Life Sciences and Health in Thailand

Developments
Thailand has more than 25,000 health facilities nationwide, including over 1,000 public and 300 private hospitals and 10,000 clinics. With over 50,000 well-trained physicians, the country offers a wide range of services, from primary care to advanced level, as well as specialised services such as dentistry.

Growing Healthcare Market
Healthcare is one of the fastest growing sectors in Thailand and will be a driving force of the Thai economy in the future. According to BMI Research, total healthcare expenditure in Thailand amounted to US$25.3 billion in 2016 and is expected to increase to US$47.9 billion by 2026, reflecting a ten-year compound annual growth rate of 6.6%. Healthcare expenditure as a proportion of GDP is also sizeable, standing at 6.2% in 2016, although per capita spending is modest at US$367 for the same year.

The Thai government has given the healthcare industry top priority, as seen in the government’s expenditure on healthcare. In 2016, the government allocated 10.1% of its total budget to be spent on public health services including the operation of hospitals and health centres, provision of health care information, and research and development on public health.

The Universal Coverage Scheme has been to a great degree responsible for an increase in the demand for medical services and medicines in Thailand since it was established by the government in 2002. It provides a comprehensive health services from ante-natal care and child delivery to dental services, diagnosis, medicines listed under the national essential drug list and other preventive healthcare services as well as rehabilitation services.

Another catalyst is Thailand’s ageing population. The World Bank analysis reveals that as of 2016, 11% of the Thai population (about 7.5 million people) are 65 years or older, compared to 5% in 1995. By 2040, it is projected that 17 million Thais will be 65 years or older – more than a quarter of the population. Coupled with an increasing tech-savvy middle class, demand for specialised healthcare areas such as rehabilitative care and connected healthcare are gaining traction.

Medical tourism is a significant boost in Thailand’s healthcare market, particularly for private hospital business. The country is recognised as one of the most competitive destinations for high-quality and affordable care (healthcare costs in Thailand are only around one-fifth of those in the US and Europe). In 2016, the International Healthcare Research Centre ranked Thailand’s Medical Tourism Industry no. 6 in the world based on the destination attractiveness and medical tourism costs.
Thailand attracts over 2 million international patients a year and the number is rising. It is estimated that in 2015 the healthcare system in Thailand treated around 2.8 million foreign patients (up 10.2% from 2014) and generated earning of US$3 billion (up 15%). Most foreign patients are from the Middle East and Southeast Asian countries. Besides medical treatments, medical tourists also visit Thailand for health checks, cosmetic surgery/treatment (Botox etc.), wellness and traditional medicines.

The growth of the healthcare industry is also supported by the country's world-class medical facilities. Thailand is among the first in Asia to have hospitals accredited by the Joint Commission International (JCI) which is considered the gold standard in global healthcare. It also has the highest number of JCI accredited organisations in Southeast Asia, currently at 61.

The private hospital sector is expanding rapidly following a rise in domestic demand and a surge in medical tourists. The number of international patients is increasing steadily (up to 30-40% for some large hospitals), along with the number of expatriates living in Thailand and neighbouring countries. The revenue of private hospitals in Thailand is also growing faster than the country’s GDP. In 2016, the combined income and net profit of private hospitals listed on the Stock Exchange of Thailand grew by 7.5% and 7.3%, respectively from 2015.

To broaden a customer base and taking advantage from the economies of scale, recent investments have been made in the form of mergers and acquisitions of private hospitals, rather than greenfield projects. Thus, the structure of Thailand’s private healthcare market has changed toward a direction that operators are transforming into larger chains.

Major private hospitals listed on the Stock Exchange of Thailand include: Bangkok Dusit Medical Services (BDMS group comprising of Bangkok Hospitals, Phayathai Hospitals, Samitivej Hospitals, Paolo Memorial Hospitals, BNH Hospital, and Royal Hospitals); Bangkok Chain Hospital (Kasemrad Hospitals, World Medical Hospital, and Karunvej Hospital); Bumrungrad International Hospital; Vibhavadi Medical Centre and Chularat Hospital.

**Thailand’s Medical Hub Policy**

The Thai government has progressive policies in place to help the country attain the position of “Thailand, a Hub of Wellness and Medical Services” within a ten-year timeframe (2016-2025). The plan focuses on four major areas: wellness, medical services, academic & medical centre, and health products.

