
	- 35 - 59 years	67.22	71.44	79.24	85.51	87.08
	- 60 years and over	47.83	70.28	78.34	84.10	86.72
3.3	Percentage of 60 years and over received denture services; UC beneficiaries registered [5] (Allocated Target for 2014: 35,000 beneficiaries; 2015: 35,000 beneficiaries, 2016: 40,000 beneficiaries; 2017: 40,000 beneficiaries; 2018: 40,000 beneficiaries)	98.34 (34,119)	126.74 (44,359)	135.57 (47,448)	108.73 (43,492)	107.67 (43,069)
3.4	Percentage of seasonal influenza vaccinations in risk groups [6] (Allocated Target for 2015: 2,831,998 beneficiaries; 2016: 3,154,507 beneficiaries; 2017: 3,064,981 beneficiaries; 2018: 3,400,000 beneficiaries)	88.35	78.47	78.04	87.31	78.30

Source: 1. *Health Data Center (HDC), Ministry of Public Health, September 30th, 2018, data processing on January 25th, 2018 (excluding Health Region13: Bangkok)*

2. *Monitoring the Situation of Children and Women report 2015, the National Statistical Office.*
3. *National Health Security Database (UC member), September 30th, 2018, data processing on December 30th, 2018*
4. *National Perinatal Registry Portal System, September 30th, 2018, analyzed December 30th, 2018*
5. *2018 Denture Services report. Available form http://nakhonsawan.nhso.go.th/denture/denture1.php, retrieved on September 30th, 2018, data processing on December 30th, 2018*
6. *The MoPH 43 folders, September 30th, 2018, analyzed on December 30th, 2018*

1.3) Medical Rehabilitation Services

The cumulative number of registered beneficiaries in UCS has continuously increased from 361,472 in 2005 to 1.27 million in 2018 of which 48.09% are physically disabled, 21.54% are hearing impaired and 13.93% are mental retardation. (Diagram 15)

In the Fiscal Year 2018, the number of disabled that had received physical assistive devices was 28,360 persons/33,628 devices which were classified as follows

- prosthetic arms-legs for the physical disability 6,356 persons/8,202 devices
- hearing aids for hearing impaired disability 8,302 persons/8,366 devices,
- walking sticks for the visually impaired 392 persons
- other assistive devices for other physical disability 13,789 persons/16,667 devices

The number of beneficiaries that had accessed to rehabilitation services utilization was 1,019,639 persons/3,850,436 visits classified by categories of beneficiaries as follows

1) Physically disabled 197,950 persons/ 809,853 visits

2) The elderly 480,430 persons/1,788,875 visits

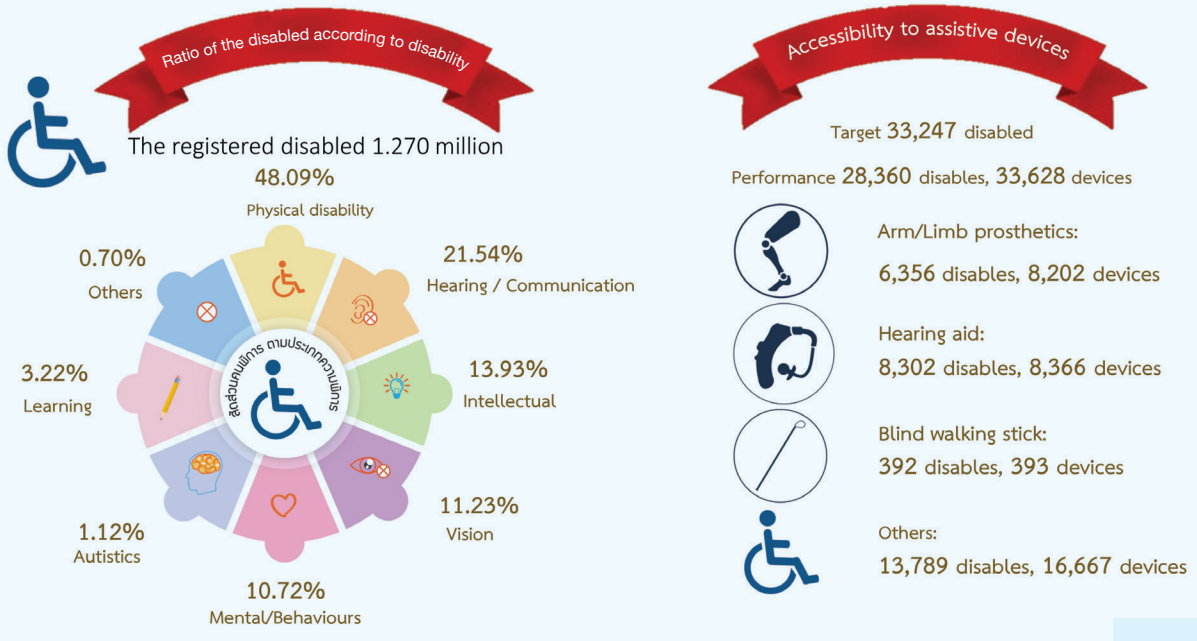
3) Patients requiring rehabilitation treatment 340,339 persons/1,246,949 visits

4) Bedridden patients 920 persons/4,759 visits

In regards to the visually impaired, the beneficiaries had received orientation and mobility (O&M) training of which 1,974 beneficiaries had received walking sticks (Diagram 16) (Tables 45, 46 and 47 in Appendix 5)

Ratio of the disabled according to disbility

Diagram 15 Registered disabled in the UCS, by types of disability, Fiscal Year 2018



Source: Bureau of Community Health Management and Bureau of Health Information and Outcome Evaluation, NHSO, September 30th, 2018. Analyzed January 10th, 2019

Diagram 16 Medical rehabilitation service utilization for the disabled, by types of services, Fiscal Year 2018

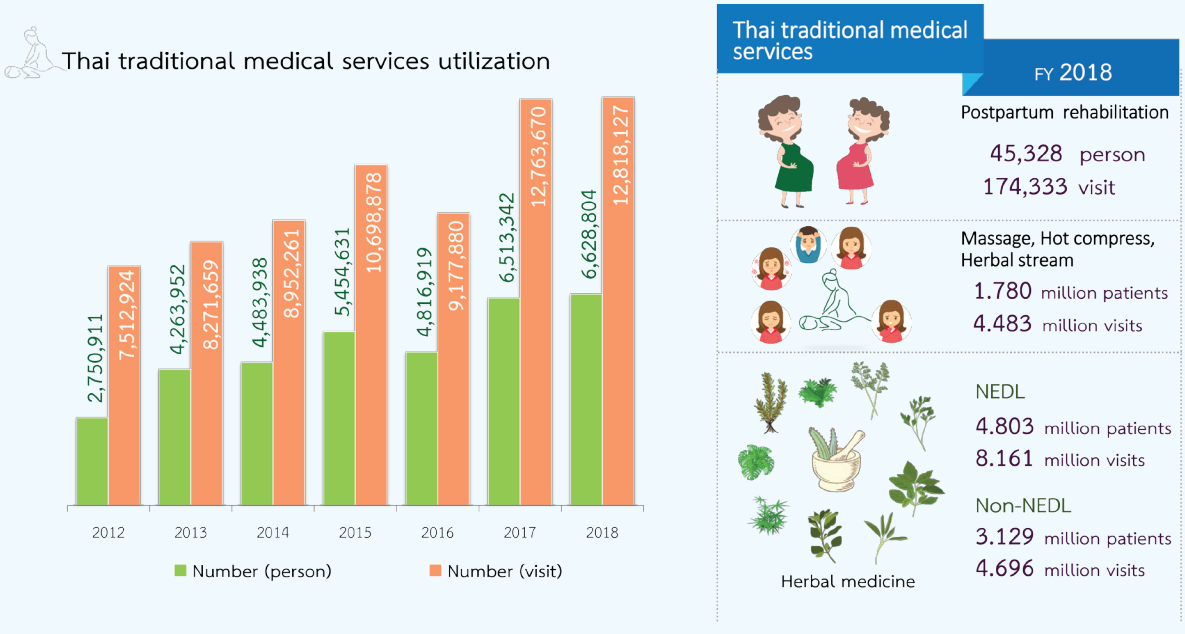
	Target	Performances	
	patient	patient	visit
Disabled person	208,591	197,950	809,853
The elderly who need rehabilitation	222,288	480,430	1,788,875
Patients who need rehabilitation	426,939	340,339	1,246,949
Homebound patient and bedridden patient	6,285	920	4,759
Total	864,103	1,019,639	3,850,436

Source: Bureau of Community Health Management and Bureau of Health Information and Outcome Evaluation, NHSO, September 30th, 2018. Analyzed January 10th, 2019

1.4) Thai Traditional Medicine

Since 2012-2017, the number of beneficiaries having access to Thai traditional medicine has increased at an average of 2 visits / person/ year; the services include massage, hot compression, herbal steaming, postpartum rehabilitation and herbal medicine in the National List of Essential Drugs (NLEM). In the Fiscal Year 2018, it has been discovered that 6.629 million beneficiaries had rendered 12.818 million visits of Thai traditional medical services of which 1.780 million beneficiaries had 4.483 million massages-compressions-herbal steaming visits, 45,328 postpartum women had access to postpartum rehabilitation services at 174,333 visits and 4.803 million beneficiaries received herbal medical products from the National List of Essential Medicine at 8.161 million visits (Diagram 17) (Tables 49 and 50 in Appendix5).

