THE FUTURE OF THAILAND’S HEALTHCARE INDUSTRY IN TIER 2 CITIES

OUTLOOK FOR 2015 - 2020
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ABSTRACT

Thailand is among the Southeast Asian countries with advanced economic development and healthcare infrastructure. Bangkok has been the center of both economic and social development in Thailand over the past decade. However, Tier 2 cities or smaller cities outside Bangkok are increasingly expanding with the growth of private and public sectors. These cities generally serve as regional hubs and have common characteristics of being highly urbanized compared to other provinces in the same region.

As Tier 2 cities have been urbanized, their population has grown more affluent. They are accustomed to better living standard and demanding more. Healthcare services are among many services that people in these cities, with better income and education, would be willing to pay for.

As geographical landscape of investment changes, it is crucial for healthcare businesses to act according to this future change.
THAILAND HEALTHCARE OVERVIEW
THAILAND HEALTHCARE SPENDING

HEALTHCARE SPENDING, BY COUNTRIES (% OF GDP)

<table>
<thead>
<tr>
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<tr>
<td>AEC Average</td>
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<td>7.0</td>
<td>7.2</td>
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<td>Germany</td>
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<td>10.7</td>
<td>11.7</td>
<td>11.4</td>
<td>11.3</td>
<td>11.5</td>
</tr>
</tbody>
</table>

THAILAND HEALTHCARE EXPENDITURES (IN BILLION THB)

- Private Healthcare Expenditure
- Government Healthcare Expenditure

<table>
<thead>
<tr>
<th>Year</th>
<th>Private</th>
<th>Government</th>
<th>Total</th>
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<tbody>
<tr>
<td>2008</td>
<td>2.6</td>
<td>8.2</td>
<td>10.8</td>
</tr>
<tr>
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<td>3.1</td>
<td>9.3</td>
<td>12.4</td>
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<tr>
<td>2011</td>
<td>3.3</td>
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<tr>
<td>2012</td>
<td>3.3</td>
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<td>13.2</td>
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<tr>
<td>2013</td>
<td>3.4</td>
<td>10.5</td>
<td>13.9</td>
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<tr>
<td>2014</td>
<td>3.7</td>
<td>11.4</td>
<td>15.1</td>
</tr>
<tr>
<td>2015</td>
<td>4.0</td>
<td>12.5</td>
<td>16.5</td>
</tr>
</tbody>
</table>

Source: Economist Intelligence Unit, WHO
Healthcare expenditure in Thailand is still very low in comparison to Organization for Economic Cooperation and Development (OECD) countries and China. However, the country’s health expenditure is slightly higher than its peers in AEC.

Public sector is the main driver of healthcare spending in Thailand. Spending comes mainly from the Ministry of Public Health and from insurance schemes i.e. national universal healthcare, social security and civil service scheme.

Urbanization and medical tourism are the main drivers for investment in private sector, especially in cities outside Bangkok.
Singapore, Brunei, and Malaysia are the only AEC countries with per capital health expenditure (PPP) above global median. While Thailand is slightly below global median, it is still higher than its peers in AEC.

Unlike in Singapore where private sector is the main contributor to healthcare expenditure, in Thailand and other leading AEC nations in this category such as Brunei, the government plays an important role in healthcare expenditure.

Universal Coverage and Civil Servant Medical Benefit Scheme account for the bulk of the Thai government’s spending in healthcare.

Source: WHO World Health Statistics 2014
THAI HEALTHCARE SCHEME

UC, SSS and CSMBS are three main health insurance schemes. A combination of these health insurance schemes, resulting in a 99.47% universal coverage among the entire population.

<table>
<thead>
<tr>
<th>SCHEME</th>
<th>UNIVERSAL COVERAGE (UC)</th>
<th>SOCIAL SECURITY SCHEME (SSS)</th>
<th>CIVIL SERVANT MEDICAL BENEFIT SCHEME (CSMBS)</th>
<th>PRIVATE INSURANCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCHEME NATURE</td>
<td>Citizen entitlement</td>
<td>Mandatory</td>
<td>Fringe benefit</td>
<td>Private contract</td>
</tr>
<tr>
<td>TARGET BENEFICIARIES</td>
<td>Thai citizen</td>
<td>Private sector employee</td>
<td>Government employee, dependents * and retirees</td>
<td>Insured employees and employers</td>
</tr>
<tr>
<td>POPULATION COVERAGE (2013)</td>
<td>47 Million</td>
<td>10 Million</td>
<td>5-6 Million</td>
<td>6-9 Million**</td>
</tr>
</tbody>
</table>

* CSMBS’s dependents coverage includes parents, spouse, and children under 18
** Beneficiaries in private insurance are also covered by public scheme

Source: Ministry of Public Health, National Economic and Social Development, National Health Security Office
INCREASING GOVERNMENT’S SPENDING TO STRENGTHEN THE UNIVERSAL COVERAGE SCHEME FOR THE PAST 10 YEARS:

Total government budget for Universal Healthcare Scheme was 51 billion baht in 2002 (USD 1.6 billion), 91 billion baht in 2007 (USD 2.9 billion) and up to 106 billion baht in 2009 (USD 3.4 billion). The budget was spent primarily for patient treatments, hospital facilities and medical equipment expenditures.

Privately-insured patients are also covered by the public healthcare scheme but they do not regularly use it.

Source: Ministry of Public Health, National Economic and Social Development, National Health Security Office
PM Thaksin (Thai Rak Thai party) initiated the 30-baht per visit universal healthcare scheme. The program had increased access to healthcare from 76% of the population to 96%.

The Democrat Party was in power. It scrapped the 30-baht per visit program, changing it to free universal healthcare for the public.

Pheu Thai Party reinstated the 30 baht program, claiming that the program would reduce burden on the government’s budget. However, many observers said that the party simply wanted to revive the image of its populist scheme.

