

# Sustainable Immunization Financing in Asia Pacific

August 2017

BREAKING NEW GROUND





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## ACRONYMS

|       |   |       |  |
|-------|---|-------|--|
| ACIP  | Advisory Committee on Immunization Practice           | MCV   | Measles Conjugate Vaccine                      |
| ASEAN | Association of Southeast Asian Nations                | MDG   | Millennium Development Goal                    |
| BCG   | Bacille Calmette-Guerin                               | MMR   | Measles-Mumps-Rubella                          |
| CSMBS | Civil Servant Medical Benefit Scheme                  | MoF   | Ministry of Finance                            |
| DALY  | Disability-Adjusted Life year                         | MoPH  | Ministry of Public Health                      |
| DDC   | Department of Disease Control                         | NCD   | Noncommunicable disease                        |
| DRG   | Diagnosis-Related Group                               | NESDB | National Economic and Social Development Board |
| dT    | Diphtheria-Tetanus                                    | NHSO  | National Health Security Office                |
| DTP   | Diphtheria-Tetanus-Pertussis                          | NUVI  | New and Underutilized Vaccine Introduction     |
| GDP   | Gross Domestic Product                                | NVC   | National Vaccine Committee                     |
| GNI   | Gross National Income                                 | OOP   | Out of Pocket                                  |
| HepB  | Hepatitis B   | OPV   | Oral Polio Vaccine                             |
| HITAP | Health Intervention and Technology Assessment Program | SHI   | Social Health Insurance                        |
| HPV   | Human Papilloma Virus                                 | TAO   | Tambon Administration Organization             |
| HTA   | Health Technology Assessment                          | THE   | Total Health Expenditure                       |
| JE    | Japanese Encephalitis                                 | UCS   | Universal Coverage Scheme                      |

## KEY MESSAGES

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### Context

- Thailand's economy is slowing down, stalling at 3% annual growth, which could impact social investment. Funds flowing into the health sector are expected to slow as generous annual budget increases prove to be unsustainable.
- The low fertility rate, paired with an increased life expectancy, has engendered a rapidly aging population and increasing burden of NCDs.
- Thailand's commitment to providing UHC, drives coverage to nearly 100% for all vaccines in the schedule and new vaccines have recently been added.

### Immunization Financing

- Immunization is a centralized program and provided free of charge for the entire population. At present, procurement of vaccines and the immunization program is financed mainly by the National Health Security Office (NHSO) through its capitation payments to primary care facilities.
- Thailand has made significant efficiency gains since housing its program under an independent purchaser. Limited additional fiscal space will be available through other efficiency initiatives.
- The immunization budget in 2015 represented 0.7% of the total public health budget.

### Key Findings

- General taxation accounts for the majority of resources for health in Thailand. GDP spent on health is lower than neighboring countries, but is high in terms of percentage of the public budget
- The Department of Disease Control is actively thinking through types of additional revenue streams or cost sharing opportunities.
- Thailand allocates its existing tobacco tax revenue to fund the ThaiHealth Foundation which focuses on preventative healthcare for NCDs.
- The National Vaccine Institute has recently tabled an immunization bill that includes provisions for earmarking alcohol and tobacco taxes for immunization, though it is in the early stages of discussions.

- NHSO's focus on cost containment results in a very deliberate process of new vaccine adoption.
- Introducing new materials or procedures into the UCS benefits package is an evidence-based process in Thailand using their advanced health technology assessment institution, The Health Intervention and Technology Assessment Program (HITAP). The Advisory Committee on the Immunization Practice relies heavily on these assessments in their recommendations.

- While the purchasing of immunization services is currently housed under the NHSO, there are active discussions on the possibility of bringing that function back to MoPH.
  - Despite a push from the parliament to administratively decentralize the country, the health sector has remained centralized.
  - Most sub-national government entities do not have the resources to take on additional financing responsibilities for the immunization program, but there are examples of local governments procuring and introducing new vaccines.
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## INTRODUCTION

Thailand underwent rapid growth starting in the mid-1980s. Despite efforts to continue moving forward, the country has experienced slowed growth in recent years. The government has made major commitments to social development, including universal access to healthcare, made reality in 2002. Physical access to health facilities across the country and strong financial protection made Thailand's health system a success. However, slowed economic growth and an increasing economically dependent population have brought the sustainability of the program into question. Financial constraints could prevent the expansion of national immunization program's schedule. Understanding the political economy of the country, the financing flows, and how these factors support or deter the prioritization of funding immunization programming will be essential to ensuring continued robust coverage rates and an expanded schedule of immunizations, financed in a sustainable manner.

This brief is one of six in a series that analyzes how countries in Asia Pacific, undergoing financial and/or political transitions, prioritize and fund their immunization programs. The brief contains valuable information for all stakeholders interested in promoting sustainable and robust immunization programs and illustrates a variety of ways to engage in realizing this outcome.

## CONTEXT

### ECONOMIC TRENDS

**Thailand is experiencing slow but steady growth, although as expenditures outpace revenue, resources for investment in health may be threatened.** GDP growth has been plagued with reoccurring peaks and valleys though growth is predicted to be more stable in coming years, remaining around 3% (Table 1).<sup>1</sup> Although revenue as a percent of GDP exceeded expenditures in 2015, the IMF projects that this relationship will reverse with Thailand decreasing its account balance as public costs continue to rise, but revenue collection is outpaced, if only slightly.<sup>2</sup> Thailand currently collects 16.4% of its GDP in tax revenue.<sup>3</sup> The Revenue Department has introduced efforts to increase revenue by creating electronic submissions for personal income taxes, but there is a lack of political will to expand on the tax base, including new inheritance and property taxes.<sup>4</sup> Thailand's informal economy is the largest in Asia, in terms of % of GDP, and most members escape proper income taxation.<sup>5</sup> It is estimated that only 1 in 10 Thais pay tax.<sup>6</sup> The draining of accounts will force decisions on how limited public funds are spent and could greatly affect the sustainability of social programs like the centrally sponsored immunization program.

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<sup>1</sup> International Monetary Fund (April, 2017).

<sup>2</sup> Ibid.

<sup>3</sup> Ibid.

<sup>4</sup> Tangcharoensathien, Viroj (ed). (2015).

<sup>5</sup> The Economist (September 11, 2015).

<sup>6</sup> Ibid.

**Table 1: Economic Indicators**

|                                      | 2000   | 2005   | 2010   | 2015   | 2020 |
|--------------------------------------|--------|--------|--------|--------|------|
| GDP growth (annual)                  | 4.456% | 4.188% | 7.507% | 2.82%  | 3%   |
| Gross Government Revenue (% GDP)     | -      | -      | -      | 22.6   | 22.3 |
| Gross Government Expenditure (% GDP) | -      | -      | -      | 22.348 | 22.8 |

Source: World Bank (2017).; International Monetary Fund (April, 2017).

## DEMOGRAPHIC TRENDS

**Thailand's low population growth rate will continue to decrease the needed investment to maintain routine immunization service provision.** The growth rate in Thailand has fallen steadily since the mid-1960s, hitting a low of 0.143% annual growth in 2009 and staying below 0.5% ever since (Table 2).<sup>7</sup> The decline in population growth aligns with the positive growth of the economy, education, and access to healthcare. As these inputs are projected to remain stable in the near future, we can expect that population growth will continue to remain low. Fertility rates will remain below the replacement rate, decreasing the needed investment to maintain coverage against vaccine-preventable diseases.