Diagram 17 Thai Traditional Medical service utilization, Fiscal Year 2012-2018

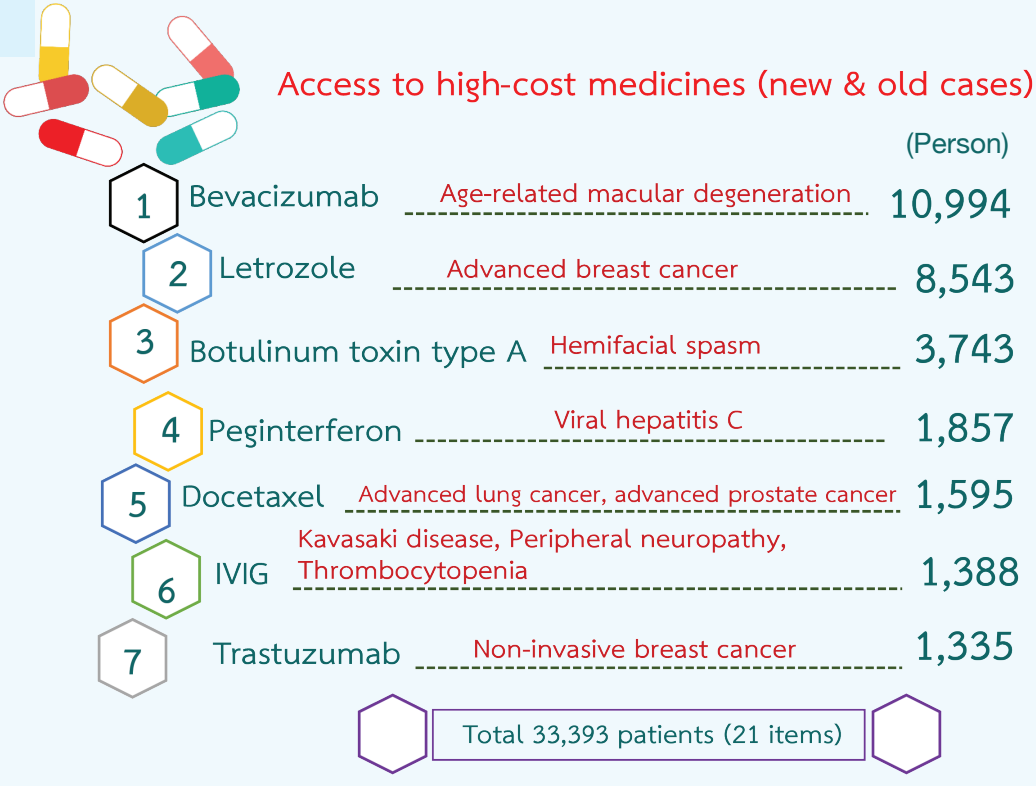


Source: Bureau of Health Information and Outcome Evaluation, NHSO, September 30th, 2018, analyzed January 10th, 2018
Note: Traditional Thai Medicine for massages, compression, herbal steaming, post-delivery rehabilitation services and herbal medications (those found in the National List of Essential Medicines)

1.5) Medicine and Medical Supplies

In the fiscal year 2018, a total of 33,393 patients had access to high-cost medicines or NLEM E(2) for 12 items of 29 diseases groups, of which 16,829 patients were new cases while 16,564 patients were old cases that required continuous medications. The drug with the highest cost was Bevacizumab for 10,94 patients with optic nerve degeneration followed by Letrozole for 8,543 advanced breast cancer patients and Botulinum Toxin Type A for 3,743 patients with hemifacial spasm and Peginterferon for 1,857 patients with viral hepatitis C (Diagram 18) (Table 51 in Appendix 5). The number of 5,312 beneficiaries had accessed to orphan drugs or antidote drug of which 1,889 patients received Malayan Pit Viper antivenin followed by 1,527 patients received Green Pit Viper antivenin and 870 patients accessed to Hematoxin polyvalent snake antivenom (Table 10).

Diagram 18 Access to Drug List E (2) both new and old cases, Fiscal Year 2018



Source: Bureau of Medicines and Medical Supply Management, NHSO, September 30th, 2018

Table 10 Access to orphan and antidote drugs, Fiscal Year 2014-2018

Unit: person

Drug List	2014	2015	2016	2017	2018
1. Sodium nitrite inj.	7	7	17	12	6
2. Sodium thiosulfate 25% inj.	16	8	33	25	17
3. Succimer cap. (DMSA)	1	1	6	1	3
4. Methylene blue inj.	14	31	69	89	47
5. Glucagon kit	2	-	-	-	-
6. Dimercaprol inj. (British Anti-Lewisite; BAL)	11	5	4	2	5
7. Digoxin-specific antibody fragments	1	1	4	-	-
8. Sodium Calcium edetate (Calcium disodium edetate) (Ca Na2 EDTA)	15	7	18	19	4
9. Botulinium antitoxin	5	2	-	-	1
10. Diptheria antitoxin	105	51	94	82	59
11. Esmolol inj.	21	25	42	6	-
12. Polyvalent antivenum for hematotoxin	509	691	1,041	1,001	870
13. Polyvalent antivenum for neurotoxin	98	159	208	178	189

Drug List	2014	2015	2016	2017	2018
14. Green Pit Viper antivenin	1,754	1,952	2,227	1,838	1,527
15. Malayan Pit Viper antivenin	2,239	2,007	2,498	2,687	1,889
16. Russell's Viper antivenin	156	165	165	208	144
17. Cobra antivenin	521	577	672	716	483
18. Malayan Krait antivenin	30	19	13	20	18
19. Diphenhydramine inj.	-	-	30	33	50
Total	**5,505**	**5,708**	**7,141**	**6,917**	**5,312**

Source: Bureau of Medicines and Medical Supply Management, NHSO, September 30th, 2018

2) Services for specialized care

For access to non-capitation medical services by eligible beneficiaries, the majority have exceeded the target (Table 11)

Table 11 Services for specialized care, Fiscal Year 2018

Items	Unit	Target (according to budget approved)	Outcome FY 2018	Percentage
1. HIV Positive and AIDS Patients				
1.1 Received continuous anti-retroviral therapy	Individuals	224,400	261,930	116.72
1.2 Support for at-risk group and prevention of HIV	Individuals	72,500	77,589	107.02
2. Renal replacement therapy for end-stage chronic kidney failure	Individuals	52,976	57,288	108.14
3. Screening for complications of diabetes and hypertension	Million individuals	2.9072	3.9819	136.97
4. The care of chronic psychiatric patients in the community	Individuals	10,250	10,389	101.36
5. Long-term care for dependent elderly	Individuals	193,200	211,138	109.28
6. Primary Care Cluster services	Times	652,173	332,968	51.06
7. Allocated additional budget to service units in remote /risk areas and the 3 provinces in the southern part of Thailand	Units	175	202	115.43

Source: The National Health Security Office, September 30th,2018

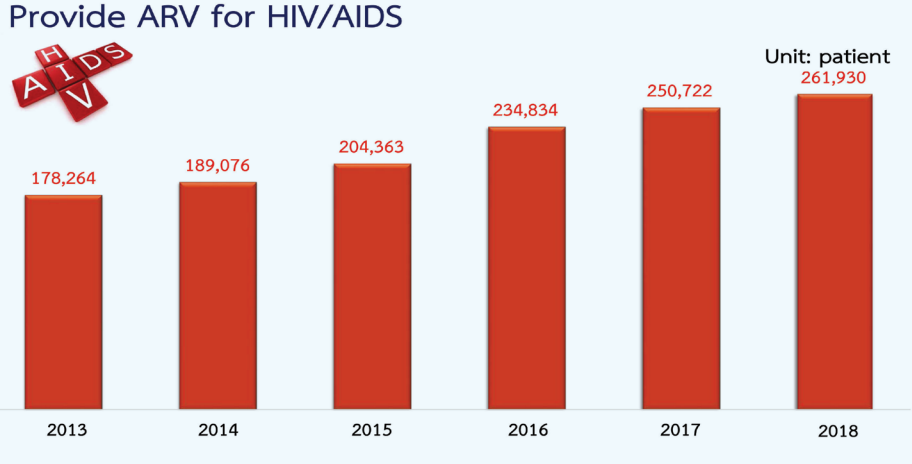
2.1) HIV/AIDS

Thailand has established a road map for ending the AIDS epidemic as a public health threat in Thailand by 2020. (Fast-Track-Targets by 2020: 90-90-90). In this regard: HIV/AIDS patients aware of their status: access to anti-retroviral therapy: suppressed Viral Load (VL < 1000 copies/ml). The number of HIV/AIDS patients having access to anti-retroviral drug have been gradually increasing, reaching the highest in fiscal year 2016, as a result of the HIV policy allowing for all patients to receive the anti-retroviral therapy consistent with the 'AIDS: Know Fast, Treat Fast, Can Cure'; however, the policy neglected the level of CD4 (Diagram 11).

The Fiscal Year 2018 estimated that the number of People Living Positively with HIV (PLHIV) at 429,863 individuals of which 306,230 individuals were eligible for the UCS. Moreover, the database of the National AIDS Program (NAP) revealed that there are 294,023 HIV-positive and AIDS patients, who are aware of their status, while 283,960 are registered with the NAP, 261,930 received anti-retroviral therapy (exclusive of deaths) (89.1% when compared to those aware of their status), 192,641 received anti-retroviral therapy resulting in suppression of viral load (VL suppressed, VL <1000 COPIES/ ML) (73.6% when compared to those receiving anti-retroviral therapy) (Diagram 19)(Tables 51 and 52 in Appendix 5)

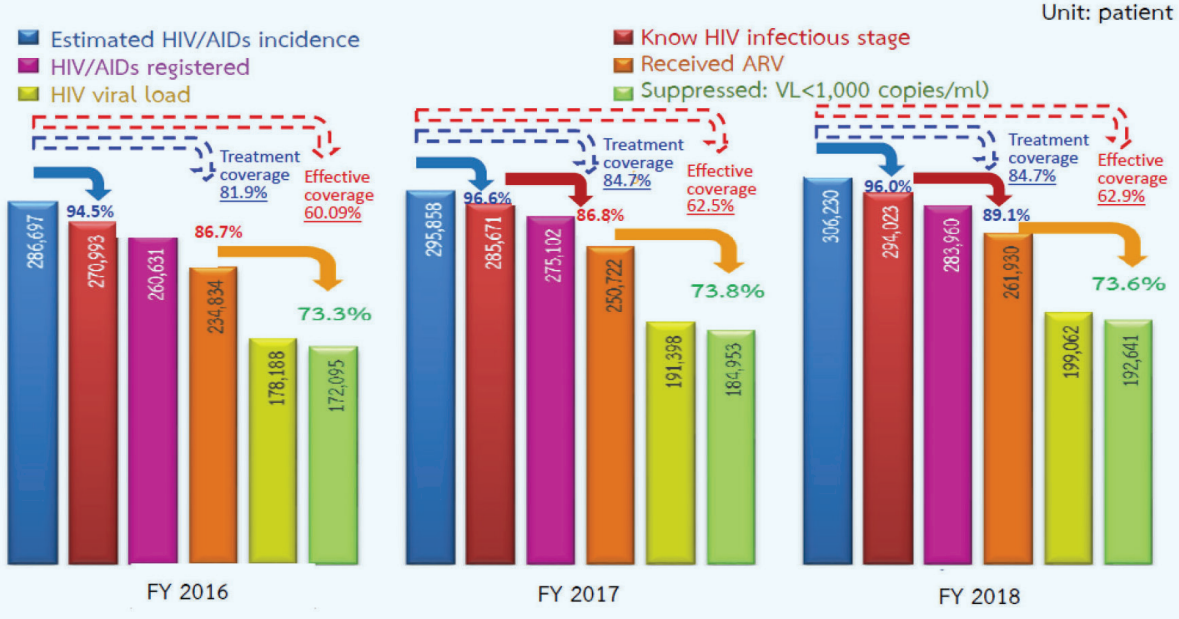
When taking into account the possibility of resolving AIDS-related issues after evaluation of effective coverage, it has been found that 85.5% HIV-positive and AIDS patients have been receiving continuous anti-retroviral therapy and 62.9% have been able to suppress their viral load when compared to the estimates of PLHIV. There is still another 37.1% of HIV patients that must rapidly have access to continuous anti-retroviral therapy in order to control the spread of the virus. Therefore, in order to decrease the transmission of HIV in risk groups and decrease the expenditure burden, there has been promotion and prevention services for HIV in risk groups such as men who have sex with men (MSM), transgender (TG), male sex workers (MSW), female sex workers (FSW), people who inject drugs (PWID). 77,589 individuals within the risk groups had received support, consultations, blood screening for HIV within the FY2018.