Thailand identifies Medical and Healthcare, including Affluent Medical and Wellness Tourism, amongst ten targeted industries to be given a boost in accordance with the government’s “Thailand 4.0” plan. This vision aims to transform the country into a value-based economy driven by innovation, technology and creativity.

Thailand’s Board of Investment (BOI) offers a wide range of tax and non-tax incentives to investment projects in medical and healthcare activities. The level of tax incentives depends on the importance of activities (activity-based) and the benefit to the country or overall industry (merit-based). Please see the Annex for specific details on the BOI tax incentives.

The BOI also provides additional technology-based incentives (BOI++) for investment in the development of Core Technologies (biotechnology, nanotechnology, advanced material technology, and digital technology) and Enabling Services that support targeted technology development. Qualified investment will receive 10-year corporate income tax (CIT) exemption plus merit-based incentives for 1-3 years, altogether with no more than 13 years.

In addition, the BOI offers Strategic Investment incentives (BOI++) of CIT exemption up to 15 years to promoted activities in the 10 targeted industries including medical hub. A ‘strategic project’ must be new to Thailand or utilise new technologies or apply advanced manufacturing know-how that will bring in the development and promotion of innovation in Thailand. Promoted projects may also receive financial support from the Competitiveness Enhancement Fund for the investment, R&D, promotion of innovation, or human resource development expenses.

Moreover, the Thai government is developing the Eastern Economic Corridor (EEC) which covers three provinces (Chachoengsao, Chonburi and Rayong) to be a new growth hub for Thailand 4.0 or innovative-based economy. Promoted healthcare projects located in the EEC are entitled to additional privileges e.g. a 50% CIT reduction for five years after the expiring date of the CIT exemption, a flat personal income tax rate of 17% (instead of progressive rate), rights to state’s land lease of up to 50+49 years, and a five-year work visa.

**Wide range of opportunities**

Taking into account the Dutch strengths, Thailand offers economic prospects in many segments, particularly Hospital Build, Medical Devices, Mobility & Vitality, eHealth and Biopharmaceuticals.

**Hospital Build**

Thai private hospitals have recently been active in elevating their efficiency and service standards. They have invested more to improve facilities and broaden the scope of services to serve new
market segments such as the development of excellence centres specialised in complex medical treatments, rehabilitation centres, and residential care homes. For example, BDMS group bought the Swissotel Nai Lert Park hotel in 2016 and plans to spend THB 2 billion (EUR 52 million) to develop it into the BDMS Wellness Clinic, a holistic services medical centre. Thai private hospitals also added more branches or new hospitals in provinces with major tourist destinations or border towns to support demand from neighbouring countries.

As a result, Dutch expertise in Hospital Build particularly health facility design & engineering could take an opportunity to tap into this rising trend in the construction or modernisation of Thai hospitals and healthcare facilities. An increase in environmental awareness and proficiency also widen Dutch business prospects in providing sustainable solutions for building management services including efficient work processes, logistics in healthcare sector, and waste & energy efficiency management.

Medical Devices
Thailand’s medical device market is the eighth largest in the Asia-Pacific region. BMI Research estimated the country’s market size was US$1.2 billion or US$17.4 per capita in 2016 and is expected to grow at a high single-digit rate (CAGR of 8.1% during 2015-2020) to reach US$1.7 billion in 2020. Consumable devices and diagnostic imaging are among the products with large market share, followed by orthopaedics & prosthetics, dental products and patient aids.

Local production is limited to consumables and basic medical devices. There are around 320 local manufacturers, mostly small and medium companies (SMEs) producing products such as diagnosis kits, syringes, surgical gloves and catheters. Over 80% of domestic production is for export.

Thailand continues to rely on import to supply most of the market, particularly high-grade and sophisticated medical devices. In 2015, the Netherlands was the eighth largest supplier to Thailand with import valued at US$23.8 million or 2.3% of the total. There are approximately 1,500 importers and distributors of medical devices in Thailand. The majority of them are SMEs. Large importers/distributors are subsidiaries or authorized distributors of international brands.

As Thailand’s medical device market has continued to thrive, there are promising prospects for Dutch companies to export advanced medical devices to Thailand. The prospective areas include those related to surgical procedure equipment, implanted medical devices, respiratory devices and oxygen therapy, orthopaedic implant devices, heart valves, neurosurgical devices, rehabilitation equipment & accessories and dermatological devices.