**Table 2: Key Demographic Indicators**

| Indicator  | 1960  | 1990  | 2015  | 2030  |
|--|-------|-------|-------|-------|
| Total population (million)                           | 27.40 | 56.60 | 68.00 | 68.30 |
| Population growth (annual %)                         | 3.00  | 1.37  | 0.34  | -     |
| Population ages 0-14 (% of total population)         | 42.70 | 30.20 | 17.70 | 14.00 |
| Population ages 65 and above (% of total population) | 3.30  | 4.50  | 10.50 | 19.50 |
| Life expectancy at birth (years)                     | 54.70 | 70.20 | 74.40 | 77.30 |
| Fertility rate (births per woman)                    | 6.10  | 2.10  | 1.50  | 1.50  |

Source: World Bank (2017); United Nations Department of Economic and Social Affairs, Population Division (2015).

**The low fertility rate, paired with an increased life expectancy has engendered a rapidly aging population in Thailand that will require new investments to provide pertinent healthcare services.** As economic, educational, and health inputs increased over time, the life expectancy of Thais at birth rose to 74 years old.<sup>8</sup> The fertility rate has been below the replacement rate of 2 children per woman since 1993 and, in 2015, was 1.5 children per woman.<sup>9</sup> The birth cohort in 2015 was 738,930.<sup>10</sup> The population makeup of Thailand is thus

<sup>7</sup> World Bank (2017).

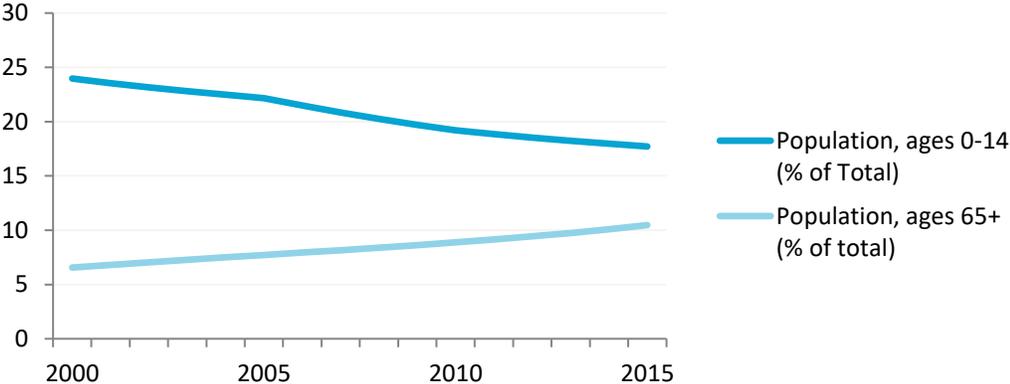
<sup>8</sup> Ibid.

<sup>9</sup> Ibid..

<sup>10</sup> National Statistics Office, Thailand (2016).

quickly changing as the percent of youth falls (now 17.7%) and the percent of the aged grows (now 10.5%) (Figure 1).<sup>11</sup> The changing demographics will require a change in priorities for the health sector. While an older population may draw more investment in preventative care for noncommunicable diseases (NCDs), it also opens the door for investment in vaccines across the lifespan.

**Figure 1: Convergence of Dependent Population Segments**



Source: World Bank (2017).

**HEALTH OUTCOMES**

**Thailand’s prioritization of health produces strong outputs.** Health has been regularly prioritized in Thailand, dating back to the 1920s when the ruling prince studied public health at Harvard. With effort, innovative programming, and investment Thailand performs well on output indicators and reached their Millennium Development Goals (MDGs) for infant mortality and under-5 mortality reductions, while halving the maternal mortality ratio (Table 3).<sup>12</sup> This commitment allowed the necessary investment to achieve universal coverage in 2002. The system is also unique in the region for its commitment to evidence-based decision making. The use of health technology assessments, and the strength of The Health Intervention and Technology Assessment Program (HITAP), allows for decision-making for health programming focus on efficiency and aims to ensure quality in those decisions.

**Table 3: Mortality Rates**

| Indicator                                    | 1990 | 2000 | 2005 | 2010 | 2015 | MDG Goal                 |
|--|------|------|------|------|------|--------------------------|
| Infant Mortality (per 1,000 live births)     | 30.3 | 19.1 | 15.3 | 12.5 | 10.5 | 15 by 2006               |
| Under-5 Mortality (per 1,000 live births)    | 37   | 22.5 | 17.8 | 14.5 | 12.3 | 12.33                    |
| Maternal Mortality (per 100,000 live births) | 40   | 25   | 26   | 23   | 20   | 18 by 2006<br>10 by 2015 |

Source: World Bank (2017).; Office of the National Economic and Social Development Board (July, 2010).

<sup>11</sup> World Bank (2017).  
<sup>12</sup> Office of the National Economic and Social Development Board (July, 2010).

**Though communicable diseases still pose a threat to the population, the shift in the disease burden toward non-communicable diseases will affect which health programs are prioritized and financed.** According to the WHO, after neonatal complications (45%), rotavirus (16%) and pneumonia (11%) are the two leading causes of under-five mortality in Thailand.<sup>13</sup>

Communicable diseases were responsible for 12.09% of DALYs in 1990, falling slightly to 11.26% by 2015.<sup>14</sup> Meanwhile, the social focus on non-communicable diseases is rising, as well as their presence in Thailand's burden of disease profile. NCDs rose from 62.05% DALYs in 1990 to 72.81% in 2015.<sup>15</sup> According to the WHO, NCDs are responsible for 71% of deaths in Thailand.<sup>16</sup>

## STRUCTURAL AND POLITICAL TRENDS FOR HEALTH

**Through Thailand's many political turnovers, healthcare has remained a priority for the people and the popularity of the national health insurance mechanism will secure its existence in the future.** Following the democratization of Thailand in 1932, Thailand experienced 8 coups and 12 rebellions.<sup>17</sup> They have also ratified 18 different constitutions or charters.<sup>18</sup> The military plays a large role in the country and is not afraid to exercise its power. Though upheaval and change is a part of Thailand's political history, a strong mix of long-serving technical expertise, popular support, and political commitment has moved the health agenda forward. Thailand enacted a major reform to its health system when it reached universal coverage in 2002. However, this achievement was one step in a long line of political commitments to health. Beginning in 1978, Thailand offered civil servants health insurance. The national immunization program (NIP) also began in 1977. Thailand spent the 1980s and early 90s investing in infrastructure – building health facilities in all districts across the country. The Social Health Insurance (SHI) scheme was added in the 90s for private sector workers and efforts to provide health coverage to the poor were enacted. Progressive-minded technocrats in the Ministry of Public Health (MoPH) pushed through innovative mechanisms like voluntary health cards and the Medical Welfare Scheme.

**Continuous steps forward set the groundwork for a major move to revolutionize healthcare in Thailand at the turn of the century with the “30 Baht Cures All Diseases” program.** A new constitution in 1997 increased the power of the party in charge at a time when the financial crisis set the stage for a pro-poor agenda. As the economy experienced a downturn, the number of people living below the poverty line grew. There was popular support for government social services to intervene. The Thai Rak Thai party understood the potential of the progressive platform and made it the basis of its campaign. The MoPH, armed with research showing the feasibility of a big-bang reform in coverage, advocated for its inclusion in the party's platform.<sup>19</sup> The leader of Thai Rak Thai grasped onto the idea and made it one of his core promises under the slogan “30 Baht Cures All Diseases”. The “Triangle that Moves the

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<sup>13</sup> WHO (2006).

