ALIGN CONSORTIUM

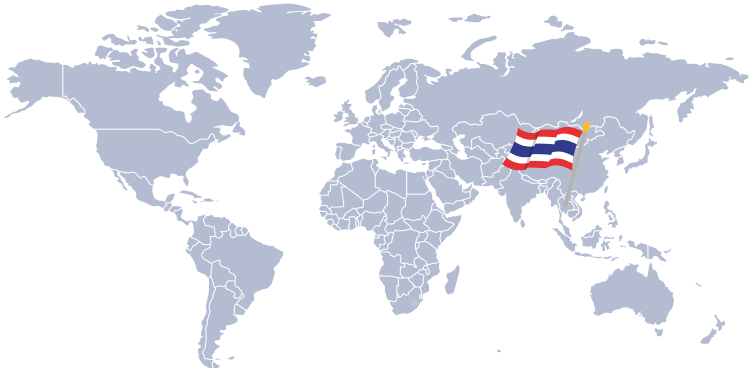
CASE STUDY

The Health Technology Assessment System in Thailand

A short study of how one country decides which health products to introduce and fund—part of a series across countries.

Health leaders in all health systems must make critical decisions about which products—including diagnostics, medical devices, medicines, and vaccines—and services to provide within the constraints of their health budget. Between the global pipeline that brings technologies to market and the national systems that must deliver them at scale lies a critical inflection point: health innovation introduction. Prioritization—which often includes health technology assessment (HTA) processes—is an essential function of innovation introduction, as are the coordinated set of national and subnational processes through which innovations are prepared for sustained, scaled access (e.g., regulatory review, procurement, supply chain planning, etc).

Thailand's **approach** to health product prioritization—among the most fully institutionalized in middle-income countries—is anchored in the Health Intervention and Technology Assessment Program (HITAP). Health technology assessment (HTA) has become a crucial tool used in many countries to guide prioritization and decision-making related to healthcare packages and innovations. Thailand was an **early implementer of HTA,** and HITAP is often viewed as **a model for other low- and middle-income countries** (LMICs).



Approach

One of the earliest and most fully institutionalized LMIC HTA systems (HITAP), built on a strong health-research base and UHC[1] reform.

Stage

Mature; now a regional exporter of HTA capacity (20+ countries).

Home

A semi-autonomous unit (HITAP) feeding three structured processes—medicines, vaccines, and the benefits package—across the public schemes.

Takeaway

Transparent, participatory processes where HTA is used as a negotiation tool rather than a gate, and serves as shared evidence infrastructure across payers.

Figure 1: Summary of Thailand's health technology assessment system.

[1]Universal health coverage

CURRENT SYSTEM

Health product prioritization structures and processes

In Thailand, HTA has been fully institutionalized and embedded into the decision-making processes for health technologies and interventions in the Universal Coverage Scheme (UCS). This includes three separate HTA processes for: 1) pharmaceuticals, 2) vaccines, and 3) all non-pharmaceutical technologies and interventions. The pharmaceutical process informs decisions for the **National List of Essential Medicines** (**NLEM**), the vaccine process informs decisions for the **National List of Essential Vaccines (NLEV)**, and the non-pharmaceutical process informs the **Universal Coverage Benefits Package (UCBP)**.

Although there are three separate processes, opportunities exist to coordinate among them and to consider decisions in the context of each other. For example, if a medicine under consideration requires a certain diagnostic, it will be nominated as a topic for the non-pharmaceutical process. Stakeholders may sit in working groups for each process, which helps to facilitate this coordination.

Generally, Thailand's HTA processes involve four structured steps (Figure 2). Within each of these steps, there are specific processes and workflows. While there are some differences in the process for these three different HTA processes, all three include clear guidelines to ensure transparency, inclusiveness, timeliness, consistency, and contestability.