Moreover, as part of its plan to become a leading medical hub, the Thai government through the BOI actively promotes investment in the manufacturing of medical devices in Thailand by providing various incentives (see Annex). These could render opportunities for Dutch medical device manufacturers.

Thailand’s Food and Drug Administration (FDA) regulates the quality, safety and efficacy of medical devices in Thailand. To import medical devices into Thailand, an importer must have an import authorisation and registration permit from the Thai FDA. For selling, the medical devices must be granted a licence from or registered with the FDA according to a risk-based classification system. Refurbished or used medical devices are prohibited in Thailand.

Mobility & Vitality
The demand for specialised healthcare such as rehabilitation services and elderly care is growing apace with the greying population of Thailand. Orthopaedic disorders and non-infectious diseases are on the rise – roughly one in three adults suffers from a high blood pressure. At the same time, the increasing income of Thai households also leads to growing demand on aids and nursing care.

Thailand’s interest in the adoption of advance technology to support these trends will raise its demand on robotics for mobility and gait rehabilitation systems in which Dutch expertise could provide.

In addition, there is a collaborative call for developing assistive robots. Thailand Centre of Excellence for Life Sciences (TCELS) has established a Centre for Advanced Medical Robotics to provide support for the development of new robotic models. It is looking for international research partnering and investors to enhance the effectiveness of Thai health care delivery system. The first phase of its program is focused on evolving the prototypes of robotic nurse assistants, rehabilitation robotics, and disability or elderly care robots.

eHealth
As people would like to live healthier and longer together with a rising tech-savvy middle class, the need for e-healthcare is increasing. Other key factors affecting growth of Thailand’s healthcare IT market are medical tourism and the advancement of the internet and technology. Thai hospitals are also upgrading IT infrastructure to maintain and obtain JCI accreditation.
The country has several initiatives under the Ministry of Public Health and the new Ministry of Digital Economy and Society to develop the health IT industry. Projects include: connecting 9,000 sub-district hospitals nationwide with high speed broadband internet; centralising databases with patients’ health profiles; and developing big data analytics capability e.g. in preparation for epidemics.

Meanwhile, Thailand continues to face challenges in the shortage of medical workforce and regional disparities as well-equipped hospitals and well-trained staff tend to proliferate in larger cities than remote areas. The country thus has a plan to implement tele-medicine to serve people and patients in rural and remote areas. A pilot telemedicine project has been set up in Tak province.

As the Netherlands is a global market leader in digital healthcare, the growing demand for connected healthcare in Thailand looks promising for Dutch technology in software & application developments and internet platforms. These include innovations and solutions in remote healthcare, wireless healthcare, tele-health, telemedicine, and living aid, as well as application in tracking wearables.

Pharmaceuticals & Biopharmaceuticals

Thailand’s pharmaceutical market is the eighth largest in the Asia Pacific region and considered as one of the largest and most developed in ASEAN. It was valued at US$4.6 billion in 2016 and forecast to grow at a compound annual growth rate of 6.2% to reach US$6.3 billion by 2021 and US$8.4 billion by 2026, respectively. Thailand is the net importer of pharmaceutical products, particularly active pharmaceutical ingredients.

Many international suppliers have already had their presence in Thailand exploiting from the benefits of the country’s agricultural/chemical inputs, relatively skilled and affordable labour, reasonable technology and high quality control standards. These include Abbott, Novatis, Baxter, Pfizer, GSK, Mega, Thai Otsuka, AstraZeneca, Sanofi, Merck, DKSH, Takeda, Mead Johnson, and Linaria. Dutch pharmaceutical company BioClin has also chosen to set up its manufacturing plant in Bangkok to serve all the Southeast Asian countries.

To import drugs into Thailand, an import licence is required. The drugs must be registered with the Thai FDA before they can be distributed, except for active pharmaceutical ingredients, semi-finished products and sample drugs for registration purposes which do not require product registration. Drug store requires a licence to sell. Direct mailing or the distance selling of drugs are not allowed. Drug advertisements and promotional materials must be approved by the Thai FDA before dissemination.

R&D Landscape in Thailand

Thailand’s health research system comprises of four major stakeholder groups: the research funding agencies, the researchers and research institutes, research users, and the general public. Main sources of funding are the government, international funding organisations such as the National Science and Technology Development Agency in terms of technical assistance and R&D grants, Thailand Science Park for the ecosystem, and Thailand Center of Excellence for Life Sciences if to establish bioscience companies.