<sup>14</sup> Institute of Health Metrics and Evaluation (2016).

<sup>15</sup> Ibid.

<sup>16</sup> WHO (2014).

<sup>17</sup> Tangcharoensathien, V. (2015).

<sup>18</sup> Ibid.

<sup>19</sup> Evans et. al (2012).

Mountain”, a theory utilized and marketed by the Thais guided the advocacy process to push through the legislation. The triangle consists of three pieces: civil society, evidence, and policy-makers and posits that the three sides, working in tandem, can achieve advocacy goals. This methodology continues to guide the public health landscape.

**Through a combination of all three mechanisms, everyone in Thailand has access to health insurance, though the universal coverage scheme provides immunization services to all (Table 4).** The Civil Servant Medical Benefit Scheme (CSMBS) covers civil servants, SHI covers salaried professionals, and the Universal Coverage Scheme (UCS) covers everyone else. The Thai benefits packages are focused more on breadth of coverage (people covered), rather than depth of coverage (services covered) in efforts to contain costs. Harmonization of the three public insurance schemes has been slow due to a lack of political will and resistance from CSMBS members and hospitals that benefit from expensive CSMBS outpatient claims.<sup>20</sup> Success in harmonization has come in small increments through individual programs. Emergency services and immunization are the two centralized programs, ensuring that all Thais have access to the same package of vaccines, and effort to add HIV services are underway.

**Table 4: Characteristics of Thailand’s Three Insurance Schemes**

|                           | CSMBS   | SHI   | UCS  |
|---------------------------|---|---|--|
| <b>Population Covered</b> | 8%  | 16%   | 75%  |
| <b>Beneficiaries</b>      | Civil Servants  | Formal Sector Employees   | Everyone else  |
| <b>Source of finance</b>  | General taxation  | 1 Employees (1.5% of salary)<br>2 Employers (1.5% of salary)<br>3 Government (1.5% of salary, up to US\$ 500) | General Taxation   |
| <b>Managing Agency</b>    | Comptroller General’s Department (MoF)  | Social Security Office (Ministry of Labor)  | National Health Security Office (NHSO)   |
| <b>Payment</b>            | OP: Fee-for-service<br><br>IP: DRG, no hard budget                                  | OP/IP: Capitation, hard budget<br><br>Additional DRG payments may be made for expensive services              | OP: age-adjusted capitation<br><br>IP: DRG + global budget   |
| <b>Provider Choice</b>    | Free choice of public providers (inclusive of private providers for emergency care) | Annual choice of contracted public and private hospitals  | Limited choice: Annual registration with public and private contracting unit for primary care, mostly district hospitals and its network of health centers |

Notes: OP: outpatient services; IP: Inpatient services  
Source: Tangcharoensathien, V. (2015).

**Thailand has formed a number of national institutions aimed at increasing and maintaining the accountability, efficiency, and effectiveness of the system.** The most drastic change was

<sup>20</sup> Tangcharoensathien, V. (2015).

the creation of the National Health Security Office (NHSO) in 2002. The NHSO was created for the UCS to provide a purchaser-provider split (an important aspect of every efficient system to prevent conflicts of interest).<sup>21</sup> While the split was good for consumers, it was poorly received by the MoPH as a large aspect of its function was taken away. Tension between the two agencies has existed ever since.<sup>22</sup> Other important introductions to the system include research institutes HITAP, the Health Systems Research Institute, and the International Health Policy Program, the Thai Health Foundation, the Healthcare Accreditation Institute which accredits all health facilities, the Food and Drug Administration which regulates pharmaceuticals, and the National Health Commission Office which manages the national health assembly, ensuring participatory governance of healthcare.

**Efforts to decentralize the governance of the system are greeted with resistance, particularly by the MoPH as they fear raising concerns about fragmentation and further loss of accountability for public health services.** Beginning in 1999, Thailand passed multiple Decentralization Acts, all aimed at devolving central control out to local governments as mandated by the 1997 constitution. For the health sector, the 1999 Act requested the MoPH to hand down the governance of local health facilities to Tambon Administration Organizations (TAOs) or Provincial Administration Organizations. This process has been very slow (thus necessitating multiple other decentralization acts, i.e. 2006, 2012) due to the shake-up of the entire system with the introduction of the UCS, the cited lack of readiness and capacity of TAOs, and political resistance from the MoPH. TAOs often have a shortage of personnel and are unable to achieve the requirements for devolution.<sup>23</sup> The central government has held onto control to ensure the system continues to function with efficiency and accountability. Thailand has produced strong health outputs in its current system and with decentralization comes added accountability and collaborative challenges that could threaten such gains. As of 2015, only 43 sub-district health centers, out of the total 9,268, were devolved to TAOs, though these sub-districts noted positive outcomes from the change.<sup>24</sup>

**Immunization is an important agenda item in Thailand and the country continues to move towards a self-sustaining system.** A current push in the health sector, since the enactment of the Fourth National Drug Policy in 2011, is for Thailand to become completely self-sufficient in its immunization programming.<sup>25</sup> The government hopes to not only continue completely self-funding its program but to also produce all of the vaccines needed for the program. While Thailand has had production capabilities since 1953, efforts to build domestic capacity have since been limited. Still, government organizations and universities continue to move this agenda forward, including Chulalongkorn University which chairs a public-private-partnership cluster within the Asia Network for Capacity Building in Health System Strengthening. The university hopes to improve understanding on public-private partnerships and even build

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<sup>21</sup> The SHI and CSMBBS schemes were already managed by other actors – the Comptroller General’s Department in the MoF for CSMBBS and the Social Security Office for SHI.

<sup>22</sup> Health Insurance System Research Office (2012).

<sup>23</sup> 1) The TAO/municipality must meet “readiness” criteria to manage the health center, demonstrating capacity for and commitment to health by establishing a Public Health Section in the TAO and contributing resources to a community health fund. 2), at least 50% of health center staff must support devolution (Health Insurance System Research Office, 2012).

<sup>24</sup> Hawkins et. al (2009).

<sup>25</sup> Tangcharoensathien, V. (2015).

relationships with private companies that may help to move the country towards their goal. The Government Pharmaceutical Organization is currently investing in a new vaccine production plan, focusing mainly on producing an Influenza vaccine.

**The private sector is a growing part of the health market, but extensive quality service provision has limited the reach of the private sector as demand is relatively low.** The public system has a well-developed infrastructure with one hospital in each of the 926 districts and one health center in each sub-district. The commitment to provision of health services has prevented a market for private services from flourishing outside of urban settings. The majority of health facilities are part of the public network and over 75% of hospitals (79% of hospital beds) are public.<sup>26</sup>

**Thailand markets its health system as a destination for regional access, a practice that may affect public service delivery in the future.** Thailand is already a destination for medical tourism. Private hospitals generate around US\$21.1 billion annually, of which about US\$3 billion comes from foreigners.<sup>27</sup> There are more Joint Commission International accredited hospitals in Thailand than any other ASEAN country and the cost for care falls in between that of Singapore and Malaysia.<sup>28</sup> The government is now encouraging more private investment in research and development so that the country can maintain its status as a destination for quality medical services.<sup>29</sup> As ASEAN kicks in in 2017 and the free flow of people across the community increases, there is a risk that more qualified personnel will be drawn into the private sector. However, there is also an opportunity to leverage increased utilization for public benefit.