Source: The Nation, Bangkok Post
The National Health Security Fund (NHSF) that manages the most population coverage of 47 million on Universal Coverage (UC) received the biggest share of funds allocated by the government. However, only 32.8 million out of 47 million have received services under the universal healthcare scheme, according to the Ministry of Healthcare (MoH).

The government is trying to limit the budget for the country’s medical insurance after healthcare costs have been skyrocketing in the past few years.

After the reform of healthcare coverage in 2002, UC has become the most important social tool in the health system and this policy will likely continue in the future. The question remains whether the quality will be still be there as the cost rises.

Source: The Nation, Bangkok Post

BUDGET ALLOCATION PLAN (IN BILLION USD), 2013

GOVERNMENT’S HEALTHCARE BUDGET: USD 6.5 BILLION IN 2013

The National Health Security Fund (NHSF) that manages the most population coverage of 47 million on Universal Coverage (UC) received the biggest share of funds allocated by the government. However, only 32.8 million out of 47 million have received services under the universal healthcare scheme, according to the Ministry of Healthcare (MoH).

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Source: The Nation, Bangkok Post
Hospital beds per population in AEC nations are still below the global median, except for Brunei. This provides more room for expansion in healthcare sectors.

While Thailand is among other AEC nations whose numbers of hospital beds stand is lower than global median, the country's number of hospital beds is significantly higher than AEC median.

Source: WHO World Health Statistics 2014
Despite having relatively advanced economies in comparison to other AEC nations, Thailand's number of doctors per 10,000 population is below average.

The limited number of doctors in Thailand is one of the major hurdles that hamper the growth of its healthcare industry.

Source: WHO World Health Statistics 2014
Thailand covers an area of approximately 514,000 square kilometers which consists of 77 provinces (note that in this paper we will refer more as cities rather than provinces). The country is divided into 4 regions: North, Northeast, Central and South, in which at least one of the Tier 2 cities is located.

As of December 2013, Thailand had a total population of 64.9 million, more than 95% of which is covered by health insurance schemes.

Thailand demographic comprises of 31.53 million males and 32.55 million females with a growth rate of 0.3-0.6% per annum over the past decade.

Total population in Thailand was 64.9 Million in 2013

TOTAL POPULATION (IN MILLION) BY GENDER

Source: Population Registration based on National Statistics Office
THAILAND HEALTHCARE SITUATION: TOP 5 CAUSES OF DEATH

1. CANCERS


2. ACCIDENTS AND POISONINGS

3. HYPERTENSION AND CEREBROVASCULAR DISEASES
4. HEART DISEASES

There is an increasing numbers of deaths from heart disease, hypertension, and stroke.

Declining numbers of deaths from accidents and poisonings are due to better education about road safety and driving behavior and stricter regulations from the government.

TOP 5 CAUSES OF OUTPATIENT VISITS IN THAILAND (MILLIONS) 2004 - 2012

1. RESPIRATORY SYSTEM DISEASE

2. CIRCULATORY SYSTEM DISEASES

3. ENDOCRINE, NUTRITIONAL AND METABOLIC DISEASES

4. DIGESTIVE SYSTEM DISEASES

5. MUSCULOSKELETAL SYSTEM AND CONNECTIVE TISSUE DISEASES

Diseases of the respiratory system is the main cause of OPD (outpatient department) visits in Thailand.

Number of OPD is in an upward trend as a result of healthcare scheme, covering medical expense of most population.

TOP 5 CAUSES OF INPATIENT IN THAILAND (THOUSANDS) 2004 - 2012

1. HYPERTENSIVE DISEASES

2. HEMORRHAGIC CONDITIONS AND OTHER DISEASES OF BLOOD AND IMMUNE MECHANISM

3. DISEASES OF THE DIGESTIVE SYSTEM

Endocrine, nutritional and metabolic diseases have the highest growth rate. The number of patients because of the disease have increased approximately 4 times since 2006.

All top-five diseases show a growing trend with a rapid change in 2011.

What Are the Drivers of Future Demand for Health Services?

Life expectancy of Thailand population has increased as healthcare services improve. This will push up Thailand’s aging population by 2020.

Life Expectancy at Birth, 2012

<table>
<thead>
<tr>
<th>Country</th>
<th>Life Expectancy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Singapore</td>
<td>83</td>
</tr>
<tr>
<td>Brunei</td>
<td>77</td>
</tr>
<tr>
<td>Vietnam</td>
<td>76</td>
</tr>
<tr>
<td>Thailand</td>
<td>75</td>
</tr>
<tr>
<td>Global Median</td>
<td>74</td>
</tr>
<tr>
<td>Malaysia</td>
<td>74</td>
</tr>
<tr>
<td>Cambodia</td>
<td>72</td>
</tr>
<tr>
<td>Indonesia</td>
<td>71</td>
</tr>
<tr>
<td>Philippines</td>
<td>69</td>
</tr>
<tr>
<td>AEC Median</td>
<td>67</td>
</tr>
<tr>
<td>Laos</td>
<td>66</td>
</tr>
<tr>
<td>Myanmar</td>
<td>66</td>
</tr>
</tbody>
</table>

Source: WHO World Health Statistics 2014
Thai’s life expectancy is slightly higher than the average of its AEC peers.

Like other countries, aging population comes with geriatric diseases. Hence, this is becoming a critical concern for the already under-budgeted healthcare system.

The next charts depict Thailand population by age group in 2000 and projected population in 2020 respectively, it is clear that aging population will become a significant issue in the next decades.
AGING POPULATION IS EXPECTED TO DRIVE DEMAND FOR HEALTHCARE SERVICES IN THE NEXT 10 YEARS AS AGED POPULATION IS FORECAST TO ACCOUNT FOR 19% OF THE POPULATION.

According to National Economic and Social Development Board (NESDB), aged population in Thailand is expected to account for 19% of the total population by 2020. The number of people aged 60 years and above is expected to grow rapidly at 5.5% annually.