There are several research institutes/bodies that primarily focus on health R&D. Each institution has its own specific priority areas. These include:

- National Science and Technology Development Agency (NSTDA) which comprises of four affiliated research centres - the National Centre for Genetic Engineering and Biotechnology (BIOTEC: www.biotec.or.th), the National Metal and Materials Technology Centre (MTEC: www.mtec.or.th), the National Electronics and Computer Technology Centre (NECTEC: www.nectec.or.th), and the National Nanotechnology Centre (NANOTEC: www.nanotec.or.th);
Health Systems Research Institute (HSRI), an autonomous state agency responsible for promoting research that assists in the formulation of a national health policy and the coordinator for mobilising health systems reform in Thailand (www.hsri.or.th);

Department of Medical Sciences which conducts R&D on medical sciences knowledge and technologies for the improvement of health product, risk assessment and warning of the health hazard, and also acts a national reference laboratory and accrediting quality assurance for health products and diseases diagnostic (www3.dmsc.moph.go.th);

Chulabhorn Research Institute which focuses on biomedical and chemistry research (www.cri.or.th).

Meanwhile, most of the medical breakthroughs are conducted by the faculty of medicine of university hospitals. Leading ones are Sirirat Hospital of Mahidol University, Ramathibodi Hospital of Mahidol University, Srinakharinwirot University, Khon Kaen University, Chiang Mai University, and Prince of Songkla University.

Thailand Science Park (TSP), located in Pathum Thani province (north of Bangkok), is the country's first science and technology park established in 2002 with the mission to promote innovation development and R&D activities in the private sector. TSP is managed by NSTDA and it houses NSTDA headquarters and the four affiliated research centres. If offers testing services, R&D support, financial support and business support. The facility includes R&D lease space, leasehold land, convention centre, and advance ICT infrastructure. Corporate tenants conducting R&D in TSP are entitled to receive maximum investment privileges from BOI Thailand.

Thai Business Incubators and Science Parks Association (Thai-BISPA) serves as a focal point of collaboration, business networking, knowledge sharing, and capacity development for business incubator centres and science park operations in Thailand.

Key Stakeholders

Public Sector

• The Ministry of Public Health (MoPH) - a governmental body responsible for the oversight of public health in Thailand: www.moph.go.th

• The Food and Drug Administration of Thailand (FDA) under the Ministry of Public Health - the regulator on the manufacturing, import and distribution of food, drugs, cosmetics, hazardous substances, psychotropic substances, narcotics, medical devices, and volatile substances: www.fda.moph.go.th

• Government Pharmaceutical Organisation (GPO) - a state enterprise which manufactures and sells pharmaceutical products: www.gpo.or.th

• Thailand Centre of Excellence for Life Sciences (TCELS) - a single platform that supports the establishment of life science based business and investment in Thailand: www.tceels.or.th

• Thailand Science Park - a technology and innovation hub of Thailand, providing one-stop service for innovation development and R&D in private sector: www.sciencepark.or.th

• National Science and Technology Development Agency (NSTDA) - a bridge between academic research and the private sector: www.nstda.or.th

• National Innovation Agency (NIA) – a public organisation that undertakes a broad-based and systematic approach in facilitating innovation development in Thailand: www.nia.or.th

• Thai Customs Department, which has a role in controlling the movement of goods including medical devices and pharmaceutical products into Thailand: www.customs.go.th

• Health Systems Research Institute (HSRI), an autonomous state agency responsible for promoting research that assists in the formulation of a national health policy and the coordinator for mobilising health systems reform in Thailand (www.hsri.or.th);

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Relevant Associations

• The Private Hospital Association, Thailand: www.thaiprivatehospitals.org

• Thai Medical Device Technology Industry Association (THAIMED): www.thaimed.co.th

• The Royal College of Physiatrists of Thailand and Thai Rehabilitation Medicine Association: http://rehabmed.or.th/main/

• Science and Technology Trade Association (STTA): www.stta.or.th

• Medical and Health Device Manufacturers Industry Club under the Federation of Thai Industries: http://ftiweb.off. fti.or.th/industrialgroup/Medical_Health/index.asp