The pharmaceutical process: getting a medicine onto the NLEM

The **HTA process for pharmaceutical coverage** determines which technologies are included on the NLEM, the "reimbursement list" of all medicines for the entire public healthcare system. The NLEM subcommittee is the primary decision-maker for which products are included on this list and relies on the pharmaceutical HTA process to support decisions (Figure 3). The NLEM subcommittee consists of health economists, clinicians, and representatives from government agencies. They rely on two primary criteria for decisions on which drugs to add to the NLEM: 1) cost-effectiveness, and 2) budget impact.

The pharmaceutical HTA process starts with stakeholder groups—such as medical experts and pharmaceutical companies—nominating products for consideration. A series of therapeutic and screening working groups review all the nominations to assess the quality, safety, and efficacy of the medicine, and then make recommendations to the NLEM subcommittee. After considering the recommendations and product prices, the NLEM subcommittee prioritizes products for economic evaluation. The Health Economics Working Group (HEWG) leads the evaluation process. It selects organizations, such as HITAP, academics, or nonprofit researchers, to conduct the HTAs. Evaluated drugs are then classified into four categories: cost-saving, cost-effective, cost-ineffective, and cost-effective with price negotiation.

What is HTA?

Health technology assessment (HTA) is a multidisciplinary process that uses explicit methods to determine the value of a health technology at different points in its lifecycle. The purpose is to inform decision-making to promote an equitable, efficient, and high-quality health system (HTAi).

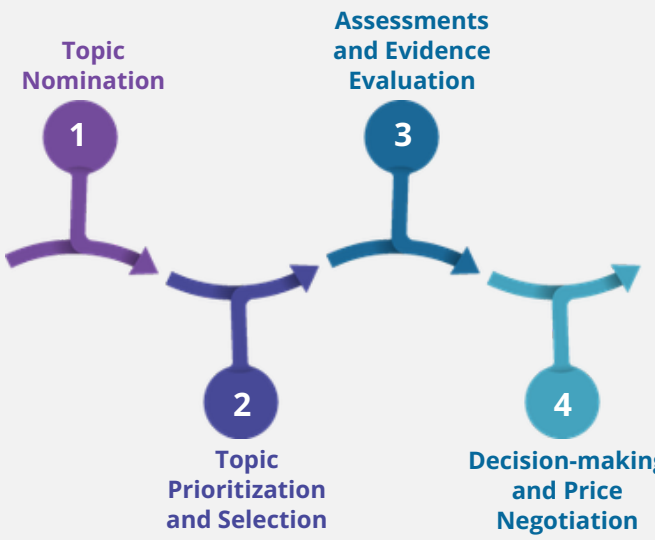


Figure 2: Thailand's four-step HTA process.

1. Stakeholders **nominate** topics for consideration on an annual basis. These include policymakers, academics, industry, health professionals, and civil society.
2. Working groups for the universal coverage benefits package or national list of essential medicines select topics by applying pre-defined **prioritization** criteria.
3. Health technology **assessments** are conducted by the Health Systems Research Institute and/or academic institutes. Findings are presented to respective evaluating committees.
4. Subcommittees and/or the National Health Security Board make final **decisions**. Price negotiations are initiated for medicines that are recommended for inclusion on the National List of Essential Medicines. Final decisions are publicly available.

The NLEM subcommittee considers all the evidence and recommendations from the HEWG, alongside relevant issues such as acceptability, feasibility, equity, and alignment with the three national public healthcare payers (Figure 4). The subcommittee selects high-potential drugs, and if the price is above the set threshold,[1] a separate working group will enter price negotiations to ensure affordability. The NLEM subcommittee makes the final decision based on the results of price negotiation. The pharmaceutical HTA considers new topics for evaluation every three years. Between 2001 and 2019, approximately 40 new medicines were evaluated. The HTA process for the NLEV follows a similar process since vaccines used to be included in the pharmaceutical HTA process.

The benefits package process: non-drug interventions into the UCS

The **HTA process for determining the Universal Coverage Scheme (UCS) benefits package** includes all non-pharmaceutical technologies and interventions, including diagnostics and medical devices. It differs from the pharmaceutical process in that it is conducted annually, involves broader stakeholder engagement, includes a larger set of prioritization criteria, and does not have a price negotiation step. There are seven groups of stakeholders that nominate topics (interventions), including health professionals, patients, policymakers, academics, civil society, industry, and lay people.