## DEMAND AND ACCESS FOR HEALTH SERVICES

**Expanded financial coverage will continue to increase utilization of health services across wealth quintiles.** The total annual number of outpatient visits by UCS members increased from 111.9 million in 2003 to 153.4 million in 2010.<sup>30</sup> Furthermore, the total annual inpatient admissions increased from 4.3 million to 5.6 million (1.3 million more visits), whereas the total number of the UCS members increased slightly from 46.0 million to 47.7 million (1.7 million members) over the same period, reflecting better access and an increased per-capita utilization rate.<sup>31</sup>

## IMMUNIZATION ACCESS AND COVERAGE

**Thailand's success in providing care and coverage for all produces strong immunization outputs with nearly 100% coverage for all vaccines in the schedule.** The Thai government introduced the NIP in 1977 with just BCG and DTP. This commitment to immunization and a subsequent push for the provision of vaccine services saw a big increase in coverage. By 1985,

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<sup>26</sup> Tangcharoensathien, V. (2015).

<sup>27</sup> Oxford Business Group (2016).

<sup>28</sup> Ibid.

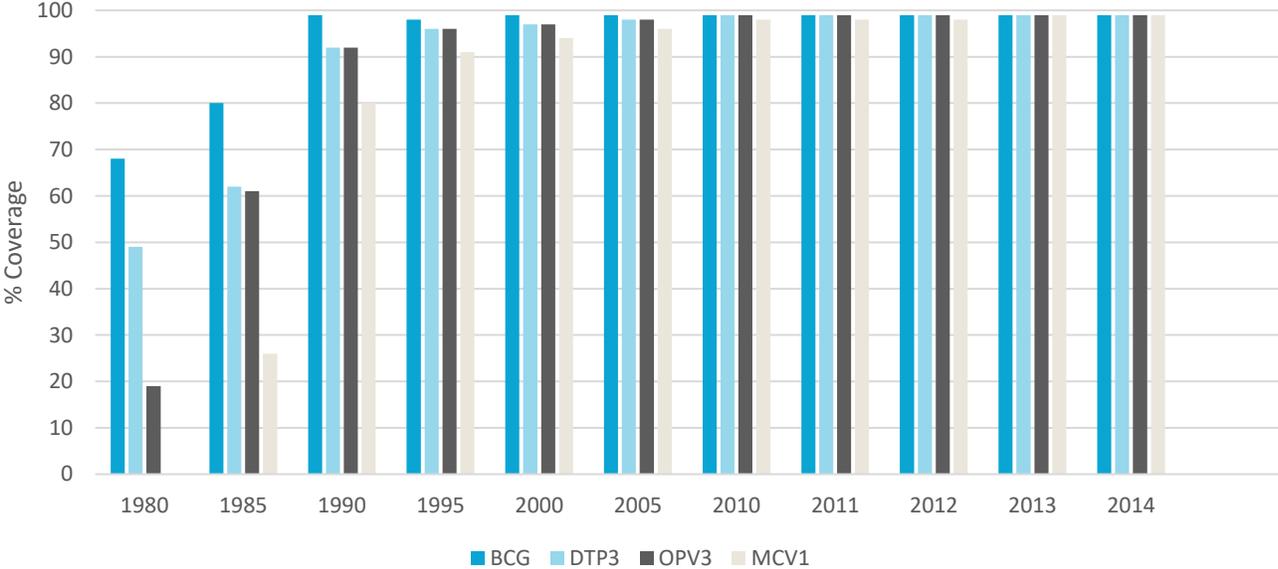
<sup>29</sup> Ibid.

<sup>30</sup> Tangcharoensathien, V. (2015).

<sup>31</sup> Ibid.

MCV and OPV were added and coverage rates jumped. By 1995, these four vaccines had at least 90% coverage across the country. In 2013, they all reached 99% (Figure 2). The immunization schedule is slightly longer with rubella and HepB included, but all vaccines, with the exception of the second measles dose, has 99% coverage.<sup>32</sup> The second dose was added to the schedule later and is for schoolchildren, administered after other vaccines.

**Figure 2: National Immunization Coverage, 1980-2014**



Source: WHO-SEARO (July, 2014).

**Immunization is a centralized program and provided free of charge for the entire population through the UCS mechanism.** The Director of the Bureau of General Communicable Diseases within the Department of Disease Control manages the NIP. All Thais can access free immunization services through the UCS at public facilities – health centers and hospitals. Ninety percent of the population accesses immunization in the public sector.<sup>33</sup> NHSO takes care of financing for vaccines, including procurement and distribution of vaccines to all health care facilities in the UCS scheme. The provincial health offices are then responsible for implementing the program and achieving coverage. Potential evolutions in the health system are pending, whether further decentralization of governance or potential changes in how insurance premiums are pooled. However, immunization as a vertical program, provided by UCS for all, is protected from either change and unlikely to be affected. While this ensures funding for immunization, it does not guarantee sustainability and growth over time.

**Table 5: Thailand’s Current Immunization Schedule**

| Vaccines                 | Age      |
|--------------------------|----------|
| 1 BCG, HepB <sub>1</sub> | At birth |

<sup>32</sup> WHO (March 3, 2017).  
<sup>33</sup> Limwattanayingyong (2015).

|    |  |             |
|----|--|-------------|
| 2  | OPV <sub>1</sub> , DTP <sub>1</sub> -HepB <sub>1</sub> , HepB <sub>2</sub> | 2 months    |
| 3  | DTP <sub>2</sub> -HepB <sub>2</sub> , OPV <sub>2</sub> , IPV               | 4 months    |
| 4  | OPV <sub>3</sub> , DTP <sub>3</sub> -HepB <sub>3</sub>                     | 6 months    |
| 5  | MMR <sub>1</sub>   | 9 months    |
| 6  | OPV <sub>4</sub> , DTP <sub>4</sub> , JE <sub>1</sub>                      | 1-1.5 years |
| 7  | JE <sub>2</sub> , MMR <sub>2</sub>   | 2.5-3 years |
| 8  | OPV <sub>5</sub> , DTP <sub>5</sub>  | 4 years     |
| 9  | dT   | 7 years     |
| 10 | Flu for HCWs and high-risk individuals                                     | Adult       |

Note: HCW: Health Care Worker; HPV is approved for addition and will soon be on the schedule.  
Source: Muangchana (2014).

**Table 6. Thailand's Standings on International Vaccination Targets**

| Goals of the Decade of Vaccines                                      | Thailand's Standing   |
|--|-----------------------|
| Zero new cases of polio  | Achieved (Green)      |
| Eliminate Maternal and Neonatal Tetanus                              | Achieved (Green)      |
| 90% Coverage of DTP3 with no district less than 80% coverage         | Achieved (Green)      |
| Eliminate Measles  | Low Achievement (Red) |
| Eliminate Rubella  | Low Achievement (Red) |
| Introduce one or more new or underutilized vaccine (NUVI) since 2010 | Achieved (Green)      |

■ Achieved   
 ■ Moderate Achievement   
 ■ Low Achievement

Sources: Strategic Advisory Group of Experts on Immunization (2015).