WHO also forecasts that aging population will account for 30% of the population by 2050.

As a result, demand for healthcare services whether for maintaining or treating of elderly health will surge in the near future. This also puts a challenge for both public and private healthcare stakeholders when planning to invest for facilities, medical equipment and medical workers.

Source: National Economic and Social Development Board, 2013
“Urbanization is the main driver of future demand for healthcare services. As urban population generally possess higher purchasing power, they demand better level of services and willing to pay for services in private hospitals”,

Assistant Managing Director of a Private Chain-hospital, Health Focus.org
Urbanization in Thailand has been growing rapidly since 1990s. Over the past decade, the country has experienced booming economic development through exports and industrialization.

In 2020, urban population is expected to account for 38% of the overall population in Thailand.

Source: United Nations, World Urbanization prospects database
The former Prime Minister Thaksin Shinawatra initiated the medical tourism in 2003. The Medical Tourism Promotion project highlighted Thailand’s high quality medical services at relatively more competitive prices compared to medical services in developed countries.

The Tourism Authority of Thailand targets high growth for medical tourism. It expects the AEC agreements to boost the growth of foreign patients while facilitating the flow of people within ASEAN countries.

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Source: Ministry of Public Health
THERE WERE ESTIMATED 2.53 MILLION FOREIGN PATIENTS COMING TO THAILAND IN 2012 FOR ITS HEALTHCARE SERVICES, GENERATING INCOME OF USD 4.9 BILLION.

THREE GROUPS OF FOREIGNERS

1. Foreign Residents
2. Tourists
3. Visitors Seeking Specific Medical Treatments

POPULAR MEDICAL TREATMENTS

1. Orthopedics
2. Heart Surgery
3. Cosmetic Surgery
4. Dental Works
DRIVERS FOR MEDICAL SERVICES IN THAILAND TIER 2 CITIES
CHARACTERISTICS OF TIER 2 CITIES:

What are Thailand Tier 2 Cities? Chiang Mai, Khon Kaen, Surat Thani, Ubon Ratchathani, Nakhon Ratchasrima, Chonburi and Songkhla.

CHARACTERISTICS OF TIER 2 CITIES:

- Ranked among the top 20 most populous city in the country (>1 million of population size)
- Ranked among the highest GDP per capita in each region
- Ranked among the top 20 city with the highest numbers of medical institutes
- Ranked among the top 20 city with the highest numbers of in-patient beds (>2,500 in-patient beds)
THAILAND TIER 2 CITIES’ PROFILES

CHIANG MAI
- Population: 1.65 million (49% male, 51% female), 56% urban population
- Average monthly income: 18,323 baht
- Medical facility: 58 institutions/ 6,617 inpatient beds
- The top 3 causes of death: Cancer, Nephritis and nephritic syndrome, Hypertension and cerebrovascular diseases

KHON KAEN
- Population: 1.78 million (50% male, 50% female), 40% urban population
- Average monthly income: 16,030 baht
- Medical facility: 33 institutions/ 4,000 inpatient beds
- The top 3 causes of death: Cancer, Nephritis and nephritic syndrome, Hypertension and cerebrovascular diseases

UBON RATCHATHANI
- Population: 1.82 million (50% male, 50% female), 24% urban population
- Average monthly income: 21,660 baht
- Medical facility: 30 institutions/ 3,260 in-patient beds
- The top 3 causes of death: Cancer, Nephritis and nephritic syndrome, Hypertension and cerebrovascular diseases

NAKHON RATCHASIMA
- Population: 2.59 million (49% male, 51% female), 26% urban population
- Average monthly income: 19,399 baht
- Medical facility: 48 institutions/ 3,928 inpatient beds
- The top 3 causes of death: Cancer, Nephritis and nephritic syndrome, Hypertension and cerebrovascular diseases

CHONBURI
- Population: 1.34 million (49% male, 51% female), 75% urban population
- Average monthly income: 23,007 baht
- Medical facility: 36 institutions/ 3,893 inpatient beds
- The top 3 causes of death: Cancer, heart diseases, pneumonia and other lung diseases

SURAT THANI
- Population: 1.01 million (49% male, 51% female), 41% urban population
- Average monthly income: 34,417 baht
- Medical facility: 34 institutions/ 2,806 inpatient beds
- The top 3 causes of death: Cancer, heart diseases, hypertension and cerebrovascular diseases

SONGKHLA
- Population: 1.37 million (49% male, 51% female), 54% urban population
- Average monthly income: 21,711 baht
- Medical facility: 52 institutions/ 3,257 inpatient beds
- The top 3 causes of death: Cancer, heart diseases, hypertension and cerebrovascular diseases

Bangkok accounted for 35% of Thailand’s GDP in 2002 while other provinces made up 6% of the country’s GDP. In 2012, Bangkok GDP was estimated at THB 3,550 million (USD 118 million), representing only 29% of the country’s GDP.

Over the decade, Bangkok’s maturing economy had lost its pace of economic growth to the urbanizing provinces. While Bangkok GDP grows at average of 3.7% annually, overall Thailand GDP grows at 4.2% which represents significant growth contribution from other provinces.

Source: National Statistical Office
TIER 2 CITIES IN THAILAND HAVE EXPERIENCED THE EXPLOSION OF URBANIZATION IN THE LAST DECADE.

**URBANIZATION IN TIER 2 CITIES**

The graph above represents percentage of urbanized population in Bangkok vicinities and other Tier 2 Cities in 2000 and 2010.

During the decade, Tier 2 Cities had an average of 57% growth in urbanized population compared to a single digit growth in Bangkok vicinities.

As a matter of fact, Chonburi is significantly more urbanized than Bangkok vicinities with approximately 3 out of 4 population living in urban areas.