Figure 11 Anti-retroviral therapy for HIV/AIDS, Fiscal Year 2013-2018



Source: National AIDS Program, AIDS, Tuberculosis and Infectious Disease support program, NHSO. September 30th, 2018

Diagram 19 HIV/AIDS services and effective coverage, Fiscal Year 2013-2018



Source: *National AIDS Program, AIDS, Tuberculosis and Infectious Disease Support Program, NHSO, September 30th, 2018*

Notes: 1. *Estimated PLHIV by the National Center for AIDS Management, Department of Disease Control, Ministry of Public Health*

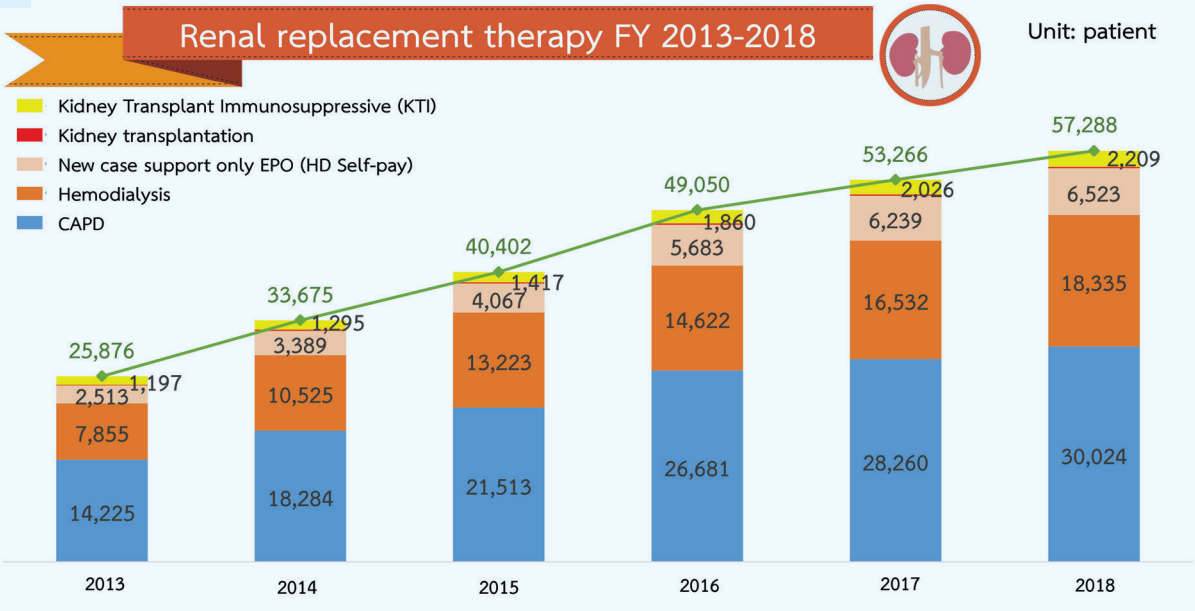
2. *Viral Load Suppressed: HIV/ AIDS patients received 12 months of continuous anti-retroviral therapy with VL<1000 copies/ml test*

2.2) Chronic renal failure

End-stage renal disease patients must receive Renal Replacement Therapy whilst waiting for kidney transplantation, which is a burden on a household expenditure with high probability of leading to bankruptcy from medical expenses. In light of this, the UCS has issued a PD-First policy, Peritoneal Dialysis Policy, since 2008 in cooperation with other sectors in order for patients to have increased access to Renal Replacement Therapy for end-stage renal disease patients to have a better quality of life, lead a normal social and working life whilst decreasing hospital admissions.

In the FY 2018, there were a total of 57,288 end-stage renal disease patients who received RRT of which 30,024 had received Continuous Ambulatory Peritoneal Dialysis (CAPD), 24,858 received Hemodialysis (HD). The NHSO supported 6,523 patients who did not pass the committee's approval and had to self-pay for the HD for the expenses of Erythropoietin (EPO), 197 received kidney transplantation and 2,209 both new and old patients received kidney transplant immunosuppressant drugs (KTI) (Diagram 20 and Table 12)

Diagram 20 Renal Replacement Therapy for chronic renal failure patients, by therapy types, FY 2013-2018



Source: Chronic Renal Failure Patients 2014-2018, Bureau of Information Technology, September 30th, 2018; data processing on October 8th, 2018, analyzed by Kidney Failure Support System, NHSO

Notes:
1. *Kidney failure patients can change their treatment regimen according to the fiscal year*
2. *Number of patients receiving services excludes number of dead patients to prevent repeated counting*
3. *Hemodialysis is a dialysis service for patients with end-stage renal disease that meets the criteria; the fund supports expenses for blood vessel preparation, hemodialysis fee, erythropoietin stimulating drugs and management fee*
4. *HD Self-Pay, the Fund supports only PEO-stimulating drugs and management fee for patients receiving renal replacement therapy by hemodialysis without intention to receive Continuous Ambulatory Peritoneal Dialysis (CAPD) and did not pass the approval of local End-stage Renal Disease Support committee to have access to the treatment at health region level*

Table 12 Renal replacement therapy, Fiscal Year 2014-2018

Units: Individuals

Service Types	2014	2015	2016	2017	2018
1. Continuous Ambulatory Peritoneal Dialysis (CAPD)	**18,284**	**21,513**	**26,681**	**28,260**	**30,024**
Old Patients (Old patients from last year's statistics)	10,748	13,817	19,125	20,450	21,693
New Patients (within year)					
- New registered patients	7,169	7,320	7,224	7,413	7,858
- Patients switched to CAPD	367	376	332	397	473
CAPD patients changed treatment methods (within year)					
- Dead	4,066	4,590	4,998	5,261	6,516
- Patients opting out of CAPD	401	433	1,216	1,293	1,547
- Patients stopped treatment/ cannot F/U			17	13	17

	Service Types	2014	2015	2016	2017	2018
2.	**Hemodialysis (HD)**	**10,525**	**13,223**	**14,622**	**16,532**	**18,335**
	Old Patients (Old patients from last year's statistics)	6,676	9,011	11,308	12,861	14,644
	New Patients (within year)					
	- New registered patients	2,513	2,680	1,545	1,692	1,715
	- Patients changed to HD program	1,336	1,532	1,769	1,979	1,976
	Patients exited from HD program (within year)					
	- Dead	1,484	1,669	1,680	1,801	2,127
	- Patients opting out of HD	30	36	81	87	96
	- Patients stopped treatment/ cannot F/U			0	0	0
3.	**New HD Self-Pay**	**3,389**	**4,067**	**5,683**	**6,239**	**6,523**
	Old Patients (Old patients from last year's statistics)	1,992	2,529	4,087	4,380	4,858
	New Patients (within year)					
	- New registered patients	1,365	1,488	1,550	1,819	1,644
	- Patients changed to HD Self-Pay program	32	50	46	40	21
	HD Self-Pay patients exited program (within year)					
	- Dead	715	816	850	807	996
	- Patients opting out of HD Self-Pay	145	139	453	574	684
	- Patients stopped treatment/ cannot F/U			0	0	0
4.	**Kidney Transplant**	**182**	**182**	**204**	**209**	**197**
	- New Patients (within year)	182	182	204	209	197
	- Dead	9	15	17	13	25
5.	**Kidney Transplant Immunosuppressants (KTI)**	**1,295**	**1,417**	**1,860**	**2,026**	**2,209**
	Old Patients (Old patients from last year's statistics)	1,068	1,189	1,608	1,792	1,953
	New Patients (within year)	227	228	252	234	256
	KTI patients exited program					
	- Dead	65	83	41	40	80
	- Patients opting out of KTI	41	35	27	33	34
	TOTAL RRT	**33,675**	**40,402**	**49,050**	**53,266**	**57,288**

Source: Chronic Renal Failure Patients 2014-2018, Bureau of Information Technology, September 30th, 2018; data processing October 8th, 2018, analyzed by Kidney Failure Support System, NHSO

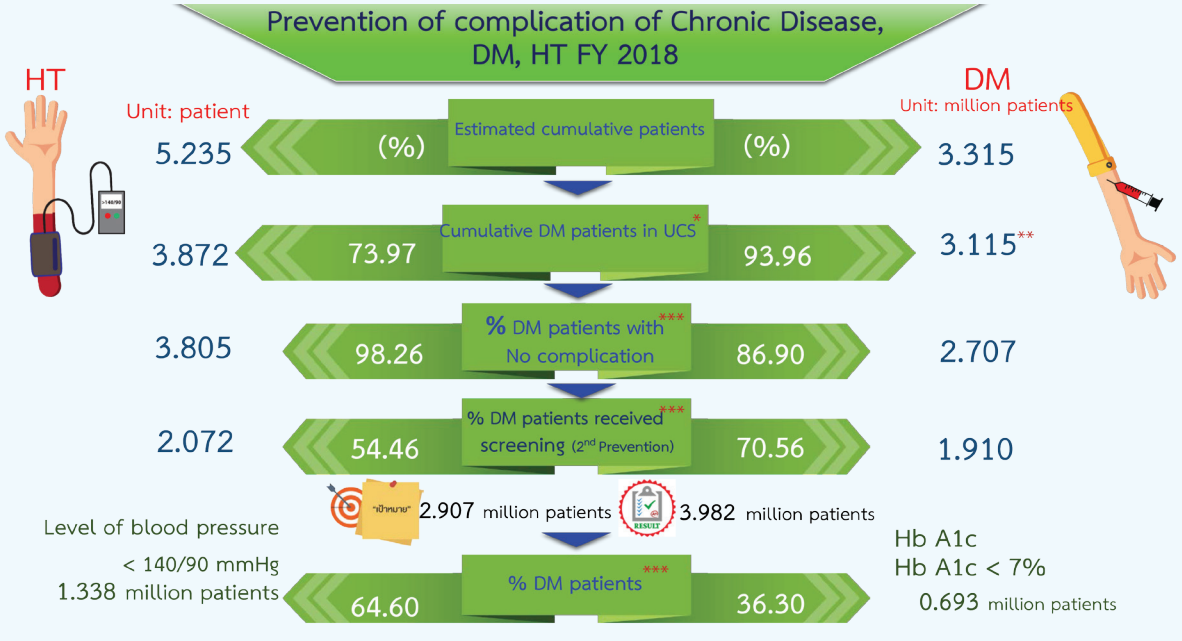
Notes:
1. *Kidney failure patients can change their treatment regimen according to the fiscal year*
2. *Number of patients receiving services excludes number of dead patients to prevent repeated counting*
3. *Hemodialysis is a dialysis service for patients with end-stage renal disease that meets the criteria; the fund supports expenses for blood vessel preparation, hemodialysis fee, erythropoietin stimulating drugs and management fee*
4. *HD Self-Pay, the Fund supports only PEO-stimulating drugs and management fee for patients receiving renal replacement therapy by hemodialysis without intention to receive Continuous Ambulatory Peritoneal Dialysis (CAPD) and did not pass the approval of local End-stage Renal Disease Support committee to have access to the treatment at health region level*

2.3) Diabetes Mellitus and Hypertension

Diabetes Mellitus (DM) and Hypertension (HT), which are preventable, are resultant of behavior and lifestyle. Moreover, treatment after onset of diseases is not enough to reduce the long-term burden on the patient, patient's family and society; therefore, prevention of the diseases must be proceeded in parallel with the treatments. The NHSO has allocated increased funds, apart from the capita payment, for expenses resultant of drugs, screening for risks/ complications and self-management for patients to prevent progression of severity and delay the complications of Diabetes Mellitus and Hypertension through continuously elevating services to the standards.