Nominated topics are then prioritized,[2] first by a selection working group and then the HEWG, using six criteria: burden of disease, severity of the health problem, effectiveness of the intervention, variation in current practice, financial impact of the disease on households, and equity and ethical dimensions. The final list of priority interventions (usually fewer than ten) will then undergo HTA—once again, the HEWG will select an organization to conduct the evaluation. The results are then presented to the Subcommittee for the Development of the Benefit Package and Service Delivery (SCBP), which will then take its recommendations to the National Health Security Office (NHSO) Board. The NHSO is the largest healthcare payer in Thailand responsible for the UCS. The NHSO Board, consisting of cross-government and market stakeholders, makes the final decision for additions to the UCS benefits package. The other public payers in the Thailand health system will also consider these changes to make decisions for their respective schemes (Figure 4).

[1] The NLEM subcommittee sets cost-effectiveness thresholds.
[2] Multiple criteria decision analysis (MCDA) is used to support the prioritization process, in which criteria are weighted, scored, and deliberated upon by the HEWG.

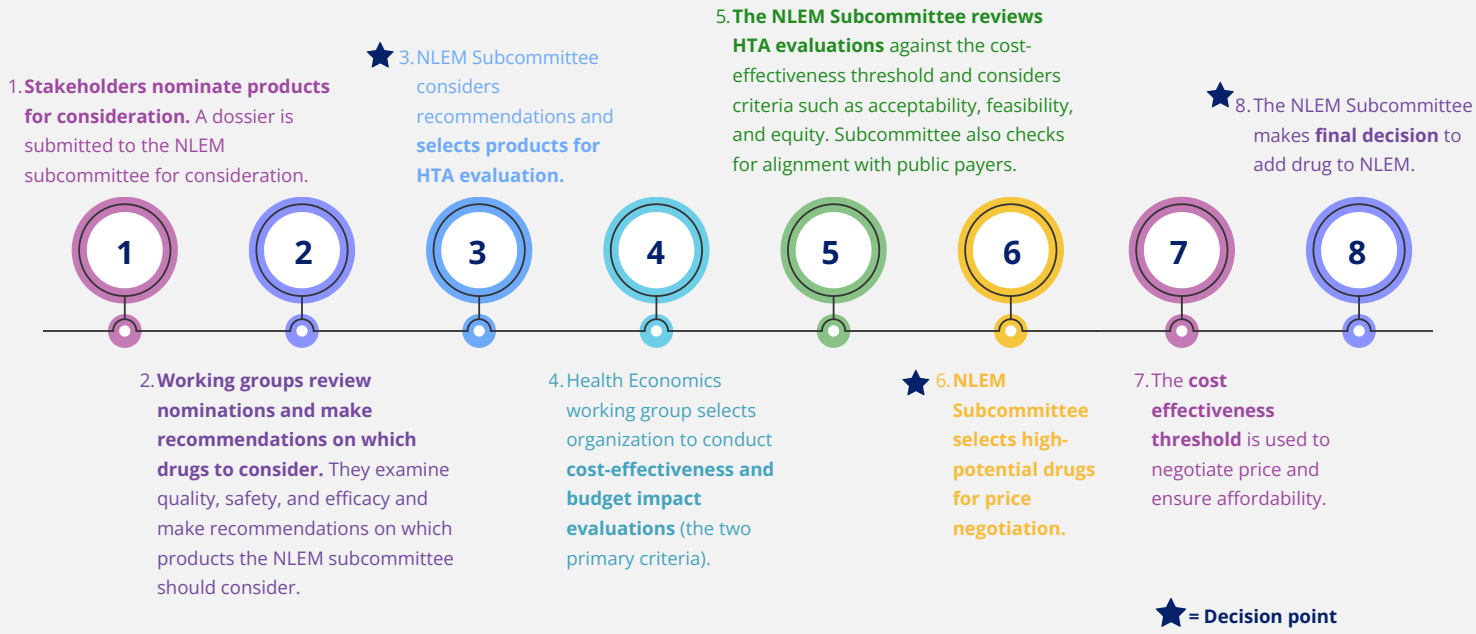


Figure 3: How a medicine reaches the National List of Essential Medicines in Thailand.