\*WHO, 2017c.

## HEALTH FINANCING AND IMMUNIZATION

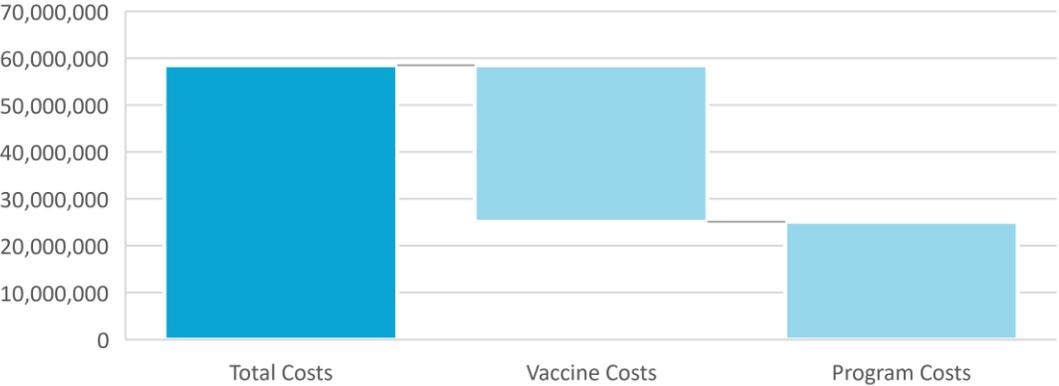
### IMMUNIZATION COSTS

According to self-reported numbers, the immunization program in Thailand cost US\$58,476,598.60 in 2015, a relatively small portion of health expenditure at 0.7% of the public health budget.<sup>34</sup> US\$33,374,487 of the funds were spent on vaccine procurement – 57% of program costs. The program was funded almost entirely by the government's budget

<sup>34</sup> WHO (2017b).

through the NHSO, with additions from the MoPH covering outbreak campaigns and capital investments as needed.

**Figure 3. Immunization Cost Breakdown**



Source: WHO (2017b).

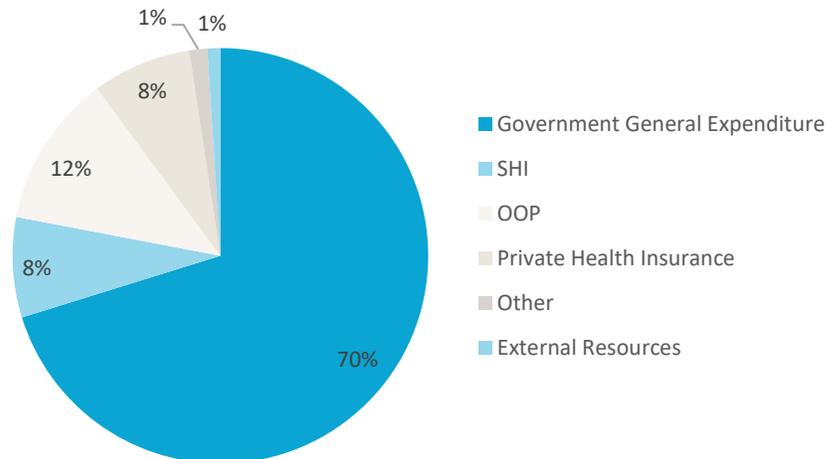
**GENERATION**

**General taxation accounts for the majority of resources for health in Thailand, a potential problem if growth slows.** As national coverage has risen, out of pocket payments (OOPs) have dropped from 33.8% of total health expenditure (THE) in 2000 to 11.9% in 2014 while public expenditure (inclusive of SHI contributions) rose from 56% to 78% THE (Figure 4).<sup>35</sup> The remaining OOPs are mainly spent by the richer segments of the population (Figure 5). These funds run the MoPH, but are also the singular source of financing for two of the three insurance mechanisms – both for civil servants and for the universal coverage scheme. In addition, Thailand has a 2% tax on tobacco that is earmarked for ThaiHealth, an independent fund used for health promotion, though focused on tobacco control and other healthy lifestyle choices associated with NCDs. There is extremely limited funding from external sources and donors hold minimal influence in the Thai health system. This one-sided financing system comes with its own dangers. In the event of an economic downturn, the tax base could be squeezed, threatening health financing.

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<sup>35</sup> WHO (2017a).

**Figure 4: Health Funding Sources, 2014**



Source: WHO (2017a).

**With the imminent budget crunch coming, Thailand is already thinking about where potential resources could be garnered to sustain the immunization program.** The immunization budget is prepared by the Department of Disease Control and approved by the MoPH and NHSO. New innovative sources have been considered by this group, including an additional value-added tax earmarked for healthcare. In all likelihood, some type of co-payment will need to be implemented to sustain the Thai public healthcare system. This co-payment could come in a variety of forms, from a premium payment, to a user fee, or cost sharing on prescription drugs. The government has noted that some sort of cost sharing will be inevitable in the medium term, but the discussion of what form it will take is still underway.<sup>36</sup> The National Vaccine Institute has recently tabled an immunization bill that includes provisions for earmarking alcohol and tobacco taxes for immunization, though it is in the early stages of discussions.

#### ALLOCATION OF RESOURCES

**The growth of health expenditure has been steady and is highly prioritized within the Thai budget.** With the advent of national health coverage for all in 2002, the Thai government's prioritization of health was signaled and then matched by a rise in budget expenditure. The year before full financial coverage was achieved the public expenditure on health was 2.3% of GDP.<sup>37</sup> By 2014, this figure jumped to 5.6%.<sup>38</sup> The internal rise in health prioritization is not a regional trend, but more of a phenomenon. The health sector was only allocated 10.8% of the budget in 2017 – less than the near 20% set aside for education or economic affairs, (Table 7) more than the percentage other countries in the region put towards healthcare.<sup>39</sup> Even with this high allocation, Thailand spends even more of its total public expenditure on health, nearly 25% of public expenditure (Figure 5).<sup>40</sup> In part, this could be due to the unregulated fee-

<sup>36</sup> Oxford Business Group (2016).

<sup>37</sup> World Bank (2017).

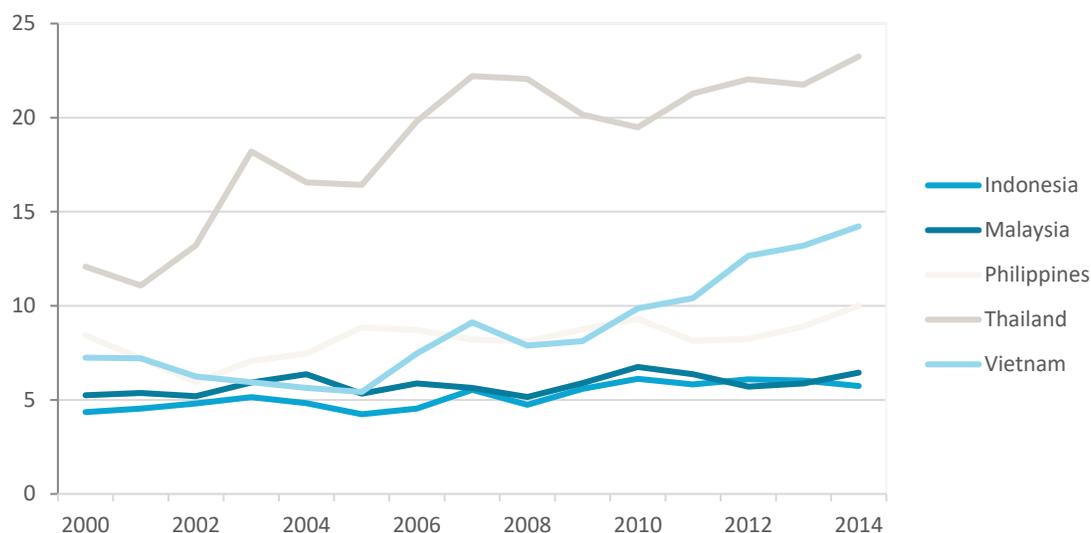
<sup>38</sup> Ibid.