For the FY 2018, 3.982 million DM and Hypertensive patients had received control and secondary prevention classified into 1.910 million DM and DM-Hypertensive patients, 2.072 million hypertensive patients. 70.56% of DM with/without hypertension without complications (1.0910 million from 2.707 million) had access to 2nd prevention that is the patients had received a minimum of once a year screening for HbA1c, Lipid Profile, Micro albuminuria, retinal detachment and detailed foot exams. Of those screened, only 36.30% were able to control their blood sugar (HbA1c <7%) and 54.56% of hypertensive patients, who had no complications (2.0172 million from 3.805 million), received a minimum of once-a-year screenings for levels of Fasting Plasma Glucose, Lipid Profile, Urinalysis and 64.60% were able to control their blood pressure to lower than 140/90 (Figure 21)

Diagram 21 Accessibility to secondary prevention services for DM and HT patients, Fiscal Year 2018



Source: *Bureau of Health Information and Outcome Evaluation, NHSO, September 30th, 2018, and Analyzed January 10th, 2019*

Notes: * *Information on living UC Diabetic and Hypertensive patients at the beginning of the fiscal year*

** *Diabetic patients' information not inclusive of DM Type I*

*** *Information from evaluation report of DM Type II and Hypertensive patients 2015: cited from MedResNet*

2.4) Community care for chronic psychiatric patients

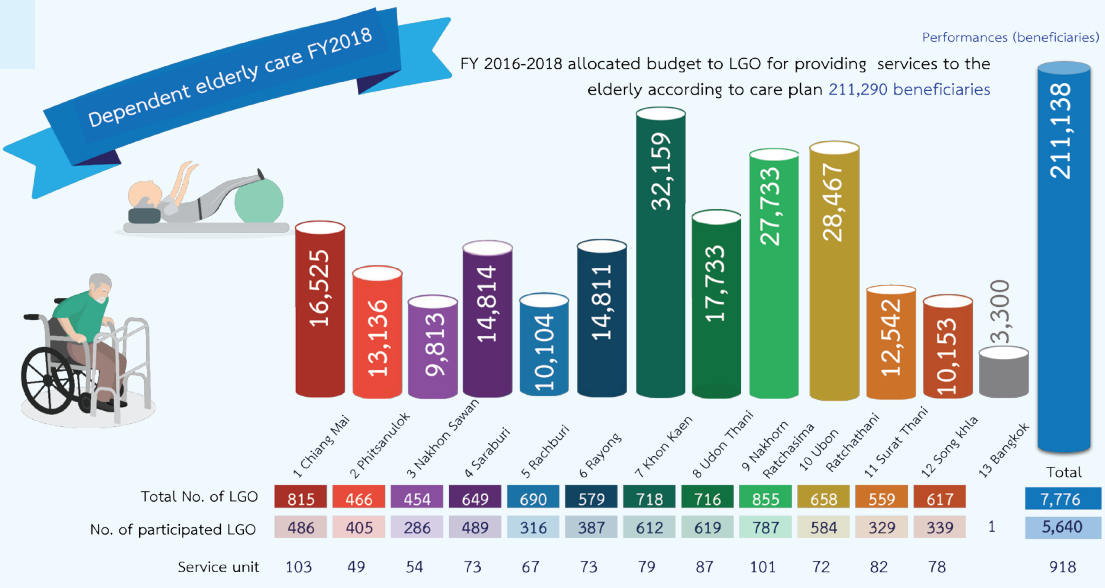
For chronic psychiatric patients within communities to receive close monitoring and continuous care in order to return to normal life in society, the patients were registered for Individual Care Plan and a service system was established to connect network service units (regular service units or primary care) to central networks/ hospices (Psychiatric Hospitals or Central Hospitals, General Hospitals with Psychiatrists) on a community level. The FY2018 had allocated funds to 114 central networks / hospices consisting of 908 Psychiatric Hospitals, Central Hospitals, General Hospitals and networks composed of regular and primary care service units, in collaboration with communities, that can continuously manage, care and monitor 10,389 psychiatric patients (101.36%) in communities from the allocated target of 10,250 patients (Source: Bureau of Primary Care Management, NHSO, 30th September 2018) (Table 53 in Appendix 5).

2.5) Long-term care for dependent elderly

There had been an integration between the Local Administrative Organization (LAOs) and local units to manage services for the dependent elderly for the elderly to understand, have access and rely on. The integration started off with an assessment of health needs of the elderly to live a normal life (Barthel ADL index) including establishing an Individual Care Plan and managing public health services for the dependent elderly.

The Fiscal Year 2018, the NHSO allocating 1,159 million baht as payment for public health services elicited by 193,200 dependent elderly, who are registered with the UC (including former elderly receiving continuous care). 211,138 dependent elderlies had received care from LAOs, which were allocated budgets, according to the Individual Care Plan (2016 had 80,826 dependent elderly; 2017 had 94,527 new dependent elderly and 2018 had 35,785 new dependent elderly) (Diagram 22) (Table 54 in Appendix 5).

Diagram 22 Number of dependent elderly received home visit, Fiscal Year 2018



Source: Bureau of Community Health Management, NHSO, September 30th , 2018

Note: Fiscal Year 2018 had allocated funds to LAOs to care and manage 35,785 new dependent elderly in 2018; 45,063 old dependent elderly in 2016; and 51,195 old dependent elderly in 2017 totaling to 132,043 individuals.

2.6) Primary Care Cluster (PCC)

In the Fiscal Year 2018, 240 million baht was allocated to develop the primary care systems in accordance with the governmental policy to have a primary care system integrated with family medicine caring for citizens in appropriate proportions. This will help increase access to primary care units in regards services within the center and community. A target has been set for outpatients' visits to Primary Care Centers (PCC) with Family Doctor to reach 652,173 times.

The services rendered by the PCC with Family Doctor in NHSO Regional Office 1-12 in 1st/2018 October 2017 – March 2018 (PCC 533 teams) and 2nd/2018 April-July 2018 (PCC 830 teams) and 4 areas' model Bangkok Family Medicine clinics (PCC 27 teams) had reached a total of 332,968 times (51.06%) from the 652,173 times (Source: Primary Care Center Support Office, NHSO, as on 30th September 2018) (Table 55 in Appendix 5).

2.7) Expenditures of service units in remote & high-risk areas and the three Southern Border Provinces

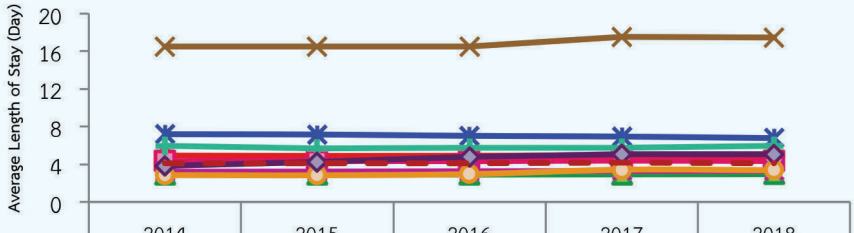
The NHSO had allocated additional public health funds of 1,490.288 million baht to increase efficiency for 164 services units affiliated with the Office of the Permanent Secretary of MoPH. The funds were used for criteria payments to 158 units in rural/high-risk areas and 44 units in southern border provinces of which 38 units receive payments of both criteria (Source: Data from Bureau of Fund Allocation Reimbursement, NHSO, 30th December 2018) (Table 56 in Appendix 5).

3.6 Service efficiency, Quality of care and Outcome of services

1) Service efficiency

Average Length of Stay (LOS) reflects the efficiency of inpatients' services as the longer stay, the more consumption of resources. According to the UC in-patients' database from 2014-2018, the length of stay averaged at 4.13 – 4.19 days with a tendency to remain constant. In 2018, the longest average in-patient length of stay was found in a specialist hospital (17.50 days) followed by university hospital (6.81 days) while small community hospitals (F) and large community hospitals (M) had the lowest in-patient length of stays at 2.97 days and 3.32 days, respectively. Simultaneously, central and general hospitals' average inpatients LOS also has a tendency to remain consistent (Figure 12).

Figure 12 Average Length of Stay (LOS),by types of service units, Fiscal Year 2014-2018



	2014	2015	2016	2017	2018
Central Hospital	4.93	4.89	4.91	4.93	4.86
General Hospital	4.34	4.36	4.35	4.38	4.35
Small Community Hospital (F)	2.92	2.91	2.93	2.96	2.97
Host Community Hospital (M)	3.25	3.26	3.29	3.32	3.32
University Hospital	7.24	7.20	7.06	6.98	6.81
Private Hospital	2.87	2.85	2.97	3.43	3.38
Specialist Hospitals such as cancer, psychiatric	16.54	16.50	16.54	17.55	17.50
Hospitals unaffiliated with MoPH	5.96	5.71	5.81	5.78	5.99
Excellence Centers such as Banphaeo Hospital	3.84	4.29	4.80	5.06	5.07
Overall LOS	4.14	4.14	4.13	4.19	4.16

Source: IP E-Claim of FYs 204-2018, Bureau of Information Technology, February 10th, 2019, analyzed by Bureau of Information and Outcome Evaluation, NHSO

The **Case Mix Index (CMI),** the sum of Adjusted Relative Weight per all inpatient cases in a specific time, reflects the efficiency of the service unit, allocation of resources and decision to admit the patient for treatment within the hospital. A low inpatient relative weight (CMI) states that the service unit was able to utilize lower resources for inpatients with less severe diseases in a short-admission period.