Looking ahead: assessing technologies before they arrive (early HTA)

HITAP is now exploring an emerging application of HTA to help with prioritizing products even before regulatory approval: **early HTA**. Early HTA can support early decision-making, guide innovators to align with health system needs, and help define target product profiles and R&D priorities.

Once again, Thailand is at the forefront of exploring this HTA process, which includes horizon scanning for health products in the pipeline and informing what products enter the market. HITAP, along with funding from Thailand Science Research and Innovation (TSRI), has begun to set priorities for health innovations and early HTA to support R&D in Thailand. HITAP is also collaborating with the University of Singapore on a new unit called the Medical Innovation Development and Assessment Support (MIDAS) to further explore early HTA.

HOW DID THIS SYSTEM COME ABOUT?

The establishment and institutionalization of Thailand's HTA occurred over many years and was dependent on existing health structures, legislation, and a political commitment to providing public health coverage. Before the current HTA program (HITAP), there had been two initial attempts at a national-level HTA unit.

The first attempt was in 1993, following a period of economic growth which brought many health advancements but also resulted in poor distribution and growing inequality in access to new technologies. This led to an interest in economic analyses to guide investment in new technologies, and the establishment of the Technology Assessment and Social Security in Thailand (TASSIT) program—a collaboration between the Health System Research Institute (HSRI) and the Karolinska Institute of Sweden. However, it was terminated three years later due to insufficient human resources and infrastructure. Thailand was in the early stages of creating a national health insurance system, which only covered a small portion of the population. As such, government spending on health was not significant, so the program was understaffed and underutilized, which resulted in its quick termination.

Following an economic crisis in 1997, Thailand went through a massive health system reform in the early 2000s, starting with the implementation of the UCS. This reform renewed interest and momentum for establishing an HTA unit because of the increased need to balance budget constraints against providing comprehensive benefit packages that often included high-cost services. In 2002, the Ministry of Public Health (MOPH) established its second attempt at an HTA unit—the Institute of Medical Research and Technology Assessment (IMRTA)—to meet this need. However, the institute was unable to meet the increasing demands for using HTA as a tool for informing coverage decisions. For a while, it relied on HTAs conducted by academics and other HTA institutes and programs to fill the gaps, but it was clear more capacity was needed to support the UCS.

In 2007, the Health Intervention and Technology Assessment Program (HITAP) was officially established as a semi-autonomous research unit in the MOPH. It received initial funding support from multiple sources, including the Thai Health Promotion Foundation, the HSRI, and the MOPH. One factor that made this HTA effort different from previous ones was substantial support for HITAP to begin activities for setting up HTA systems, including human capacity strengthening and researching appropriate HTA management and social mobilization. Importantly, HITAP coordinated with academics, HTA institutes/programs, and the private sector to develop the national HTA methodological guidelines, infrastructure, and standards. This was seen as a key enabling factor for Thailand's HTA development and institutionalization.

Overall, researchers have identified **five key enabling factors** for the formal integration of HTA into decision-making in Thailand and its sustainability:

- **Universal health coverage as a driver for evidence use.** The launch of the UCS in 2002 created political and fiscal pressure to manage resources efficiently: decisions became highly visible and politically sensitive. Groups such as civil society organizations and patient representatives began to demand access to new health interventions and called for greater transparency and participation in decision-making. HTA was adopted to address these concerns and guide coverage decisions for technologies and services. The UCS's evidence needs directly strengthened national HTA capacity and embedded it in benefits-package decision-making.