Note: Population Census is conducted every 10 years.  
Source: Population Census based on National Statistical Office
IN LINE WITH THE INCREASE OF URBANIZATION, THAILAND TIER 2 CITIES HAVE EXPERIENCED SIGNIFICANT GROWTH IN HOUSEHOLD INCOME

Compared to Bangkok, most of the Tier 2 Cities have experienced high growth in household income. This is also one of the results of the fast growing urbanization outside Bangkok which is increasing jobs and purchasing power to local people.

Note: Population Census is conducted every 10 years.
Source: Population Census based on National Statistical Office
THAILAND TIER 2 CITIES BACKGROUND

NUMBER OF POPULATION IN BANGKOK VS. TIER 2 CITIES (‘000) BY GENDER, 2011

Note: vicinities include Nonthaburi, Pathum Thani, Nokorn Pathom, Samut Prakarn and Samut Sakorn

Total Population = 11.6 Million

Female | Male
--- | ---
Bangkok | 5,674 | 4,352
Chiang Mai | 1,656 | 1,775
Khon Kaen | 1,827 | 1,364
Ubon Ratchathani | 2,601 | 1,023
Nakhon Ratchasima | 1,379 | 1,023
Chonburi | 1,379 | 1,379
Surat Thani | 1,379 | 1,379
Songkhla | 1,379 | 1,379

Note: vicinities include Nonthaburi, Pathum Thani, Nokorn Pathom, Samut Prakarn and Samut Sakorn.
Approximately 19% of the total population lives in these Tier 2 Cities, compare to 13% in Bangkok. As the country continues to become urbanized, the number of urban population in Tier 2 Cities is now reaching 5 million, which accounts for almost 10% of the total population in 2010.

Note: Population Census is conducted every 10 years
Source: National Statistic Office
NUMBER OF HOSPITALS IN THAI TIER 2 CITIES (2013)

CHIANG MAI

- Public Hospitals: 42
- Private Hospitals: 13

NAKHON RATCHASIMA

- Public Hospitals: 35
- Private Hospitals: 8

KHON KAEN

- Public Hospitals: 32
- Private Hospitals: 3

UBON RATCHATHANI

- Public Hospitals: 27
- Private Hospitals: 3

SURAT THANI

- Public Hospitals: 25
- Private Hospitals: 7

SONGKHLA

- Public Hospitals: 24
- Private Hospitals: 5

CHONBURI

- Public Hospitals: 20
- Private Hospitals: 11

Source: Ministry of Public Health
THAILAND HEALTHCARE INDUSTRY OVERVIEW
PUBLIC HOSPITALS

The main investment objective of the government is to provide nationwide healthcare service coverage. Hospitals are divided according to the level of the sophistication of services. Patients with severe cases will be referred to the nearest and better-equipped facilities.

REGIONAL HOSPITAL
- Bed: > 500
- 26 regional hospitals, serving healthcare in 4 regions
- Tertiary Care

GENERAL HOSPITAL
- Bed: 120 - 500
- 71 general hospitals nationwide
- Secondary Care

COMMUNITY HOSPITAL
- Bed: 10 - 120
- 723 community hospitals nationwide
- Secondary Care
- Primary Care

PUBLIC HEALTHCARE CENTER
- Bed: 0
- Primary Care

Note: Shows patient referral route
PRIVATE HOSPITALS

Currently, there are 321 private hospitals nationwide. Similar to other businesses, private hospitals aim to maximize their resources to generate income. Providing services for treatments and maintaining health have become key selling points of private hospitals.

LISTED-CHAIN HOSPITAL

There are 8 hospitals listed in the Stock Exchange of Thailand:

- Aikchol Hospital (AHC)
- Bangkok Dusit Medical Services (BGH)
- Krungdhon Hospital (KDH)
- Lanna Hospital (LNH)
- Mahachai Hospital (M-CHAI)
- Ramkhanhaeng Hospital (RAM)
- Samitivej Hospital (SVH)
- Vibhavadi Hospital (VIBHA)

PROVINCIAL PRIVATE HOSPITAL

As of 2014, provincial private hospitals are generally medium-to-small size hospitals, facilitating needs for faster and more comfortable services compared to public hospitals.
Public hospital system is the backbone of healthcare system in Thailand for the majority of Thai people. Public hospital system can be classified into 2 main categories according to their respective authority:

- **MINISTRY OF PUBLIC HEALTH**
  Supervising most public hospitals in Thailand. They can also be classified into 2 main subcategories according to their jurisdiction:
  - **CENTRAL JURISDICTION**
    A number of public hospitals or medical institutions are under central jurisdiction. Most of them are public hospitals in Bangkok or special medical institutions devoting to certain types of diseases such as National Cancer Institute.
  - **PROVINCIAL JURISDICTION**
    Governing the largest number of hospitals in Thailand. Nearly all public hospitals in Thailand outside Bangkok are under this category.

- **MINISTRY OF EDUCATION**
  Governing most medical schools which have Super Tertiary Care capacities.

Apart from public hospitals, the government is also responsible for funding most of specialized medical research institutions in Thailand.
Medical schools in Thailand have the most advanced medical capacities (Super Tertiary Care) as they are fully equipped with skilled medical experts or workers and medical equipment/devices.