UC database shows that Adjusted Relative Weight (CMI) was between 1.22-1.26 with a tendency to remain stable (Figure 13)

Figure 13 Average Adjusted Case Mix Index (CMI), types of service unit, Fiscal Year 2014-2018

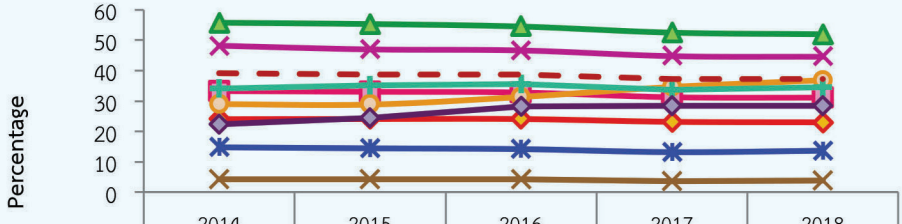
	2014	2015	2016	2017	2018
Central Hospital	1.89	1.91	1.93	1.97	1.96
General Hospital	1.31	1.32	1.32	1.37	1.36
Small Community Hospital (F)	0.60	0.61	0.61	0.63	0.63
Host Community Hospital (M)	0.76	0.78	0.78	0.81	0.82
University Hospital	2.77	2.78	2.81	2.88	2.80
Private Hospital	1.57	1.68	1.64	1.69	1.57
Specialist Hospitals such as cancer, psychiatric	2.51	2.42	2.44	2.45	2.47
Hospitals unaffiliated with MoPH	1.51	1.51	1.52	1.56	1.54
Excellence Centers such as Banphaeo Hospital	1.45	1.49	1.50	1.46	1.43
Overall	1.22	1.23	1.23	1.26	1.24

Source: IP E-Claim of Fiscal Year 2014-2018, Bureau of Information Technology, February 10th, 2019, analyzed by Bureau of Health Information and Outcome Evaluation, NHSO.
Note: Exclusive of Z380 code (Well-being)

Relative Weight (RW) refers to the average utilization of resources in treating inpatients according to the DRG compared to the average total treatment cost of the patient. Patients with lower RW reflects the lower level disease severity and necessity of hospitalization.

The largest percentage of patients with lower than 0.5 in RW in 2018 was at small community hospitals (M) at 51.91% indicating that the a larger proportions of patients hospitalized were from diseases with lower levels of severity followed by large community hospital (M) and private hospitals at 44.62% and 36.79%, respectively (Figure 14).

Figure 14 Percentage of admission in the UCS with Relative Weight lower than 0.5, by type of service unit, Fiscal Year 2014-2018

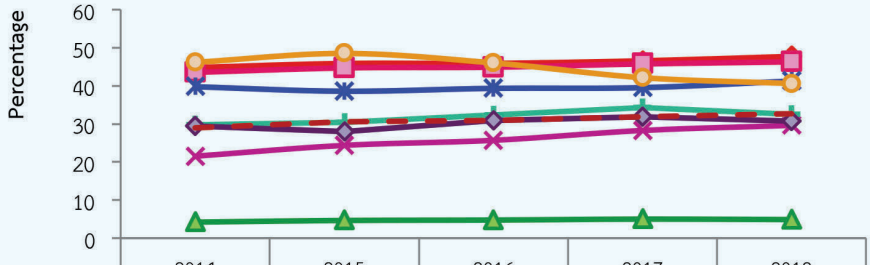


	2014	2015	2016	2017	2018
Central Hospital	24.04	24.10	24.09	23.09	22.94
General Hospital	33.23	33.01	32.77	31.26	31.12
Small Community Hospital (F)	55.70	55.27	54.44	52.42	51.91
Host Community Hospital (M)	48.11	46.94	46.62	44.81	44.62
University Hospital	14.87	14.51	14.24	13.15	13.66
Private Hospital	29.01	28.86	31.34	34.60	36.79
Specialist Hospitals such as cancer, psychiatric	4.24	4.38	4.20	3.73	3.93
Hospitals unaffiliated with MoPH	34.19	35.23	35.49	33.67	34.48
Excellence Centers such as Banphaeo Hospital	22.38	24.34	28.18	28.51	28.42
Overall LOS	39.07	38.80	38.72	37.31	37.30

Source: IP E-Claim of Fiscal Year 2014-2018, Bureau of Information Technology, February 10th, 2019, analyzed by Bureau of Health Information and Outcome Evaluation, NHSO.
Note: Exclusive of Z380 code (Well-being)

As for the **percentage of Caesarean Sections** in the UCS, there was an increase from 29.03% in 2014 to 32.68% in 2018. This is an indicator of patients opting for Caesarean sections resulting in an increase in consumption of resources and when classified according to types of service units, it is evident that caesarean sections has increased in all service unit types (Figure 15).

Figure 15 Percentage of Caesarean Section in UCS, by type of service unit, Fiscal Year 2014-2018



	2014	2015	2016	2017	2018
Central Hospital	44.80	45.88	45.90	46.59	47.77
General Hospital	43.62	44.77	44.96	45.81	46.33
Small Community Hospital (F)	4.27	4.69	4.80	5.03	4.92
Host Community Hospital (M)	21.45	24.33	25.66	28.28	29.62
University Hospital	39.83	38.64	39.40	39.59	41.33
Private Hospital	46.24	48.62	46.10	42.15	40.60
Hospitals unaffiliated with MoPH	29.86	30.43	32.31	34.24	32.51
Excellence Centers such as Banphaeo Hospital	29.39	27.96	30.87	31.89	30.68
Overall	29.03	30.52	30.91	31.90	32.68

Source: IP E-Claim of Fiscal Year 2014-2018, Bureau of Information Technology, February 10th, 2019, analyzed by the Bureau of Information and Outcome Evaluation, NHSO.

2) Quality of care

The National Health Security committee has issued efficiency- and quality-driven policies through the implementation of financial and fiscal mechanisms to support the quality development of service units. This was accomplished under the Quality and Outcomes Frameworks project of the UK and the NHSO has implemented the indicators to assess the service quality of primary care units in 2014 with the aim of using financial strategies to stimulate or motivate service units to continuously develop into a primary care unit and achieve the indicated results. The global Budget is allocated according to the registered individuals per district while the service units monitor the specified indicators, which reflect the 4 service management qualities consisting of:

1. Health Promotion and Disease Prevention
2. Primary Care Management
3. Organization development, service connections, delegation and system management
4. Quality and Outcomes of performances reflecting the public health requirements of the locality

In the Fiscal Year 2018, NHSO had proceeded with the committee's policies focusing on uplifting quality of services, provided from a collaboration between the Ministry of Public Health, NSHO and affiliated units, starting from operation guidelines, selection of indicators that reflect service quality and creating incentives for services units to provide quality services including continuously developing health information system and to have the smallest operational changes to prevent effects on the service units' operation.

The management budget, which is compensated according to the criteria of service quality, are from 3 sources: 1. 9.00 baht per UCS out-patient, from Out-patient statement, for 48.797 million population; 9.00 baht per Thai citizen, from Health Promotion and Disease Prevention Fund, for 65.700 million population; and 2 baht per UCS citizen, from Quality and Outcome Framework payment system, for 48.797 million population

The 2 components indicating the Quality and Outcome of Public Health services are:

1. No more than 6 indicators: an integration between the NHSO, MoPH, Thai Health Promotion Foundation (THP.) for each The districts to be reimbursed according to the QOF.
2. No more than 5 district-level indicator: The districts has the freedom to choose the available indicators or assign additional indicators by using mechanisms relevant to the local population; the indicators are to be developed after approval from the Sub-District Health Security Committee

The indicators focus more on the results rather than the processes themselves; moreover, the data used had been retrieved from that present in the information database in order to decrease the responsibilities for data-collecting units. This data is representative of all affiliated units, in all levels, and is also representative of public health issues such as disease with high burden, high risks and high costs; additionally, the data is consistent with problems and context of each location.

The QOF of the Fiscal Year 2018 indicated a better service compared to the year before as a result of development in service quality of Primary care Units and Regular Units possibly resulting in citizens enjoying continuous standard services as seen in Table 13.

Table 13 Performance according to Quality and Outcome Framework (QOF) indicators, Fiscal Year 2017-2018

	Indicator for Quality and Outcome Framework	2017	2018
Indicator 1	Percentage of Screening DM in population 35-74 years of age under UCS (Target: >=90%)	59.34	56.29 (All schemes 50.58)
Indicator 2	Percentage of Screening HT in population 35-74 years of age under UCS (Target: >=90%)	60.86	56.87 (All schemes 51.26)
Indicator 3	Percentage of ANC that received first antenatal care within 12 weeks under UCS (Target >=60%)	53.80 (All schemes 53.50)	53.20 (All schemes 52.83)
Indicator 4	Percentage of Pap test for cervical cancer within 5 years in women 30-60 years of age under UCS (Target >=80% within 5 years)	39.86 (All schemes 34.64)	41.80 (All schemes 36.30)
Indicator 5	Rational Drug Use (RDU) of antibiotics for out-patients under UCS		
	5.1 Percentage of Rational Drug Use: RDU in antibiotics for Acute Diarrhea out-patients (Target <=40%)	39.08	24.07
	5.2 Percentage of Rational Drug Use: RDU in antibiotics for Respiratory Infection out-patients (Target <=40%)	32.92	20.57
Indicator 6	Admission rate in Ambulatory Care Sensitive Condition: ACSC under UCS in Epilepsy, COPD, Asthma, Diabetes Mellitus and Hypertension patients compared with the previous Year (Target: admission rate less than previous year)	+8.23	+7.56

Sources: 1. Bureau of Primary Care Management, NHSO, September 30th,2018, analyzed on January 10th,2018.

2. Bureau of Health Information and Outcome Evaluation, NHSO, data as of September 30th, 2018, analyzed on January 10th,2018.

Notes: 1. The Annual Quality and Outcome Framework of 2018 report had utilized data from the 3rd, 4th trimesters of Fiscal Year 2017, and 1st , 2nd trimesters of Fiscal Year 2018.

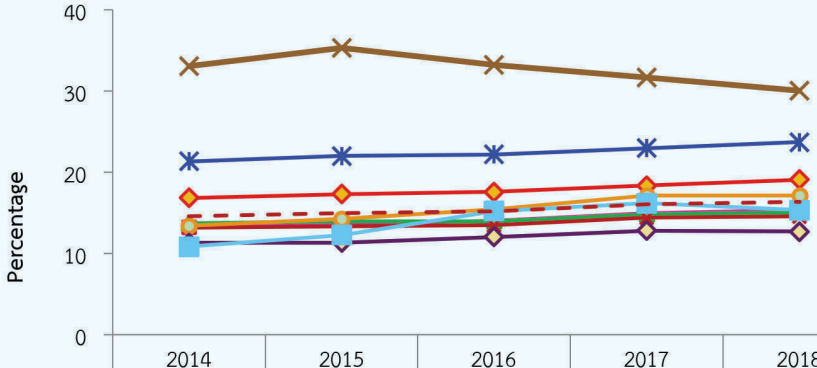
2. The 3rd and 4th indicators were continuous Fiscal Year 2017 under the Quality and Outcome Framework.