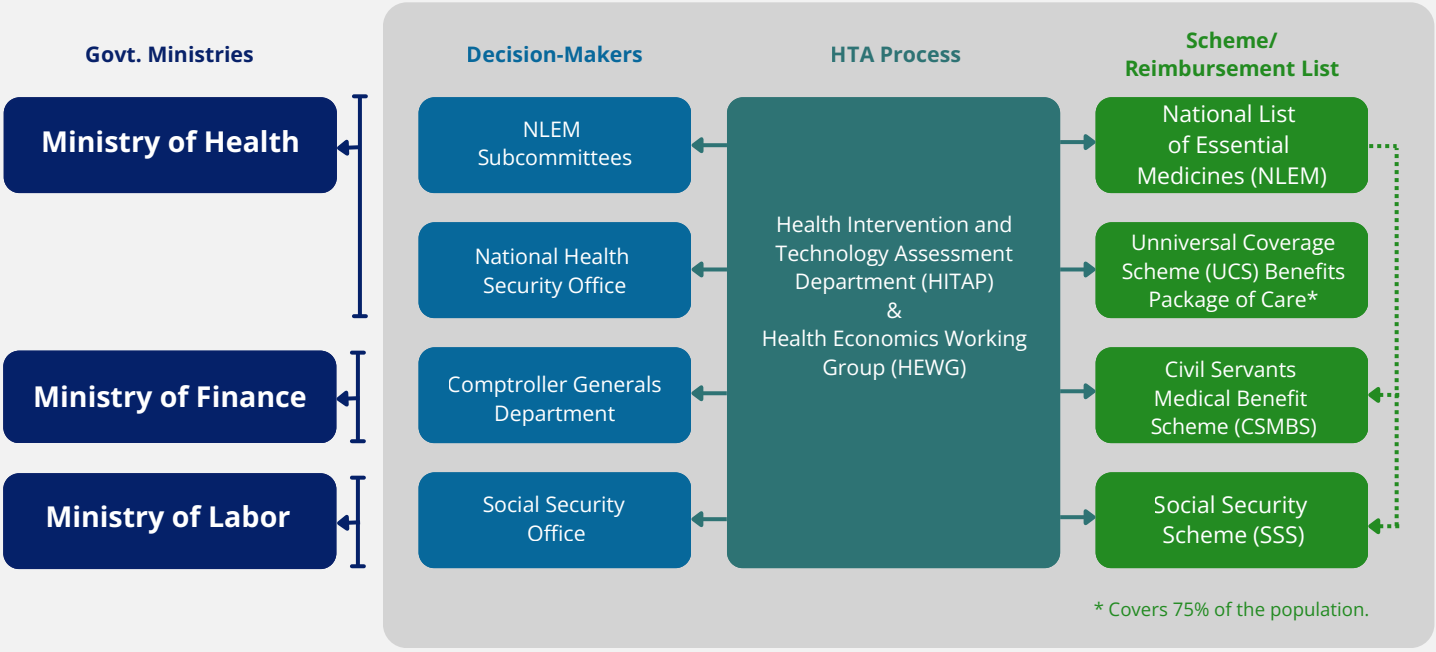


Figure 4: Thailand's decision architecture across three public schemes.

- **A strong foundation of health policy and systems research.** In response to the growing use of evidence-based research as a tool for health system and policy reform, in 1992, Thailand established the Health Systems Research Institute to build capacity for policy-relevant research. HSRI fostered collaboration with other government agencies, such as the MOPH, universities, and research institutes, to enable a health research ecosystem. Thailand also has a strong culture of stakeholder participation, which normalized participatory policy processes and made stakeholder involvement in HTA more feasible.
- **Transparency, participation, and accountability in the HTA process.** Policymakers emphasized that the HTA must be transparent, participatory, and accountable to gain legitimacy. Strong whole-of-market and whole-of-government stakeholder participation has strengthened links between evidence and policy, leading to more widely accepted findings and greater political legitimacy.
- **High-quality data.** HTA relies on robust, reliable data to inform studies and decision-making criteria. HITAP developed the Thai national database to support its HTA studies, a questionnaire to measure utility and quality of life, and a standard cost list.
- **International collaboration and supportive global policy environment.** Thailand drew on international HTA experiences, such as NICE in the United Kingdom, to inform its HTA guidelines and governance. Ongoing regional collaborations have allowed Thailand to build methodological capacity and align with global standards. The 2014 World Health Assembly resolution endorsing HTA in support of universal health coverage provided greater political legitimacy to Thailand's HTA program.