As of 2013, they are considered the best in public health system and yet affordable among Thais. Currently, there are 13 medical schools in Thailand:

<table>
<thead>
<tr>
<th>HOSPITALS</th>
<th>UNIVERSITIES</th>
<th>LOCATION</th>
<th>HOSPITAL BEDS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maharaj Nakorn Chiang Mai Hospital</td>
<td>Chaing Mai University</td>
<td>Chaing Mai</td>
<td>1,375</td>
</tr>
<tr>
<td>Siriraj Hospital</td>
<td>Mahidol University</td>
<td>Bangkok</td>
<td>2,221</td>
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<tr>
<td>King Chulalongkorn Memorial Hospital</td>
<td>Thai Red Cross Society</td>
<td>Bangkok</td>
<td>1,439</td>
</tr>
<tr>
<td>Phramongkutklao Hospital</td>
<td>Royal Thai Army</td>
<td>Bangkok</td>
<td>1,236</td>
</tr>
<tr>
<td>Ramathibodi Hospital</td>
<td>Mahidol University</td>
<td>Bangkok</td>
<td>1,378</td>
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<tr>
<td>Vajira Hospital</td>
<td>Navamindradhiraj University</td>
<td>Bangkok</td>
<td>875</td>
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<tr>
<td>Srinagarind Hospital</td>
<td>Khon Kaen University</td>
<td>Khon Kaen</td>
<td>991</td>
</tr>
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<td>Songklanagarind Hospital</td>
<td>Prince of Songkla University</td>
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<td>HRH Princess Maha Chakri Sirindhorn Medical Center</td>
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<td>Panyananthaphikkhu Chonprathan Medical Center</td>
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<td>Nonthaburi</td>
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<tr>
<td>Mae Fah Luang University Hospital</td>
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<td>Chiang Rai</td>
<td>107</td>
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<tr>
<td>Naresuan University Hospital</td>
<td>Naresuan University</td>
<td>Nakhon Sawan</td>
<td>400</td>
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</table>

Source: Solidiance interviews and medical institutes’ online websites
National Cancer Institute, Central Chest Institute of Thailand, Queen Sirikit National Institute of Child Health, Institute of Dermatology, and Neurological Institute are some examples of specialized hospitals or institutions in Thailand.

Specialized hospitals / institutions are established to develop academic knowledge, to provide advanced medical treatments for their respective diseases. Hence, these specialized hospitals / institutions are better-equipped with relatively advanced medical devices and personnel for their respective disease. It is also a part of their scope of work to keep up with advancements in their respective fields.
Recent trend of leading medical schools participation in private hospital businesses has been a controversial issue.

Critics view this trend as switching government resources to serve the needs of few.

<table>
<thead>
<tr>
<th>MEDICAL SCHOOL</th>
<th>PRIVATE HOSPITAL BUSINESS</th>
<th>BUDGET</th>
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</thead>
<tbody>
<tr>
<td>Faculty of Medicine, Siriraj Hospital, Mahidol University</td>
<td>Siriraj Piyamaharajkarun Hospital</td>
<td>THB 7 billion (USD 233mn) (Opened 26 April 2013)</td>
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<tr>
<td>Faculty of Medicine, Khon Kaen University</td>
<td>Srinagarind Hospital</td>
<td>THB 2.4 billion (USD 80mn) (to be opened soon)</td>
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<tr>
<td>Faculty of Medicine, Chiang Mai University</td>
<td>Maharaj Nakorn Chiang Mai Hospital (Suandok Hospital)</td>
<td>Under construction</td>
</tr>
<tr>
<td>Faculty of Medicine, Prince of Songkla University</td>
<td>Songklanagarind Hospital</td>
<td>Under construction</td>
</tr>
<tr>
<td>Faculty of Medicine, Ramathibodi Hospital, Mahidol University</td>
<td>Ramathibodi Hospital</td>
<td>Under construction</td>
</tr>
</tbody>
</table>

**THESE MEDICAL SCHOOLS’ MOVEMENTS HAVE BEEN AIMED FOR:**

- Preventing highly trained medical staffs from serving 100% in public sectors by offering them an opportunity to make money within the private business units of its medical school
- Developing superior medical expertise with better facilities
- Coping with the insufficient subsidy received from government healthcare scheme

*Source: Thailand Information Center for Civil Rights And Investigative Journalism*
Urbanization in Thailand’s Tier 2 Cities is expected to surge as one of the impacts of AEC in line with the investment in transportation infrastructure. As in evidence from the past decade, “Ribbon development” is the main urban development in Thailand. Most of urban areas happened along with the transportation infrastructure.

The urbanization in Tier 2 Cities has resulted in population with higher purchasing power, leading to demand for better healthcare. These recent trends have led to aggressive expansion of private hospitals in Tier 2 and border cities. Large private hospitals (mostly based in Bangkok) are expanding to capture the health care demands in Tier 2 Cities which are growing at a fast pace.

Source: Health Focus, Thailand
PRIVATE HOSPITALS IN THAILAND ARE TARGETING TIER 2 CITIES BECAUSE OF THE EXPECTED GROWING DEMAND FOR HEALTHCARE SERVICES FROM THE ASEAN ECONOMIC COMMUNITY (AEC) AND URBANIZATION.

- Chiang Mai Ram Hospital
- Khon Kaen Ram Hospital
- Lanna Hospital
- Udon Thani Hospital
- Ubon Ratchathani Hospital
- World Medical Center Pattaya
- Kasemrad Sriburin Hospital
- Bangkok Hospital Chiangmai
- Sri-Rayong Hospital
- Dibuk Hospital (Phuket)
- Bangkok Hospital Khon Kaen
- Samitivej Chonburi Hospital
- Jomtien Hospital (Pattaya)

Source: Hospitals’ investor relation document, Q3 2013
THAILAND PRIVATE HOSPITALS’ ARE APPROACHING TO TIER 2 CITIES – TO SERVE NOT ONLY THE NEEDS IN TIER 2 CITIES BUT ALSO THOSE OF NEIGHBORING COUNTRIES.

1. BANGKOK DUSIT MEDICAL SERVICES (“BGH”)

BGH, the owner of Bangkok group hospital, currently operates 29 hospitals located in Bangkok and other provinces. Bangkok remains BGH’s main revenue source, accounting for 66% of its total revenue. However, revenue from other provinces is growing at much faster rate.

In 2012, BGH’s revenue from Bangkok’s operation grew by 14% while the revenue from operations outside Bangkok grew by 17-18%. BGH believes there is plenty of room for expansion, considering the number of hospital beds per population (300 population per hospital beds in Bangkok, 500 – 600 population per hospital beds in Bangkok).