<sup>39</sup> Kingdom of Thailand Bureau of the Budget (2017).

<sup>40</sup> Ibid.

for-service payments made by the CSMBS. Other factors, like absorptive capacity and sector efficiency could also play a role if other sectors have unspent funds.

**Figure 5: Public Expenditure on Health (% of Gov't Expenditure)**



Source: World Bank (2017).

**Table 7: Thai Budget Allocations by Sector, 2017**

| Sector                            | Total Budgeted (millions of baht) | % of government budget |
|-----------------------------------|-----------------------------------|------------------------|
| General Public Services           | 601,006.80                        | 22.0%                  |
| Economic Affairs                  | 543,852.50                        | 19.9%                  |
| Education                         | 536,697.00                        | 19.6%                  |
| Health                            | 294,779.90                        | 10.8%                  |
| Social Protection                 | 270,593.20                        | 9.9%                   |
| Defense                           | 211,125.60                        | 7.7%                   |
| Public Order and Safety           | 172,482.50                        | 6.3%                   |
| Housing and Community Amenities   | 75,059.80                         | 2.7%                   |
| Recreation, Culture, and Religion | 20,556.20                         | 0.8%                   |
| Environmental Protection          | 6,846.50                          | 0.3%                   |
| <b>Total</b>                      | <b>2,733,000.00</b>               | <b>100%</b>            |

Source: Kingdom of Thailand Bureau of the Budget (2017).

**Budgeting for government expenditure on programming is done through results and performance indicators, but parliamentarians still focus on a separately developed input-based budget.** With every election cycle The Office of the National Economic and Social Development Board (NESDB) translates the elected government's manifesto into four-year

plans. The Bureau of the Budget is integrally linked with the preparation. All ministries submit annual plans with budget requests. The Bureau of the Budget takes these often inflated budget requests and works in conjunction with the NESDB, the Ministry of Finance, and the Bank of Thailand to analyze the macroeconomic landscape and set ceilings for each ministry, with approval from the Prime Minister.<sup>41</sup> These four institutions play a large role in the prioritization of sectors and programs. Thailand practices “strategic performance budgeting”, whereby ministries prepare budgets based on performance and results. For example, in the 2017 budget there is a strategy on “Development and Strengthening Potentials of Humans”, under which there are a number of outcomes, including healthcare for newborns.<sup>42</sup> Ministries must report their progress in achieving outputs to the Bureau of the Budget every 3 months. However, the parliament tends to continue focusing on needed inputs when discussing budget approvals so a traditional input-based budget is also prepared, resulting in program achievements usually being planned around inputs rather than the other way around.<sup>43</sup>

**Though the MoPH develops immunization strategy and planning, NHSO, as the purchaser, negotiates the budget with the Bureau of the Budget.** The National Health Assembly (inclusive of civil society and practitioners) holds a lot of influence over how the health budget for the MoPH is constructed and where priorities for the coming year will lie. For the individual pools, each has its own budget process. The UCS covers about three quarters of the population and as it is completely financed by general taxation, the designers made sure to put in plenty of cost control measures.<sup>44</sup> Outpatient services are paid through capitation payments (the size of the population that registers within a particular district determines how much money will be paid to that district) and the capped payment is adjusted by the age of patients. The budget for the UCS scheme is thus negotiated as an amount to be spent per beneficiary. This process is done between the Bureau of the Budget and NHSO with a final decision made by the National Health Security Board. This price started at US\$35 at the start of the program in 2002 and jumped to US\$80 per person by 2012.<sup>45</sup>

**The immunization program is financed mainly by the NHSO through its capitation payments to primary care facilities and its procurement of vaccines and supplies.** The capitated payments can be used for all operational needs of the facilities. The distribution of vaccines is also handled by the NHSO who contracts out to a private company and delivers vaccines to district level hospitals, where the majority of vaccination occurs, and other primary care facilities. The distribution system has proven to be efficient and enabled significant cost savings since the NHSO took control.<sup>46</sup> Cold Chain investments are also covered by the NHSO and maintenance of it is included in the capitation payment.

**Additional program payments are made by the MoPH.** These payments include capital investments for infrastructure needs as well as supplemental financing for campaigns should an outbreak occur. Salaries for civil servants are also covered by the MoPH. The NIP unit is within the ministry is responsible for staff training, forecasting, and program monitoring.

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<sup>41</sup> World Bank (n.d).

<sup>42</sup> Kingdom of Thailand Bureau of the Budget (2017).

<sup>43</sup> Blöndal, JR and SI Kim (2006).

<sup>44</sup> Tangcharoensathien, V. (ed.) (2015).

<sup>45</sup> Center for Global Development (2015).

<sup>46</sup> PATH et. al (2011).

There are active debates on whether the procurement of drugs and vaccines should also return back to MoPH. Proponents argue that procuring consumables is an appropriate role for the provider, rather than the purchaser, and that it is a conflict of interest for the NHSO under the insurance act. Opponents argue that if responsibility shifts back to the MoPH, the provision of services from non-MoPH facilities will be disconnected, and the use of evidence for decision making compromised. A final decision regarding the issue has been postponed to next year.

#### Box 1. Vaccine Procurement: NHSO vs MoPH

Following the creation of NHSO as an independence purchaser, there has been an ongoing discussion about procurement capabilities between the MoPH and the NHSO. Vaccine procurement is currently with the NHSO, but discussions are ongoing to transfer this responsibility back to the MoPH. The underlying difference between the two actors is that the MoPH has a public health focus, looking to expand coverage and options for all Thais while the NHSO is, by its nature, an efficient budget manager.