Evidence suggests that the HTA process has been an efficient tool for health innovation decision-making in Thailand. Estimates from the NHSO in 2012 suggest that HTA processes saved the government upward of $188 million by supporting price negotiations and strategic purchasing. Further, the HTA process is embedded within the health system with clear roles for UCS and the NLEM, supporting whole-of-government coordination and mitigating fragmentation and duplication of efforts.

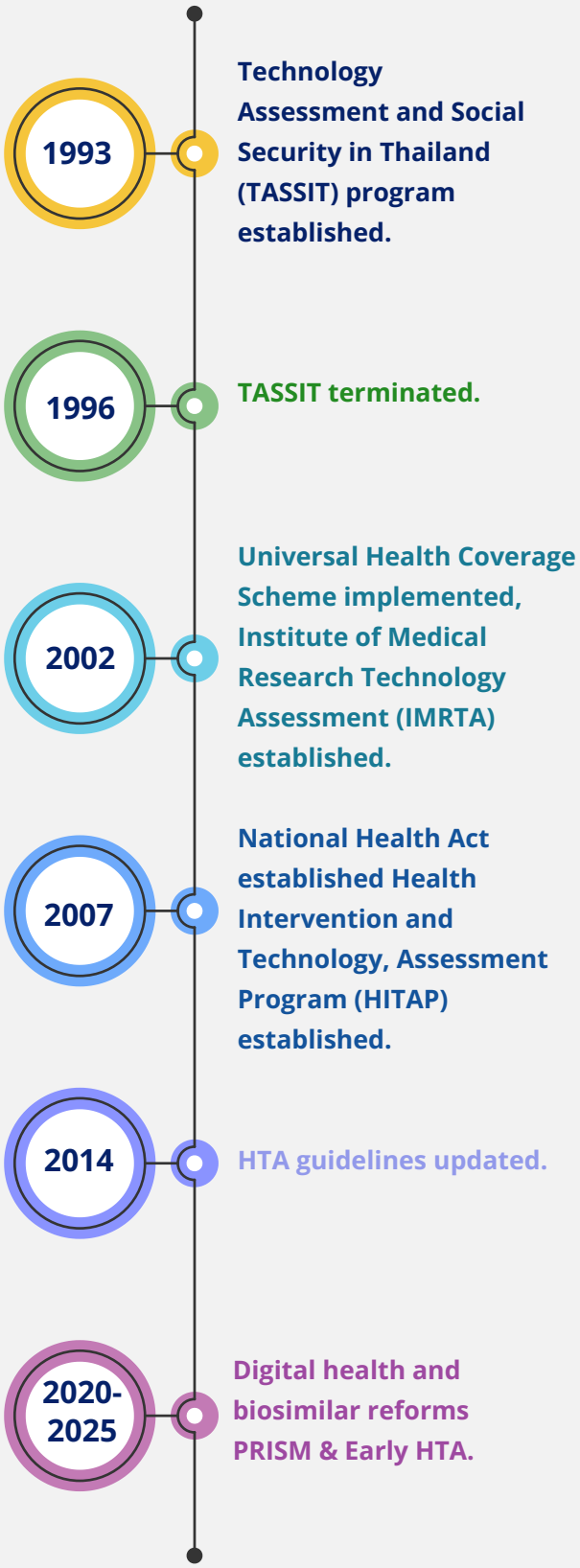


Figure 5: History of key reforms in health innovation prioritization and institutionalizing HTA in Thailand.