INVESTMENT PLAN

• It aims to increase its hospitals to 50 hospitals in 2015 from 21 in line with AEC
• BGH also planned to open Sunthornpoo Hospital in Khonkaen in 2013

Source: Health Focus, Thailand
Ramkhamhaeng Hospital Chain comprises 25 hospitals with 6 hospitals are in Bangkok. Remaining 19 hospitals are in other provinces. 9 hospitals are located in the North, 3 in the Northeast, 1 in the West, and 6 in the Middle.

Ramkhamhaeng Hospital Chain’s growth will be coming from the renovation of existing hospitals and expansion of new branches through business partnership. Expansion will focus in the North and Northeast where Ramkhamhaeng is more familiar, while there is no expansion plan in South and the East.

Ramkhamhaeng Hospital Chain currently controls 85% market share of private hospital in the north. It aims to expand in the Northeast, targeting high potential provinces without big hospitals such as Udonthani and Ubonratchathana.

**INVESTMENT PLAN**

- The chain plans to spend THB 0.6 billion (USD 20mn) to improve 3 of its existing operations in provinces:
  - THB 50 million (USD 1.6mn) for Chiangmairam Hospital to revamp servicing area to attract young customers and foreigners
  - THB 400 million (USD 13mn) for Lanna Hospital to add 100 hospital beds
  - THB100 million (USD 3.3mn) for Khonkaenram Hospital to purchase medical equipment for specific practices

*Source: Health Focus, Thailand*
Bangkok Chain Hospital is the owner of Kasemrad Hospital. Bangkok Chain Hospital has operations in 3 provinces outside Bangkok: Nonthaburi, Saraburi and Chaingrai.

While they continue to look for expansion opportunities, they spent their 2013 budget of THB 3.1 billion (USD 103mn) budget primarily on existing operations: It plans to allocate THB 0.72 billion (USD 24mn) for Kasemrad Sriburin Hospital and Sriburin Clinic both in Chaingrai. The fund will be used by the two hospitals to meet the demand from patients in both domestic and neighboring countries such as Myanmar and Laos.

THB 1.5 billion (USD 50mn) is also allocated for construction of a new hospital which will be named ‘World Medical Center Pattaya’ following the success of the first one in Chaengwattana. These two are fully dedicated to serve foreigners.

Source: Health Focus, Thailand
TOP DISEASES IN THAILAND TIER 2 CITIES
Cancer is an increasing health problem in Thailand (no.1 cause of death). Colorectal, liver, lung, breast and cervical cancers are the most common in the country. They account for approximately 50% of all cancer cases. Many studies have shown that colorectal and breast cancers will become increasingly important in the coming years.


Cancer is an increasing health problem in Thailand (no.1 cause of death). Colorectal, liver, lung, breast and cervical cancers are the most common in the country. They account for approximately 50% of all cancer cases. Many studies have shown that colorectal and breast cancers will become increasingly important in the coming years.

HEART DISEASES

WHO Forecasts that heart diseases will be ranked first on the morbidity table in the global scale and third in the local/Thailand scale by 2030.

INCIDENCE OF HEART DISEASES VS. POPULATION SIZE (IN THOUSANDS), 2012

Thailand Ministry of Public Health’s report shows that the number of people suffering from acute ischemic heart disease increases by 21,700 people annually or two per hour.

HYPERTENSION AND CEREBROVASCULAR DISEASES

Rising number of patients suffering from hypertension and cerebrovascular diseases in some Thailand Tier 2 Cities.

HISTORICAL NUMBER OF HYPERTENSIVE DISEASES INCIDENCE IN TIER 2 CITIES (IN THOUSANDS) 2008-2012

HYPERTENSION VS. AGING POPULATION:

Hypertension is the most common (14-27%) among the top chronic diseases in the elderly.

In addition, Thailand has entered the aging society since 2004 and is aging faster than the average Southeast Asian countries. According to the Ministry of Public Health, 72-80% of the older population suffers from chronic diseases and hypertension is the biggest group (14-27%) among the top chronic diseases in the elderly.

Source: Institute for Population and Social Research, Mahidol University, Bureau of Non-Communicable Disease
## TOTAL PERCENTAGE OF OLDER POPULATION IN THAILAND

<table>
<thead>
<tr>
<th>REGION</th>
<th>2005</th>
<th>2015</th>
<th>2025</th>
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<tr>
<td>BANGKOK</td>
<td>8.6%</td>
<td>11.9%</td>
<td>18.6%</td>
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<tr>
<td>CENTRAL EXCL. BANGKOK</td>
<td>10.8%</td>
<td>13.1%</td>
<td>17.9%</td>
</tr>
<tr>
<td>NORTH</td>
<td>12.1%</td>
<td>16.0%</td>
<td>23.9%</td>
</tr>
<tr>
<td>NORTHEAST</td>
<td>9.6%</td>
<td>14.7%</td>
<td>21.4%</td>
</tr>
<tr>
<td>SOUTH</td>
<td>10.4%</td>
<td>13.2%</td>
<td>17.8%</td>
</tr>
</tbody>
</table>

Source: Institute for Population and Social Research, Mahidol University, Bureau of Non-Communicable Disease
PNEUMONIA AND OTHER LUNG DISEASES

In 2012 nearly 200,000 people were diagnosed with pneumonia diseases, 1,200 of whom died.

HISTORICAL NUMBER OF IN-PATIENTS FROM PNEUMONIA AND OTHER LUNG DISEASES IN THAILAND TIER 2 CITIES
2007 - 2011

Source: National Statistics Office, National News Bureau of Thailand
“The Public Health Ministry is warning the people of catching pneumonia during the prevailing cold weather while revealing over 1,000 people died of the disease last year. Dr. Narong Sahametapatsakorn, Permanent Secretary for Public Health, is warning the Thai people to watch out for respiratory diseases, especially flu and pneumonia, which are caused by viruses that are very productive in cold weather.”