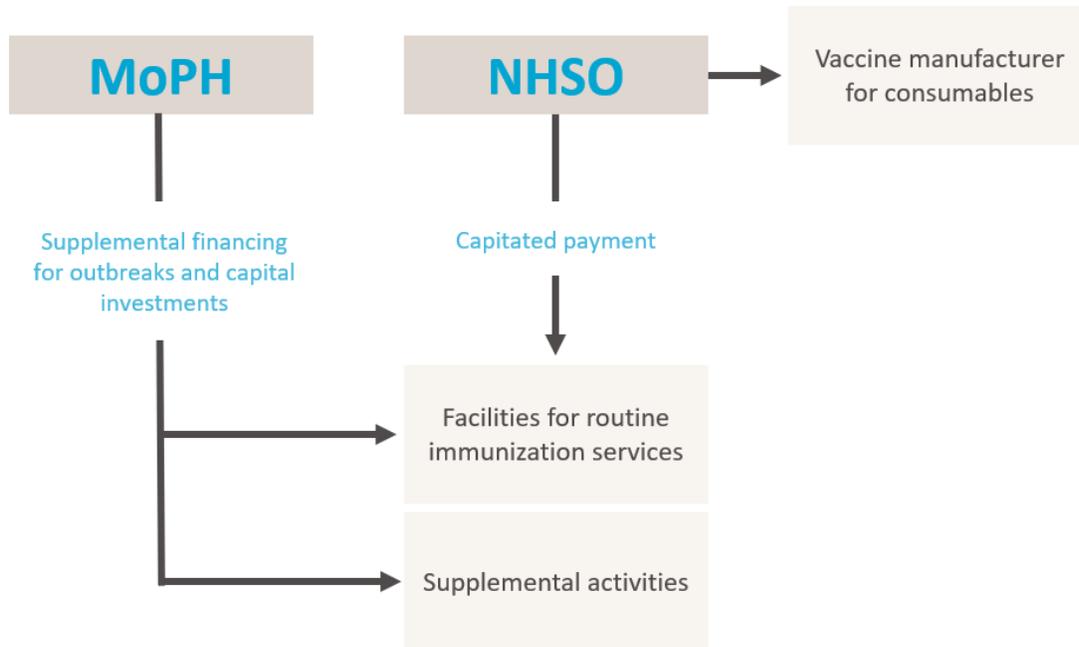
There are a number of positive aspects associated with housing procurement within the NHSO. The focus on efficiency ensures strong monitoring, a strong use of evidence in decision-making, and strong negotiations on prices. Efficiency gains allowed the NHSO to consider new products without an increased budget. There is some level of control in budget flexibility by placing procurement with the budget manager as well.

However, some health needs are better appreciated by the public health professionals in the MoPH. The MoPH might be more interested in getting new vaccines adopted, rather than getting the right price. Procurement of vaccines (inclusive of decisions on which vaccines are included) can also be considered part of service delivery, negating the purchaser provider split.

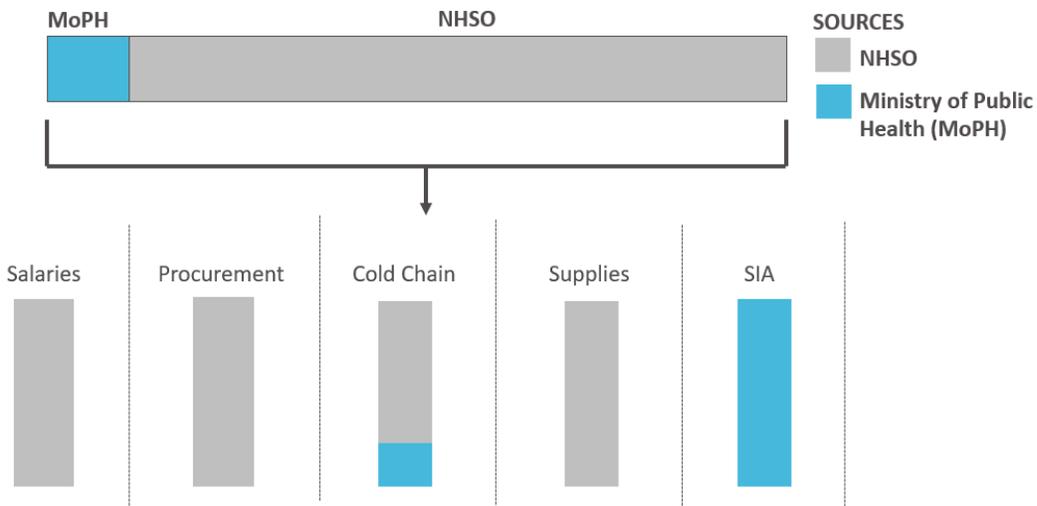
**Provinces can also input funds, but the majority, outside of major metropolitan centers, do not have the fiscal capacity to do so.** Some discussion has occurred around allowing for the local procurement of vaccines. It is noted that local initiatives are not as influential on the national scene as a ministry-driven pilot program would be. Local procurement is seen as beneficial to speeding up the procurement process. However, risks regarding quality control are considered high and the majority of provinces do not have or actively allocate sufficient funds towards immunization to pursue local procurement.

Figure 6. Who Pays for Immunization

**ACTORS.**



**SOURCES.**



## NEW AND UNDERUTILIZED VACCINES SCALE UP IN COUNTRY

### NEW AND UNDERUTILIZED VACCINE INTRODUCTIONS

**The Thai immunization schedule will grow as many new and under-utilized vaccines are still absent from inclusion.** Currently, a number of vaccines are being considered for introduction into Thailand's NIP.<sup>47</sup> Should the introduction of any of these vaccines be recommended, Thailand will need to funnel more resources towards the NIP budget. With economic growth in decline, it is unlikely that the Bureau of the Budget will continue to increase the health budget at the high rates as had been seen previously (Table 8). Simultaneously, the increasing burden of other diseases, like NCDs, decreases the likelihood that the NIP will expand with much speed moving forward without some intense political maneuvering or additional sources of funding. Potential wins may include vaccines later in the life cycle that will speak to the growing needs of the aged population.

**Table 8: Changes in the Health Budget Over Time**

|   | 2010    | 2011    | 2012    | 2013    | 2014    | 2015    | 2016    | 2017    |
|---|---------|---------|---------|---------|---------|---------|---------|---------|
| <b>Health Budget (millions of Baht)</b> | 178,432 | 208,093 | 220,411 | 254,793 | 252,996 | 261,113 | 274,231 | 294,779 |
| <b>% Change</b>                         |         | 14.3%   | 5.6%    | 13.5%   | -0.7%   | 3.1%    | 4.8%    | 7%      |

Source: Kingdom of Thailand Bureau of the Budget (2010-2017).