CRITICAL CONTEXT

- **Coverage and financing.**
  - **Who's covered.** Three public schemes together cover about 98% of Thailand's ~70 million population (roughly 69 million people): the Universal Coverage Scheme (UCS) for the informal sector (about three-quarters of the population); the Social Security Scheme (SSS) for private-sector employees; and the Civil Servants Medical Benefit Scheme (CSMBS) for government employees and dependents.
  - **What's covered.** The schemes provide a comprehensive benefits package that extends to high-cost services such as renal replacement therapy and antiretroviral treatment—depth that has been built deliberately through HTA.
  - **Who pays.** GoThailand spends about 4% of GDP on health (~$296 per capita in 2019), with over 70% of current health expenditure coming from the government and external donor financing effectively nil. Thailand's schemes are collectively financed largely through general revenue and payroll contributions. Thailand has kept out-of-pocket spending low (9% in 2019).
- **Coverage and purchasing decisions** fall to the National Health Security Office (NHSO) for UCS, the Social Security Office for SSS, and the Comptroller General's Department (CGD) for CSMBS. Between these sits the Health Intervention and Technology Assessment Program (HITAP).
- **Thailand's health system has historically been centralized**, with the MOPH as the dominant agency, though it has made efforts to transition to a decentralized model. The 1999 Decentralization Act mandated the transfer of health services to local authorities, but this has been a challenging and slow process that has yet to be fully implemented.
- **Thailand has become a reference country for middle-income HTA systems**, leading the HTAsiaLink network and supporting capacity building in more than 20 countries, including in sub-Saharan Africa (e.g., Ghana, Kenya).

INSIGHTS & IMPLICATIONS FOR OTHER COUNTRIES

Thailand's experience offers six transferable lessons for other countries seeking to institutionalize evidence-based decision-making for health innovation introduction (also summarized in Figure 6):

1. **Include HTA on the national agenda**. Locally funded and developed HTAs are more likely to impact national policy than HTAs conducted externally or with external resources. In Thailand, its HTA developed significantly over a short period of time because national authorities placed it high on the national health research agendas.

2. **Use HTA results as negotiation tools, not absolute gates.** HTAs have successfully supported price negotiations in Thailand. The $4,738 (160,000 baht) per QALY (quality-adjusted life year) benchmark anchors talks but allows equity-based exceptions (e.g., imiglucerase for Gaucher disease). Manufacturers may even submit price quotes prior to the evaluation, and the best price is used in the economic models. This encourages price competition among manufacturers. In addition to a negotiation tool, the HTA results can also be used as a link to the financial support, procurement, and M&E aspects of the UHC system.

3. **Establish participatory fora and transparency to build legitimacy and trust.** The inclusion of whole-of-market stakeholders, including healthcare providers, academic institutions, patients, pharmaceutical companies, and nonprofit organizations, throughout the HTA process has supported alignment with country priorities and values and fortified the legitimacy of the HTA process. Transparency in the processes, studies, and decisions builds trust among researchers, decision-makers, and the public.

4. **Invest early and build HTA capacity.** Introducing HTA can be difficult in LMICs because of the lack of specialized training for it and limited positions. HITAP made a concerted effort to recruit pharmacists and other health professionals and offer them on-the-job HTA training, and then focused on establishing formal training in academic programs. For example, pharmacoeconomics has been introduced in undergraduate and postgraduate pharmacy curricula.

5. **Coordinate across decision-making pathways.** Thailand has a high level of coordination across the pharmaceutical and non-pharmaceutical pathways due to strategic topic nomination across both pathways by stakeholders and overlaps in working group membership. ***However***, there is not a formal, systematic process for identifying trade-offs or complementarities along a care pathway, which may lead to out-of-sequence introduction, duplicated processes, or missed cost-saving opportunities.

6. **Embed HTA firmly in the health system, and protect it from political influence.** Linking HTAs directly to decision-making in the health system through clear HTA guidelines and processes that limit political influence has supported its sustainability and legitimacy.

The lesson is not to copy Thailand's institutions, but to adapt the functions beneath them. Thailand's experience with HTA is largely considered a success and has served as a model for other LMICs. In the Southeast Asia region in particular, Thailand has supported HTA capacity building and training. However, Thailand still faces challenges such as insufficient funding, human resource planning and management, evaluating public health interventions, and balancing efficiency and fairness. Thailand, through HITAP, is also exploring opportunities to continually improve decision-making, especially as more and increasingly expensive and novel innovations continue to reach the market.