• Pharmaceuticals Industry Club under the Federation of Thai Industries: http://ftiweb.off.fti.or.th/industrialgroup/ medical/index.asp

• Thai Business Incubators and Science Parks Association (Thai-BISPA): www.thaibispa.or.th

Related trade fairs

• Medical Devices ASEAN: 11-13 July 2018, IMPACT (http://medicaldeviceasean.com/)

• Thailand Lab International (held annually): 12-14 Sep 2018, BITEC, Bangkok (www.thailandlab.com)

• Medical Fair Thailand (held biennial): 11-13 Sep 2019, BITEC, Bangkok (www.medicalfair-thailand.com)
**Annex**

**Thailand Board of Investment’s Activity-based Incentives for Healthcare Sector**

<table>
<thead>
<tr>
<th>Eligible Activities</th>
<th>Tax</th>
<th>Non-tax**</th>
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<tbody>
<tr>
<td></td>
<td>Corporate Income Tax exemption</td>
<td>Exemption of import duty*</td>
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<tr>
<td><strong>Medical and healthcare related services</strong></td>
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<td></td>
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<tr>
<td>Engineering design</td>
<td>8 years without cap +Merit-based</td>
<td>√</td>
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<tr>
<td>Scientific laboratories</td>
<td>8 years without cap +Merit-based</td>
<td>√</td>
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<tr>
<td>Calibration services</td>
<td>8 years +Merit-based</td>
<td>√</td>
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<tr>
<td>Product sterilization services</td>
<td>8 years +Merit-based</td>
<td>√</td>
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<tr>
<td><strong>Digital services</strong></td>
<td></td>
<td></td>
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<tr>
<td>• Software platform</td>
<td>5 years +Merit-based</td>
<td>√</td>
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<tr>
<td>• Manages service</td>
<td></td>
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<tr>
<td>• Digital architecture design service</td>
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<tr>
<td>• Digital services such as MedTech</td>
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<tr>
<td>Projects in health rehabilitation centres</td>
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<tr>
<td><strong>Manufacturing of medical devices</strong></td>
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<tr>
<td>High-risk or high-tech medical devices (e.g. X-ray machine, MRI machine, CT scan machine and implants) or medical devices that are commercialised from public sector research or collaborative public-private sector research – in case projects involve R&amp;D and innovation</td>
<td>8 years without cap +Merit-based</td>
<td>√</td>
</tr>
<tr>
<td>High-risk or high-tech medical devices or medical devices that are commercialised from public sector research or collaborative public-private sector research – in case projects does not involve R&amp;D and innovation</td>
<td>8 years +Merit-based</td>
<td>√</td>
</tr>
<tr>
<td>Other medical devices that do not made of fabrics or fibres</td>
<td>5 years +Merit-based</td>
<td>√</td>
</tr>
<tr>
<td>Medical devices made of fabrics or fibres e.g. gowns, drapes, caps, face masks, gauze and cotton wool</td>
<td>3 years +Merit-based</td>
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<tr>
<td><strong>Manufacturing of scientific equipment</strong></td>
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<tr>
<td>Using high technology</td>
<td>8 years +Merit-based</td>
<td>√</td>
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<tr>
<td>Non-high tech</td>
<td>5 years +Merit-based</td>
<td>√</td>
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<tr>
<td><strong>Pharmaceuticals</strong></td>
<td></td>
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<tr>
<td>Active pharmaceutical ingredients</td>
<td>8 years +Merit-based</td>
<td>√</td>
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<tr>
<td>Manufacture of medicine</td>
<td>5 years +Merit-based</td>
<td>√</td>
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<tr>
<td><strong>Biotechnology</strong></td>
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<tr>
<td>R&amp;D activity and/or manufacturing of biopharmaceutical agents using biotechnology</td>
<td>8 years without cap +Merit-based</td>
<td>√</td>
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<tr>
<td>R&amp;D and/or manufacturing of bio-molecules and bioactive substances using microorganisms, plant cells and animal cells</td>
<td>8 years without cap +Merit-based</td>
<td>√</td>
</tr>
<tr>
<td>R&amp;D and/or manufacturing of diagnostic kits for health</td>
<td>8 years without cap +Merit-based</td>
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Note: * Exemption of import duty on all machinery and exemption of import duty on raw material or essential materials used in manufacturing of exported products

** Non-tax incentives include permission to bring in expatriates, to take or remit foreign currency abroad, and to own land