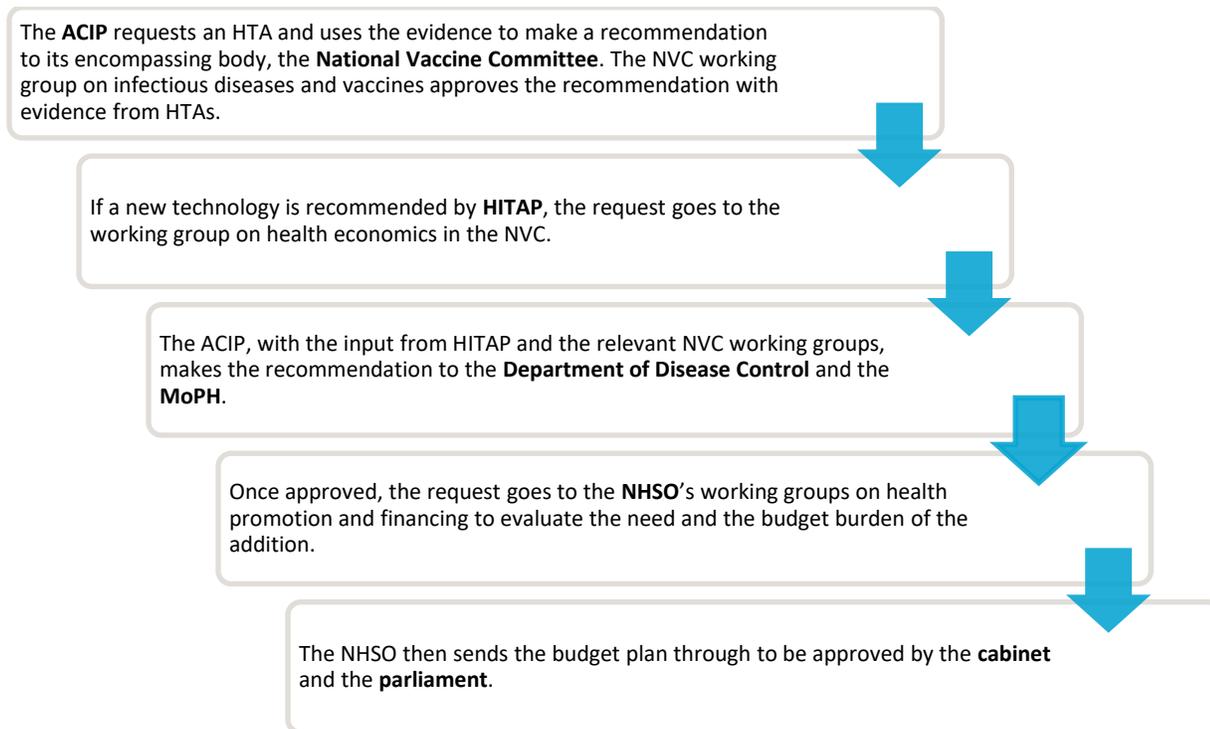
### PROCESS OF INTRODUCING NEW VACCINES

**A number of stakeholders have a say in the introduction of a new vaccine, but the final decision for financing is in the hands of the NHSO.** The Advisory Committee on Immunization Practice (ACIP) makes recommendations to the MoPH on new technology to be added to the NIP. This body consists of 28 members ranging from experts in various disciplines, government members, professional associations, and is chaired by the Director of the Department of Disease Control. Vaccine producers and suppliers are not represented in the ACIP, but they can be consulted and can request space on meeting agendas. In order to issue recommendations, a number of criteria are taken into consideration: 1) burden of disease, 2) target age-group of vaccine, 3) budget impact, 4) side effect of vaccine, 5) severity of disease, 6) effectiveness and 7) cost of vaccine. With the research done and the evidence in place, the Department of Disease Control prepares a proposal and a budget for submission to the MoPH. The NHSO makes the final decision based on cost-benefit, cost effectiveness, and budget impact. The current threshold is 160,000 Baht per QALY (about US\$ 4,700).<sup>48</sup> They then send the budget plan through to be approved by the cabinet and the parliament.

<sup>47</sup> Pooripussarakul et. al (2016).

<sup>48</sup> Tantivess (September 9, 2016).

**Figure 7: Decision-making Process for New Introductions into the NIP**



**Introducing new materials or procedures into the UCS benefits package is a very evidence-based process in Thailand through the use of their advanced health technology assessment institution, HITAP.** HITAP is a parastatal institution mandated since 2007 to perform needed health technology assessments (HTAs) for Thailand. These assessments develop the necessary evidence to provide introduction recommendations and aid in deciding which products and technologies should be purchased and included in the UCS benefits package. It is one of the most influential HTA institutions globally and many developing countries, especially in the region, which do not have similar capacity look to HITAP for technical assistance in their own decisions. The Philippines does not have its own HTA institution, but partnered with HITAP to assess the cost-effectiveness of the pneumococcal conjugate vaccine. In Thailand, HITAP's findings are highly regarded.

**Table 9. Decision-Makers in the Thailand Immunization Program**

| <b>Actor</b>                                 | <b>Role</b>   |
|--|---|
| HITAP  | Gathers evidence for NUVI recommendations through HTA   |
| ACIP/ NVC                                    | Recommends vaccines for introduction using HTA evidence |
| MoPH (DDC) / NHSO                            | Decides on vaccine introduction to the NIP              |
| Private providers                            | Decides on vaccine introduction to private facilities   |
| Bureau of General Communicable Diseases, DDC | Prepares the immunization budget and designs program    |
| MoPH / NHSO                                  | Approves the immunization program budget                |
| NHSO*  | Procures vaccines                                       |
| NHSO   | Funds immunization program management                   |
| Thai Food and Drug Administration            | Performs quality assurance                              |
| Provincial Health Offices                    | Implements immunization programs                        |
| Public hospitals and health centers          | Delivers immunization services                          |

\*Potential to change in the coming year to MoPH.

## IMMUNIZATION FINANCING IN TRANSITION: KEY TRENDS AND TAKEAWAYS

**Thailand is interested in NUVis and increasing access to vaccines for its population, but their strong focus on cost containment within the health system ensures that HTA will continue to play a major role in prioritization.** Considering the strength of Thailand’s health system and the large amounts of public funds that are spent on health (25% of public expenditure), their immunization schedule is comparatively limited. This is attributed by HITAP to the lack of supporting evidence that new vaccines are cost-effective. The use of HTA is well developed in Thailand and is likely to retain its importance. Ongoing pressures in terms of both addressing the emerging NCD burden of disease, combined with smaller future budget increases, will mean that NUVI introductions continue at a deliberate pace. Academics and international HTA institutions can engage to consider ways in which larger conceptions of value and benefit can be integrated into HTA processes, pivoting the conversation away from price to some extent.

**Thailand has made incredible strides in increasing the efficiency of its immunization program, though limited macroeconomic growth will require new revenue sources for continued growth of the scope of coverage.** Thailand’s strong inclination for cost containment benefitted a number of structural changes to the health system that supported these efficiency gains. The purchaser provider split utilized in the UCS brought in the NHSO as an efficient purchaser. The NHSO sets cost ceilings, utilizes the private sector for efficient distribution, and utilizes evidence for its purchasing. The growth of HITAP’s influence supports this evidence-based decision making and is a hallmark of Thailand’s efficient system. While efficiency gains have been the focus for the Thai health system since the UCS was founded,

new methods will have to be explored for further fiscal space. The DDC is actively thinking through what types of additional revenue streams or cost sharing opportunities could supplement the inevitable end of large annual budget bumps due to stalled macroeconomic growth. The National Vaccine Institute has recently tabled a bill in the cabinet which includes provisions for earmarked taxes on alcohol and tobacco for immunization. Pediatricians, civil society, the media, and other stakeholders should watch its progression closely and vocalize support for this or similar provisions that would expand financing for immunization.

**Thailand made immunization a priority by initializing free provision for all under the UCS, but whether the MoPH or the NHSO should procure vaccines is still being debated and will affect the future of immunization financing.** While the purchasing of immunization services is already housed under the NHSO, procurement responsibilities will potentially shift back to the MoPH, creating new dynamics for introductions. Though the budget will still be handled by NHSO, the MoPH would retain negotiating responsibilities with manufacturers and decision-making capabilities regarding consumables. This change will offer some potential opportunities. While the NHSO is focused purely on strategic purchasing and is mandated for efficiency, the MoPH is a health organization. Negotiations and decisions could then potentially be focused less on prices and more on health outcomes and priorities, however the utilization of the recent buffer budget allocated to the MoPH for vaccine delivery offers a caution to this outlook. How the shift will play out is yet to be seen, but should be monitored closely for new engagement opportunities.

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