3. The 6th indicator is the difference between admission rate in Ambulatory Care Sensitive Condition: ACSC under UCS in Epilepsy, COPD, Asthma, Diabetes Mellitus and Hypertension patients of the reporting year when compared with the previous year of which the result is in the positive indicating that there has been an increase

3) Outcome of services

In regards to the in-patients' services, the Re-admission Rate within 28 days of the previous discharge reflects the quality of care for inpatients or former treatments. In the FY2018, the readmission rate was at 16.35% of which the highest proportion was found in specialist hospitals at 30.02% followed by university hospitals and central hospitals at 23.71% and 19.10%, respectively (Figure 16)

Figure 16 Percentage of Re-admission within 28 days of previous discharge, by type of service units, Fiscal Year 2014-2018



	2014	2015	2016	2017	2018
Budget (million baht)	16.86	17.34	17.61	18.38	19.10
General Hospital	13.21	13.59	14.01	15.01	15.38
Small Community Hospital	13.76	13.96	14.00	14.80	15.05
Large Community Hospital	13.22	13.34	13.50	14.41	14.58
University Hospital	21.34	22.00	22.19	22.98	23.71
Private Hospital	13.42	14.28	15.45	17.11	17.16
Specialist Hospital, i.e. Cancer Hospital, Psychiatry Hospital	33.10	35.34	33.23	31.66	30.02
Non-MoPH Hospital	11.32	11.35	12.04	12.81	12.69
Autonomous Hospital, i.e. Ban Phaeo Hospital	10.84	12.27	15.23	16.21	15.35
Total	14.61	14.98	15.19	16.04	16.35

Source: IP E-Claim of Fiscal year 2014-2018, Bureau of Information Technology, February 10th 2019, Analyzed Bureau of Health Information and Outcome Evaluation, NHSO.

Notes:
1. *Improved' was used as the status to monitor the quality of service plans*
2. *Unable to classify between planned and unplanned patients from the Inpatient database as the 2nd appointment may be due to continuation of procedure*
3. *Repetitive treatment in the inpatient department may not be from the initial illness*

Ambulatory Care Sensitive Condition (ACSC) is an analysis of illness or conditions which with proper primary care administration, patients could receive out-patient care. This reflects and creates a comprehensive picture on the outcomes of services to their efficiencies to the quality of out-patients' care that prevents the chronic diseases from progressing to severe level. Moreover, ACSC also includes prevention of complications or relapse of illness leading to hospitalizations for cases such as diabetes mellitus, hypertension, asthma, COPD and epilepsy.

From the analysis of UC patients in the FY 2014-2018, it has been found that the rate of admission of 100,000 ACSC patients, under the UCS, suffering from high blood pressure, asthma and COPD including epilepsy has increased indicating that there are issues with controlling and preventing the diseases from progressing (Figure 17).

Figure 17 Rate of admission of patients with Ambulatory Care Sensitivity Condition (ACSC) under UCS, Fiscal Year 2014-2018

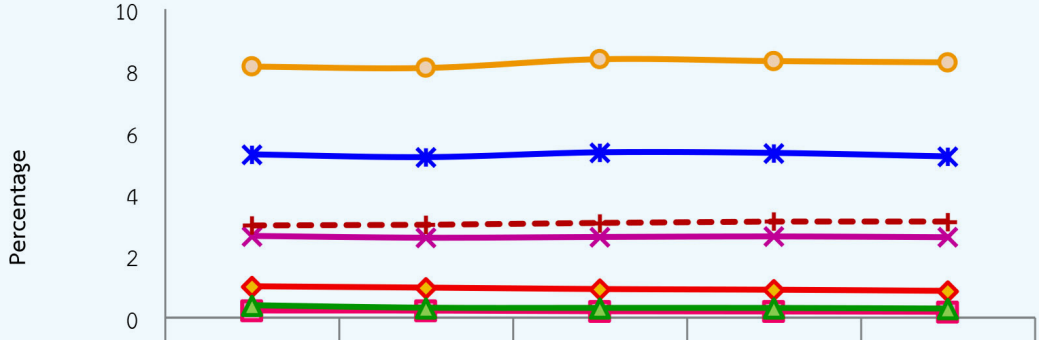
	2014	2015	2016	2017	2018
Diabetes Mellitus	220.92	215.78	215.02	215.20	228.08
High Blood Pressure	138.57	140.97	143.02	145.68	152.44
Asthama	57.87	56.79	59.06	64.76	65.83
COPD	149.56	148.86	157.43	167.63	175.31
Seizure	52.36	53.80	54.67	57.26	58.15

Sources: 1. NHSO Health Service Indicator (H0301) Report, September 30th, 2018), Data processing by Bureau of Information Technology, January 10th, 2019, analyzed by Bureau of Health Information and Outcome Evaluation, NHSO, January 10th, 2019.

2. IP E-Claim data, Fiscal Years 2014-2018, Bureau of Information and Technology; analyzed by Bureau of Health Information and Outcome, February 10th, 2019

In regards to Case Fatality Rate (CFR), it is an index that measures the severity of diseases, which reflects the efficiency and quality of treatment including healthcare management and monitoring diseases in a locality. The database has revealed that UC patients had a higher CFR in FY2018 with patients in the above 70 years and 60-69 year age-groups having the highest CFR at 8.28% and 5.23%, respectively. (Figure 18)

Figure 18 Case Fatality Rate of in-patients under UCS, by age-group, Fiscal Year 2014-2018



	2014	2015	2016	2017	2018
Under 1 Year Old	1.01	0.97	0.92	0.90	0.86
1-4 Years	0.23	0.23	0.21	0.20	0.19
5-14 Years	0.40	0.32	0.31	0.31	0.29
15-59 Years	2.65	2.59	2.62	2.63	2.61
60-69 Years	5.29	5.21	5.35	5.34	5.23
70 and above	8.14	8.10	8.38	8.32	8.28
Overall	3.00	3.01	3.07	3.12	3.11

Source: IP E-Claim, Fiscal Year 2014-2018; data processing by Bureau of Information and Technology, Febuary 10th , 2019 analyzed by Bureau of Health Information and Outcome Evaluation, NHSO.
Note: Infant mortality rate (under 1 year) was exclusive of Z380 (well-being)

4. Rights Protection Services, Stakeholder/Local Networks Participation and Satisfaction Levels

4.1 Rights Protection

The NHSO had launched the Hotline 1330, postal, telegram, email, personal contact or Interactive Voice Response (IVR) for consumers to inquire, complain, petition and coordinate for beds reservations including for protecting citizens' treatment rights and decrease service limitations. In 2018, there were a total of 930,302 cases: 1) 900,984 cases (96.85%) were informative inquires of which 93.57% were inquires made by consumers, 6.43% were made by providers; 2) 5,248 were complaint cases; 3) 8,857 were petitioned cases and 4) 15,213 were patients' referral cases (Figure 23).

Diagram 23 Inquiries, complaints, petitions and referral coordination services , Fiscal Year 2018

Source: Bureau of Consumer Services and Right Protection, September 30th, 2018

1) Information Inquiries

There was a total of 843,089 inquiries made by consumers in Fiscal Year 2018 of which 811,259 inquiries (96.22%) were regarding the UCS. The majority of the inquiries, 402,296 cases (49.59%) were regarding eligibility verification followed by eligibility and eligibility to receive public health services at 217,529 cases (26.81%) and registration and servicing units at 96,819 cases (12.96%). (Table14)

Table 14 Number of information inquiry services, by health insurance scheme, Fiscal Year 2014-2018

Unit: Cases

Inquiries from Consumers	2014	2015	2016	2017	2018
1. Consumers in UC	**512,490**	**410,140**	**504,239**	**676,215**	**811,259**
1.1 Registration & selecting healthcare units	94,798	85,267	100,393	151,386	85,496
1.2 Benefit package & access to care	114,362	89,808	85,933	143,936	217,529
1.3 Early payment for harmed from health service in accordance with section 41	301	239	261	173	278
1.4 Health insurance status confirmation	244,111	179,920	256,760	322,765	402,296
1.5 Hospital information	15,793	14,790	16,471	16,884	66,643
1.6 Organization information	3,869	2,352	2,987	3,166	3,424
1.7 Universal Coverage Emergency Patients: UCEP	10,321	6,535	11,368	9,606	3,892
1.8 Invalid medical welfare					1,511
1.9 Disability Person in Social Security Schemes (Session 44)					1,627
1.10 Others: news, other organizations, follow-up cases etc.	28,935	31,229	30,066	28,299	28,563
2. Consumers in CSMBS	**5,350**	**4,082**	**3,743**	**4,459**	**3,781**
3. Consumers in SSS	**12,175**	**14,440**	**10,622**	**12,661**	**13,708**
4. Consumers in Local Administrative Organization Scheme: LAOs	**11,294**	**4,253**	**7,488**	**9,212**	**11,989**
5. Other medical welfare (state enterprises, teachers, private)					**2,352**
Total	**541,309**	**432,915**	**526,092**	**702,547**	**843,089**

Source: Bureau of Consumer Services and Right Protection, September 30th, 2018

Notes: 1. The NHSO initiated the UCEP 3 Funds on April 1st, 2012 and in 2017 had implemented UCEP for all schemes.

2. NHSO imitated the welfare policy for LAOs on October 1st, 2014.

Inquiries made by providers totaled to 57,895 cases in Fiscal Year 2018 consisting of 50,281 cases (86.85%) related to the UCS of which the majority was regarding the Provider Center's system and program at 14,488 cases (28.81%) followed by 12,445 cases (24.74%) of other inquiries regarding public relations, agency information and 12,233 cases (24.33%) of eligibility verification (Table 15).

Table 15 Number of information inquiries from healthcare providers, by health insurance scheme, Fiscal Year 2014-2018

Unit: Cases

Inquiries from Healthcare Providers	2014	2015	2016	2017	2018
1. Providers in UC	**33,586**	**29,515**	**30,898**	**36,529**	**50,281**
1.1 Registration & selecting healthcare units	4,239	5,088	3,996	3,425	1,570
1.2 Public Health Benefit package	3,407	3,296	3,750	4,822	4,349
1.3 Receiving compensation processes	637	665	736	1,368	2,189
1.4 Initial payment for harmed from health service in accordance with section 41	27	29	22	5	13
1.5 Early payment for harmed from health service in accordance with section 18(4)	79	18	38	12	9
1.6 Health insurance status confirmation	15,605	9,895	11,243	11,911	12,233
1.7 Service Unit information	433	409	448	460	437
1.8 Organization information	651	482	523	617	801
1.9 Universal Coverage Emergency Patients: UCEP (UCEP)	390	367	460	645	735
1.10 Invalid medical welfare					592
1.11 Disability Person in Social Security Schemes (section44)					420
1.12 Provider center: System and Program				1,506	14,488
1.13 (Others; news, other organizations etc.	8,118	9,266	9,682	11,758	12,445
2. Providers in CSMBS	**1,476**	**1,207**	**1,071**	**1,612**	**2,091**
3. Providers in SSS	**775**	**1,014**	**899**	**1,334**	**1,519**
4. Providers in LAOs	**6,114**	**2,539**	**1,333**	**1,434**	**3,164**
5. Other medical welfare					**840**
Total	**41,951**	**34,275**	**34,201**	**40,909**	**57,895**

Source: Bureau of Consumer Services and Right Protection, September 30th, 2018

Note: 1. The NHSO initiated the UCEP 3 Funds on April 1st, 2012 and in 2017 had implemented UCEP for all schemes.