National News Bureau of Thailand
January 22, 2013
Liver and pancreatic diseases include Hepatitis A, B, C, D and E; liver abnormality due to excessive consumption of alcoholic drinks, drugs and herbs; infections on the liver, fatty liver disease and pancreatitis. Besides liver cancer, alcoholic liver diseases and viral hepatitis are among the top 20 cases of inpatients (~10,000 cases in 2010) in Thailand.

Source: National Statistics Office
KEY CHALLENGES IN HEALTHCARE INDUSTRY IN THAILAND TIER 2 CITIES
THAILAND IS FACING SHORTAGE AND IMBALANCE IN THE NUMBER OF MEDICAL SPECIALISTS, BOTH IN THE CAPITAL AND TIER 2 CITIES.

THE SHORTAGE OF SPECIALISTS IS THE MAIN CHALLENGE FOR HEALTHCARE SERVICES IN TIER 2 CITIES.

The shortage affects directly the demand for sophisticated medical devices as there are insufficient resources to operate them. In 2011, Thailand has 42,890 physicians with 59% or 25,185 of them are specialists.

NUMBER OF PHYSICIANS IN THAILAND BY SPECIALTIES, 2011

Source: Thailand Information Center for Civil Rights And Investigative Journalism
Physicians, surgeons, and anesthetists are on the list of top three specialists that will be in shortage for now and within the next the 6 years. Considering population structure and medical school attendants, shortage in the number of physicians will surge due to aging population. Universal health care scheme, expansion of private hospitals, rising number of chronic disease patients along with rising expectations to receive treatments from specialists are all aggravating the specialist shortage situations.
CURRENT MEDICAL SPECIALIST SHORTAGE

- Physicians: 3,000
- Surgeons: 1,800
- Anesthetists: 1,600
- Pediatrics: 750
- Orthopaedic: 700
- Obstetricians and Gynaecologists: 650
- Neurosurgery: 403
- Otolaryngologists: 350
- Ophthalmologists: 200

FUTURE MEDICAL SPECIALIST SHORTAGE, 2019

- Physicians: 4,044
- Surgeons: 1,855
- Anesthetists: 1,348
- Neurosurgery: 340

Source: Thailand Information Center for Civil Rights And Investigative Journalism
Currently, any patients in Thailand can access medical specialists without having prior consultation by general practitioners or family physicians – this has led to inefficiency, redundancy, as well as unnecessary diagnostic and treatments.

To increase the efficiency and effectiveness of medical specialists role, the country needs 5,600 family physicians. Family physician’s role is to provide primary and secondary care while reducing burden or tertiary care providers by preventing patients from unnecessary access to tertiary care.
SHORT-TERM DEMANDS IN HEALTHCARE INDUSTRY ARE EXPECTED TO BE AFFECTED BY PROLONGED POLITICAL TURMOIL IN THAILAND.

TIMELINE ON THAILAND’S POLITICAL CRISIS, 2013 - 2014

NOVEMBER 2013
• Protests broke out after the government proposed an amnesty bill that allowed Thaksin Shinawatra to return home without facing jail time.
• Protesters occupied several ministries and attacked a bus that carried government supporters. Several people were killed and wounded in street violence.

DECEMBER 2013
• Government announced a general election which was then boycotted by opposition.
• Protesters staged massive anti-government rallies in Bangkok. A gunman killed protestors and wounded others, escalating political tension.

JANUARY - APRIL 2014
• Protestors occupied major streets in Bangkok in an attempt to “Shut Down” Bangkok.
• Constitutional court annulled general election and removed Ms. Yingluck from being a Prime Minister.
• State of emergency was declared in Bangkok.

MAY - AUGUST 2014
• Military leader, Gen Prayuth Chan-ocha declared Martial law, then seized power in coup.
• The king of Thailand officially endorsed the coup leader as prime minister in August.
Growth of GDP is expected to decrease in short-term.
Investors withdrew and paused their direct/indirect investment in Thailand.
Demands for tourism industry, account for approx. 10% of Thai GDP, declined in short-term.

DOMESTIC SEGMENT

Foreign investments in Thai healthcare industry are paused and withdrew: foreign investors considered moving their investments to other attractive medical tourism markets such as India, Singapore and Philippines.

Domestic patients decreased their spending on healthcare by having medical services in less expensive hospitals or choosing substitute medical treatments that are comparatively at lower costs due to decreasing purchasing power from low economic activities. However, healthcare policies have not been changed since the military coup has seized the power.

MEDICAL TOURISM SEGMENT

Medical tourism demands decreased due to political instabilities: Medical tourists shifted their treatments to other medical tourism countries but some still chose to have their medical treatments in Thailand. However, instead of Bangkok, these international patients choose hospitals in other cities/provinces that have not had any political movement.

Source: Thailand Information Center for Civil Rights And Investigative Journalism
FUTURE OPPORTUNITIES IN THAILAND TIER 2 CITIES
SUMMARY OF THAILAND’S HEALTHCARE INDUSTRY TRENDS AND IMPLICATIONS

KEY TREND 1:

Thailand will become an aged society by 2022 as the number of senior citizen is expected to account for 19% of the total population.

IMPLICATION:

- Demand for healthcare services is expected to grow as aging population will increase the demand for both medical treatment and care.
- Treatment and care for chronic diseases will be among the primary focus for maintaining elder citizens.
- Aging population boom puts pressure for the government to plan for facilitating the change by improving medical facilities and personnel in public hospitals.

KEY TREND 2:

Urbanization in Tier 2 cities boosts the purchasing power of local people. Urban population earns 71.9% more than those in rural area.

**71.9% Gap**

\[
\begin{align*}
&16,409 \\ &9,546 \\
\end{align*}
\]

\text{THB} \quad \text{THB}

\text{Urban} \quad \text{Non-Urban}

**IMPLICATION:**

- Urbanization outside Bangkok is one of the key drivers for private hospitals investment.
- Higher purchasing power allows consumers to request better and faster healthcare services.
- People are more willing to pay extra for similar healthcare services in private hospitals as services come faster and with better-standard.