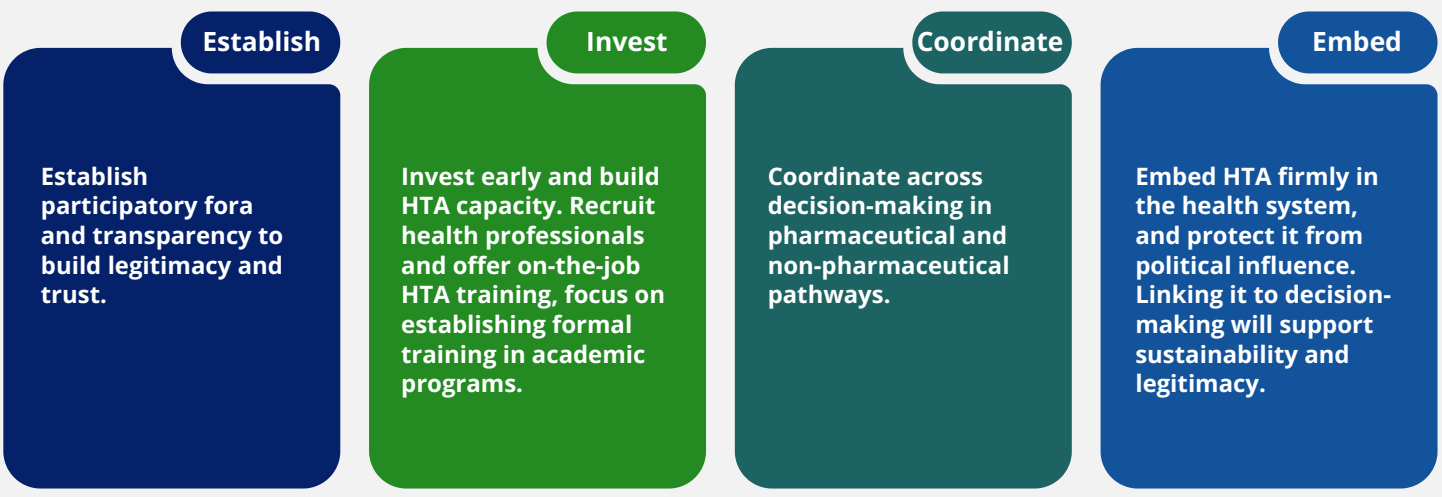


Figure 6: Summary of insights and implications for other countries about Thailand's experience with HTA.

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ABOUT THIS SERIES

This case study is one in a series of decision-making deep dives produced by the ALIGN Consortium as part of our shared learning agenda. Each examines how a particular country has navigated the persistent challenge of introducing new health innovations—how it evaluates, prioritizes, finances, and sustains them within real fiscal and political constraints. Our aim is not to rank systems or prescribe a single model, but to understand how reform actually unfolds: what enables it, what constrains it, and what does and does not transfer across contexts. These cases inform ALIGN's work alongside national partners and are offered in the spirit of mutual learning. We welcome reactions, corrections, and counter-examples from colleagues who know these systems first-hand.

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AI Disclosure: Authors used artificial intelligence to find initial sources and to improve writing for clarity.

ABOUT THE ALIGN CONSORTIUM

The ALIGN Consortium aims to improve health outcomes by strengthening the critical decision-making systems that determine how health product innovations are prioritized and introduced in countries, to make those systems more effective and efficient. Comprised of the Duke Global Health Innovation Center, the South African Medical Research Council (SAMRC), the Kenya Paediatric Research Consortium (Keprecon), and ENDA Santé, the ALIGN Consortium supports national governments in Kenya, Senegal, and South Africa to enhance innovation introduction, looking at four focus areas: whole-of-government coordination and capacity, data-driven decision-making, whole-of-market engagement (including national, regional, and global engagement), and portfolio-based planning. The goal is to create more accountable, resilient health systems that deliver better health outcomes faster for all, and to generate insights, tools, and resources that can be used by stakeholders around the world.

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Learn more about the ALIGN Consortium.