2. NHSO imitated the welfare policy for LAOs, October 1st, 2014.

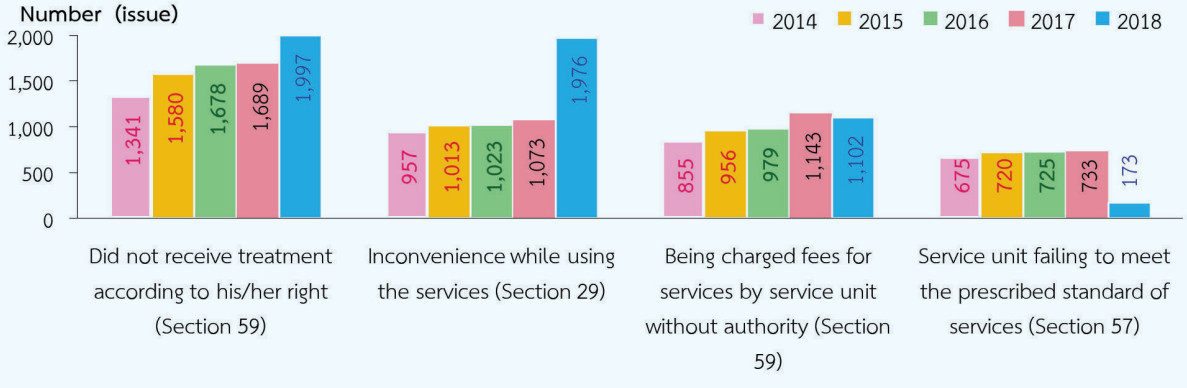
3. Provider center-initiated Call Center 1330 service since March 3rd , 2017

2) Complaints Services

Accepting complaints is another mechanism to protect citizens' rights in order for citizens to have a channel to inform of issues resulting from healthcare services. This will increase transparency in services and create a better understanding between the customers and providers, who may not always be at fault but the mistake was due to a misunderstanding.

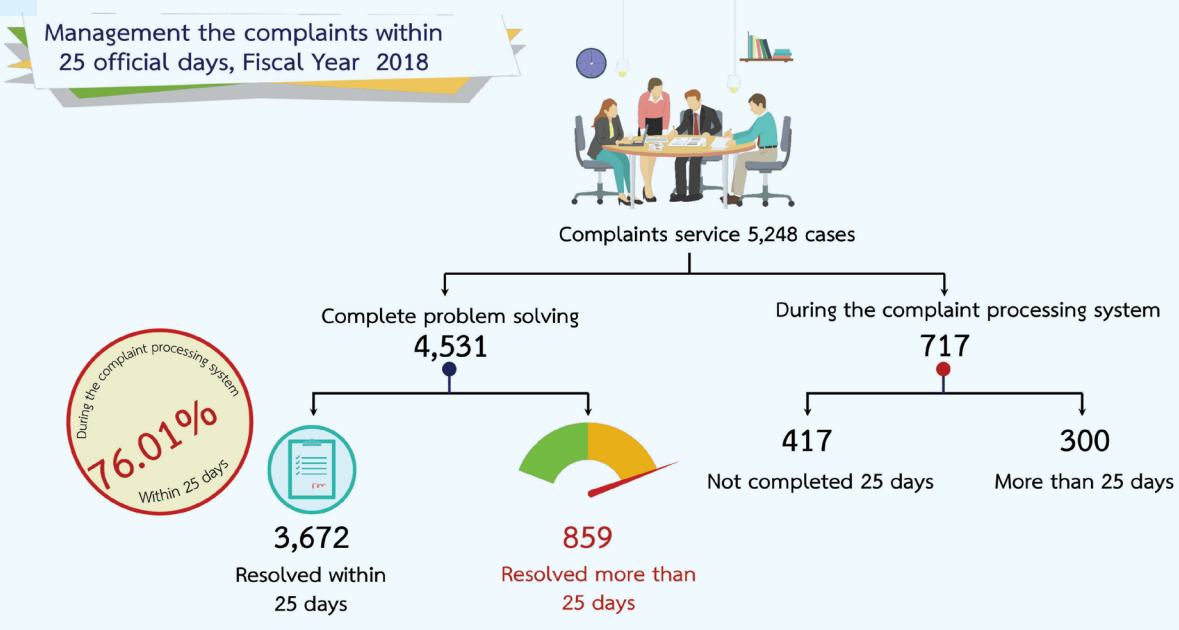
In the FY 2018, the NHSO had received 5,248 complaints of which 1,997 complaints (38.05%) (Section 59) were filed because customers did not receive services as eligible followed by inconvenienced services at 1,976 complaints (37.65%) (Section 59); after which were complaints made regarding customers being unnecessarily charged by a provider were at 1,102 (21.00%) while 173 complaints (3.30%) were made when customers did not receive MoPH standard care (Figure 18) . There were 4,531 complaints that were executed and 3,672 (76.01%) were executed within 25 office days (Figure 24).

Figure 19 Number of complaints, by issue, Fiscal Year 2014-2018



Source: Bureau of Consumer Services and Right Protection, September 30th, 2018

Diagram 24 Number and percentage of complaint management within 25 official days, Fiscal Year 2018



Source: *Bureau of Consumer Services and Right Protection, September 30th, 2018*

Note: *Percentage of Executed Complaints =*

$$\frac{\textit{Complaints (Section 57, 59) executed within 25 days X 100}}{\textit{(All complaints - Complaints executed still pending within 25 days)}}$$

3) Petition Services

In 2018, the NHSO had 8,857 petitioned cases of which 8,752 (98.81%) were of UCS, which had 6,373 cases (72.82%) on registration and selection of healthcare units followed by 900 cases (10.28%) requesting for assistance and those of invalid medical welfare (Redundant with the CSMBS and Social Security Scheme) at 586 cases (6.70%) (Table 16).

Table 16 Number of petition serviced, by health insurance scheme, Fiscal Year 2014-2018

Unit: Cases

Petitioned Services	2014	2015	2016	2017	2018
1. UCS	**10,100**	**13,408**	**10,722**	**9,872**	**8,752**
1.1 Registration and selecting healthcare Units	767	1,340	808	1,202	6,373
1.2 Invalid medical welfare	7,343	8,474	8,053	6,605	586
1.3 Requested for Assistance	1,040	1,604	961	1,117	900
1.4 Consult/Recommend	464	834	371	467	366
1.5 Being refused pursuant to section 7	-	-	-	-	3
1.6 Being refused to use UCEP service	224	209	262	131	12
1.7 Anonymous letter	-	-	-	-	182
1.8 Others (According to consideration)	262	947	267	350	330
2. CSMBS	510	312	140	96	26
3. SSS	100	158	78	68	14
4. LAOs	319	147	95	54	65
Total	**11,029**	**14,025**	**11,035**	**10,090**	**8,857**

Source: Bureau of Consumer Services and Right Protection, September 30th, 2018

Note: 1. The NHSO initiated the UCEP 3 Funds on April 1st, 2012 and in 2017 had implemented UCEP for all schemes.

2. NHSO imitated the welfare policy for LAOs on October 1st, 2014.

3. In 2018, the NHSO had categorized Welfare Scheme (WEL) such as the disabled, elderly, veterans to be accumulated into 1.1, which is registration and selection of service units as the former year's was accumulated in 1.2 invalid medical welfare

4) Coordination for Referral Services

In 2018, Coordination Center for Referral Services of Accidents and Emergency Patients had referred a total of 15,213 patients of which 14,809 patients (97.34%) were under the UCS: 14,511 (97.99%) patients had received treatment from unaffiliated private hospitals; of these, 12,646 were UCEP (red) patients and 1,865 emergency (yellow, green) patients followed by 240 patients (1.62%), whose illnesses exceeded the capacity of the healthcare units. In additions, referrals were also conducted for patients from CSMBS, Social Security Scheme, LAOs and other patients such as aliens or those unaware of their rights. Cases of uncoordinated/ terminated referrals were largely due to patients' condition improving, patients returning home, patients deciding to not transfer, patients unable to be transferred due to condition, patients requested for treatment from other units as they would pay for the expenses themselves or death (Table 17).

Table 17 Coordination for referral services, by health insurance scheme, Fiscal Year 2014-2018

Unit: Individuals

Coordination for Referral Services	2014	2015	2016	2017	2018
1. UC	**2,832**	**2,891**	**3,340**	**6,510**	**14,809**
1.1 Admitted to private hospitals not affiliated with the project	2,215	2,177	2,483	5,790	14,511
1.2 Full Bed Capacity	120	120	171	162	32
1.3 Exceed capacity of healthcare units	447	516	600	438	240
1.4 Want to go back to contracting unit	50	78	86	115	26
1.5 Others (Relatives prefer hospitals near home)	-	-	-	5	-
2. CSMBS	184	144	199	133	39
3. SSS	34	51	34	22	23
4. LAOs	17	10	4	29	279
5. Others such as civic officers, alien rights	23	21	28	9	63
Total	**3,090**	**3,117**	**3,605**	**6,703**	**15,213**

Source: Bureau of Consumer Services and Right Protection, September 30th, 2018

Note: 1. The NHSO initiated the UCEP 3 Funds on April 1st, 2012 and in 2017 had implemented UCEP for all schemes.

2. NHSO imitated the welfare policy for LAOs on October 1st, 2014.

5) Liability Compensation for Patients and Healthcare Providers

In the 2019 Fiscal Year, the Liability Compensation for Patients had a lodging petition of 970 cases of which 755 cases (77.84%) received compensation from the compensation limit of 165.509 million baht. 113.010 million baht was paid to 317 patients who had died or suffered from complete disability; 21.564 million baht was aid to 98 patients with organ loss/ partial disability; 24.102 million baht was compensated to 340 patients with injury/ ongoing illness; while 6.834 million baht (Table 18) was paid to patients who has an ongoing appeal. In regards to compensation for healthcare providers, who had suffered liability damages, a total of 511 petitions were filed of which 427 cases (83.56%) had received compensation from a compensation limit of 6.305 million baht (Table 18).