KEY TREND 3:
Medical tourism in Thailand grew by 17.5% CAGR from 2007-2011. In addition, Thai government is promoting Thailand as a hub for medical.

IMPLICATION
Medical tourism is one of the main drivers for private hospital investment in the future. In 2012, the number of foreigners seeking medical treatment in Thailand reached 2.53 million and brought THB 121.6 billion (USD 4 billion) to the country.

KEY TREND 4:
AEC is expected to encourage “Ribbon Development” of urbanization in Tier 2 cities and border provinces, as it happened in Bangkok and vicinities over the past decade.

IMPLICATION
- AEC is expected to accelerate the urbanization in Thailand Tier 2 cities and border provinces, resulting in higher number of patients who could afford premium medical care.
- However, better connectivity with neighbor countries could lead to influx of labors. This puts stress to the government’s plans of transmitted disease control.
- Scarcity of medical personnel, especially specialist, outside Bangkok will be more critical in border provinces.

HOSPITAL SEGMENT

PUBLIC HOSPITALS

MEDICAL SCHOOL

SPECIAL REGIONAL AND GENERAL HOSPITAL

OTHER PUBLIC HOSPITAL

PRIVATE HOSPITALS

LISTED-CHAIN PRIVATE HOSPITAL

PROVINCIAL PRIVATE HOSPITAL

GENERAL PROFILE

• Both medical schools and specialized medical research institutions.
• Equipped with leading personnel and advanced medical devices for super tertiary care.

• Serving government’s policy in healthcare service coverage both as treatment provider and training facility for medical student.
• Equipped with medium-quality medical devices.

• Providing mostly general secondary care to the public.
• Generally, there are very limited number of specialists.

• Large private hospitals, mostly have headquarter in Bangkok and vicinities.
• Centralized purchasing decision, generally focus on one brand.

• Medium and small scale hospitals; operating independently without branches. Some hospitals have less equipment compared to regional hospitals.
• Some hospitals are less equipped than regional hospitals.

OPPORTUNITY FOR MEDICAL TREATMENT

• A starting point for medical students to do training and research; pivotal influence in choices of medical devices.
• Requires medical device and procedures with advanced technology to be used for education and treatment purpose.
• Purchasing equipment through tender process, allowing medical school to get more choices of brand.

• Holding tender to purchase medical equipment, allowing to buy multi-brands.
• More special regional and general hospitals can meet the demand of producing local doctors outside Bangkok.
• More advanced medical equipment is expected for training tools.

• Tender purchasing process, enable multi-brand purchasing.
• Telemedicine is expected to play an important part in lesson the stress of specialist shortage outside Bangkok.

• JCI standard is expected to drive investment in facilities and medical devices in order to stay on top of the competition and also to become destination for medical tourism.
• M&A of provincial private hospital is expected to drive investment in facilities, equipment and personnel to maintain standard.

• Minimal opportunity, due to shortage of specialists and low demand for investment.
KEY TAKEAWAYS

• Thailand is among the top AEC countries in healthcare infrastructure.

• Widening gaps of affordability for upper-middle to premium healthcare services in tier 2 cities due to urbanization boom over the past decade.

• Medical tourism is expected to continue growing in major touristic locations across the country, away from disturbance in the capital.

• Aging population raises incidence of chronic non-communicable diseases across the country.

• Private healthcare players are focusing on Tier 2 Cities that are bordering with the neighboring countries to serve wider markets in response to approaching AEC trade.

THAILAND HEALTHCARE VIDEO PODCAST
MICKAEL FEIGE
ASSOCIATE PARTNER

Mickael Feige is an Associate Partner based in Thailand. Mickael has more than 10 years of professional experience. He manages large projects for Fortune 500 in various sectors such as automotive, chemicals, construction, energy, heavy industries and healthcare. His expertise lies mostly in market entry, growth strategy, industry and competitive benchmarking, and commercial problems diagnostics. Mickael speaks French and conversational Japanese. He holds a Masters Degree from a joint program between Lyon Political Science Institute and Senshu University. He holds an MBA from INSEAD.

WANWADEE TIAVONGSUVAN
CONSULTANT

Wanwadee is a Consultant in Solidiance’s Thailand office. She has more than 5 years of experience in industry research and consulting. Wanwadee’s expertise revolves around applying industry information and data to project execution for leading MNCs. Her previous projects are such as market entry strategy, potential partner matching, initiatives involving scenario modeling and data modeling. Before joining Solidiance, Wanwadee worked with the ICT global research and consulting companies. Wanwadee holds a MSc (with Merit) in Marketing Management from University of Surrey, United Kingdom and a BA in Economics from Thammasat University, majoring Industrial Economics.
WHAT WE DO
Soldiance is a corporate strategy consulting firm with focus on Asia Pacific. We advise CEOs on make-or-break deals, define new business models and accelerate Asia growth. Through our 10 offices across Asia, we provide our clients with a better understanding of intrinsic regional issues. To learn more about how Solidiance has helped many Fortune 500 & Asian Conglomerates to succeed in Asia, please visit: http://www.solidiance.com/clients.

WHAT WE ARE FOCUSING ON
Our industry experience is centered on industrial applications, chemicals, downstream oil, lubricants and the automotive industry. Our Asian market entry and growth strategy services provide the required insights and the necessary roadmap to capture a profitable market share in the region.

ADDITIONAL DETAILS
Solidiance has offices in China, India, Indonesia, Malaysia, Myanmar, Philippines, Singapore, Thailand, UAE and Vietnam. We are fast expanding and always on the lookout for exceptional people.
<table>
<thead>
<tr>
<th>Country</th>
<th>Address</th>
<th>Phone</th>
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<tbody>
<tr>
<td>CHINA</td>
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</tbody>
</table>

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