Table 18 Liability Compensation for harmed patients, Year 2014-2018

Items	2014		2015		2016		2017		2018	
	Patients	MB	Patients	MB	Patients	MB	Patients	MB	Patients	MB
1. Lodging petition	1,112		1,045		1,069		823		970	
2. Receiving compensation	931		824		885		661		755	
- Death/ Complete disability	478	166.370	442	157.188	457	162.344	324	116.010	317	113.010
- Organ loss/ Disability	116	24.632	105	22.879	118	25.856	84	18.226	98	21.564
- Injury/ Continuing illness	337	23.875	277	20.062	310	21.659	253	18.301	340	24.102
3. Appeal*	112	3.562	82	2.801	102	3.094	96	7.513	142	6.834
Total	**931**	**218.439**	**824**	**202.929**	**885**	**212.952**	**661**	**160.050**	**755**	**165.509**

Source: Bureau of Legal Affair, NHSO, Data at 30th September 2018
Note: Appealed cases have included patients who meet the criteria

Table 19 Liability compensation for harmed healthcare providers, Fiscal Year 2014-2018

Items	2014		2015		2016		2017**		2018	
	Patients	MB	Patients	MB	Patients	MB	Patients	MB	Patients	MB
1. Lodging petition	526		398		253		-	-	511	
2. Receiving compensation	420		325		223		-	-	427	
- Death/ Complete disability	3	1.000	-	-	1	0.400			3	1.200
- Organ loss/ Disability	2	0.270	2	0.330	1	0.180			-	-
- Injury/ Continuing illness	415	3.829	323	3.014	221	2.402			424	5.072
3. Appeal*		0.100		0.010		0.020				0.033
Total	**420**	**5.199**	**325**	**3.354**	**223**	**3.002**	**-**	**-**	**427**	**6.305**

Source: Bureau of Legal Affair, NHSO, September 30th, 2018
*Note: * Appealed cases have included patients who meet the criteria*
*** 2017 was the year where fiscal regulations were in the drafting process in regards to methods of preliminary aid to healthcare providers that had incurred liability after providing public health services. The regulation was published in the Royal Gazette on 28th March, 2018, and was put into effect on March 29th, 2018.*

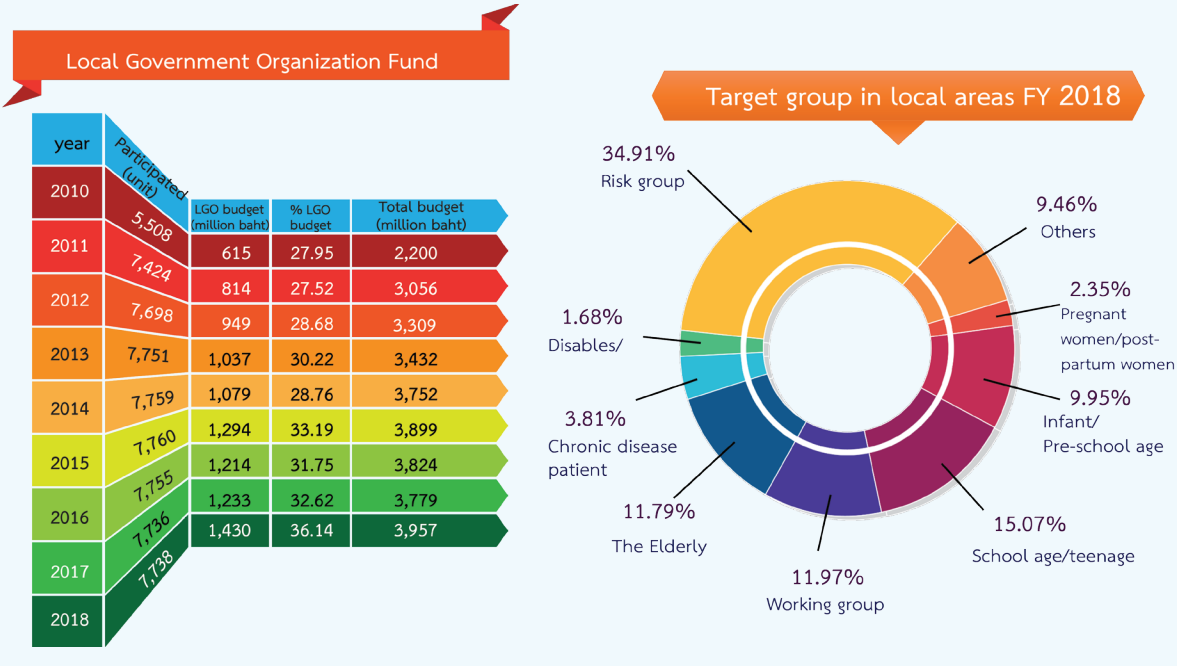
4.2 Stakeholders Participation

1) Participation of Local Administrative Organization

An important tactic for a sustainable national health insurance system to realistically provide healthcare services for each locality stems from the participation of the locals, who had helped brainstorm, decide and contributed to the budget under the stewardship of the National Health Insurance Act, 2002, Section 47.

In Fiscal Year 2018, there were 7,738 (99.51%) Local Administration Organizations comprising of subdistrict-, municipal-, city- administrations organizations from 7,776 nationwide municipalities had contributed to the Local Health Insurance Fund. Total operational budget of 3,957 million baht (inclusive of interests) was sourced from 3 agencies: The National Health Security Fund had contributed 2,511 million baht (63.46%), 1,431 million baht (36.16%) from LAOs and 15 million baht (0.38%) from communities and others. There was a 3,590 million baht (91.09%) disbursement from the fund for health promotion and prevention for at risk population such as school age children, working age people, the elderly, disabled, chronic disease patients including to be used for increasing teamwork between networks such as the vocational network, public sector and the mass media (Figure 25).

Diagram 25 The number of Local Administration Organization, Budget and Activities participated in the UCS, Fiscal Year 2010-2018



Source: Data of Universal Health Scheme at local area, Bureau of Information Technology, September 30th 2018; analyzed by Bureau of Community Health Management, NHSO

2) Participation of Partner Networks

The NHSO had supported the establishment of a network to protect rights within the NHSO consisting of:

1) 885 NHSO Customer Service centers in the Service Facility consisting of 117 central hospitals/ genera; hospitals, 732 community hospitals, 35 hospitals not affiliated with the MoPH and 2 private hospitals as channels to provide assistance to users, create an understanding between the providers and users including to decrease contradictions within the national health system (Source: Consumer Rights Protection Office, NHSO, as on 30th September 2018).

2) 156 NHSO Coordination Centers within 77 states, which is a cooperation of public sector's network with the LAOs, professional organizations, etc. under the principles of health insurance development and management in order to develop the quality of standard care provided by the public health (Source: Consumer Rights Protection Office, NHSO, as on 30th September 2018)

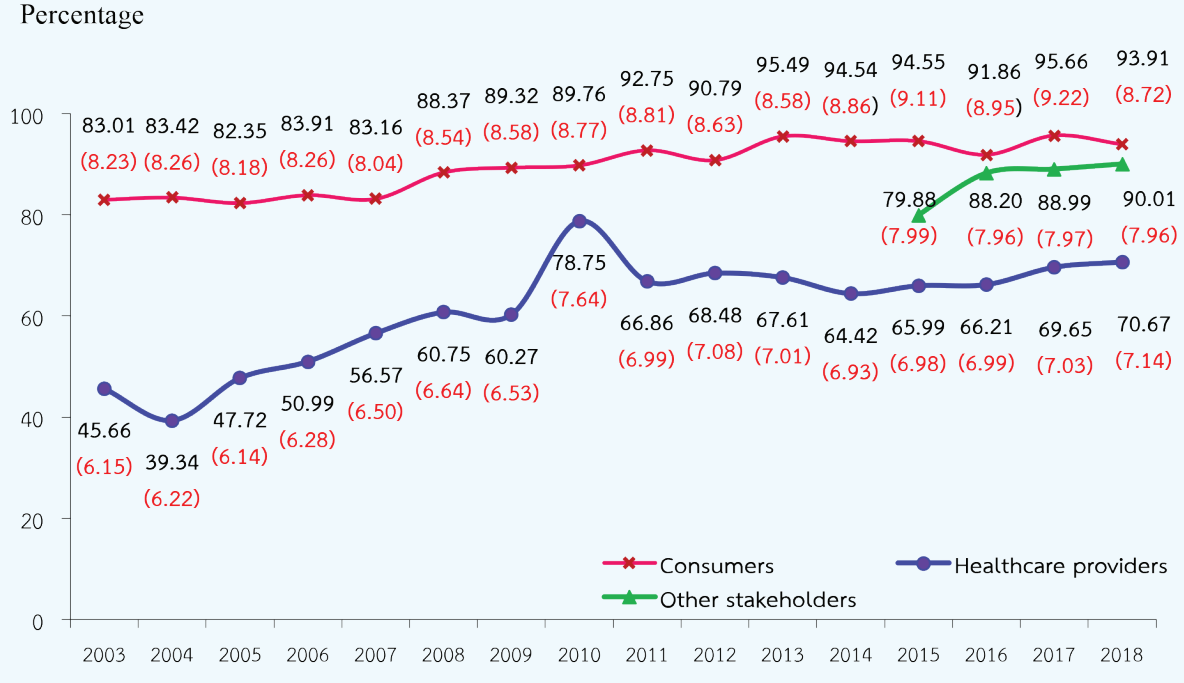
3) 122 Independent Unit to Receive Complaint, according to Section 50 (5), in 77 provinces. These are vital channels to protect citizens' right to file complaints conveniently, independently from the plaintiff and to provide initial assistance to users, who had suffered damages as a result of eliciting treatment from providers. The assistance is cooperation between the public sector organization and the NHSO. (Source: Consumer Rights Protection Office, NHSO, as on 30th September 2018).

4.3 Satisfaction of Consumers and providers

The results of a survey on the users' and providers' satisfaction rate of the UCS, starting from 2003 by the academic institute, found that there has continuously been an increase in satisfaction among UCS members, health care providers and network organizations.

In the fiscal year 2018, the target group gave satisfaction scores to the UCS at the level of very satisfied to highly satisfied (7-10 scores). The beneficiaries accounted at 93.91% (the average score was 8.72 points), health providers accounted for 70.67% (the average score was 7.14 points), and network organizations (local governmental organization, civil network were while 90.01% (the average score was 7.96 points) of the associated organizations (the LAOs and the 9 public sector organizations) (Figure 20). The overall picture indicates that there was a higher level of satisfaction, compared to the providers, as a result of many factors. This reflects that the NHSO was able to meet the demands of the citizens, however, certain managerial aspects may not satisfy the demands of the providers; the NHSO understands the challenges it faces in order to satisfy different target groups.

Figure 20 Percentage and Score of Satisfaction from Consumers, Healthcare providers and other Stakeholders, Fiscal Year 2014-2018



Source: Bureau of Health Information and Outcome Evaluation, NHSO

Note: Percentage of the target group that had provided more satisfaction and most satisfied score (7-10 points)

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