

FOCUS

Thailand's Performing Dental Market

Author: Silvia Borriello
silvia.borriello@infodent.com



Government's policies to promote Thailand as medical hub of Asia, capable of providing world-class healthcare, are set to turn its dental market into one of the most attractive sectors.

With its 69.6 million people, just behind Indonesia, the Philippines and Vietnam, Thailand has the 4th largest population amongst South East Asian nations. Considered to be a middle-aged society, the highest proportion of the Thai population is made up of adults and senior adults, with each accounting for about 22% of the total population. People older than 60 account for about 17.14% while only about 37.9% are below 30 years old. Due to the rapid growth in its aging population, demand for quality dental services in Thailand is projected to increase, requesting, this group of the population, more complicated dental services.

Public dental services, through the three national health insurance schemes, are available in all levels of public healthcare facilities, including health centers, community hospitals, provincial hospitals, and regional hospitals. Dentists and

Considered to be a middle-aged society, the highest proportion of the Thai population is made up of adults and senior adults, with each accounting for about 22% of the total population.

dental nurses provide dental treatment and prevention services at hospital level; in health centers primary dental care is mainly provided by dental nurses. **However, half of all Thai dentists work in private dental clinics and private hospitals. Thus, the private sector plays an important role in providing services, especially in Bangkok and municipality areas.**

The Thai Dental Council is the main actor for quality control of dental services through accredited curricula of dental schools and national licensing mechanism. Academic-based hospitals such as Chulalongkorn's Faculty of Dentistry and Mahidol University's Faculty of Dentistry are the most specialized in dental services.

Approximately 10% of the Thai population re-

DENTAL COVERAGE WITHIN THE THREE NATIONAL INSURANCE SCHEMES

1. Universal Coverage Scheme (UCS)

Thai citizens under the Universal Coverage Scheme (those not covered by SHI or CSMBs) are eligible to have free preventive and curative dental services covering the following:

- Dental Treatment:
 - Filling
 - Extraction
 - Scaling
 - Plastic Prosthesis
 - Baby Tooth Treatment-
 - Nasoalveolar Molding for Child who has Cleft Lip and Cleft Palate
- Oral Health Protection and Support:
 - Oral Health Check Up
 - Dental Consultation
 - Supplemental fluoride for person who is at risk of tooth decay
 - Dental Sealant

2. Social Health Insurance Scheme (SHI)

Under the SHI, Thai Citizens (private sector employees) have the right for dental services covered under following criteria: In the case of tooth filling, extraction, and scaling, approx. Baht 250 will be covered per one time of service.

The cost must not exceed Baht 500 per year.

In case of acrylic dentures;

-1-5 teeth; Baht 1,200 to cover the cost within five years from installing dentures

-More than five teeth; Baht 1,400 to cover the cost within five years from installing dentures

3. Civil Servant Medical Benefit Scheme (CSMBs)

Public servants and government officers have the right to withdraw funds to cover dental services for standard treatments such as tooth extraction, filling, and scaling (no limitations specified). Orthodontics care is also included but only in case of an accident.

Source: www.unidi.it/images/documenti/Final_Report_Dental_Thailand_gen_2019.pdf / The Kingdom of Thailand, Health System Review (Health System in Transition, Vol. 5 No. 5 2015).

ceives public dental services. However, utilization is increasing, especially as The Ministry of Public Health (MoPH) is addressing policies to increase awareness, as well as the number of dental care personnel, especially dental nurses, at Primary Healthcare (PHC) level or in health centers. Long waiting lists are also an issue in public dental care. **Private clinics and community hospitals are major providers of dental services, accounting for 31% and 34% of total dental visits respectively, while only around 11% are provided in PHC unit or health center. Extraction, descaling/periodontitis treatment, and filling are major services of those dental care services.**

The Bureau of Dental Health, Department of Health is the key institute responsible for technical support and monitoring of the dental prevention program. Funding for dental services from the Universal Coverage Scheme (UCS) is bundled with the capitation outpatient budget to contracted hospitals. **The National Health Security Office (NHSO) sets the dental fund to support comprehensive dental care, aiming to increase accessibility to services and to control oral health disease focusing on schoolchildren, pregnant women, dental prosthetics in older people, and improved oral health behavior in the population.** Inequity of access to dental care both among insurance schemes and income groups is still challenging. Un-

like UCS, beneficiaries in CSMBs and SHI are reimbursed on a fee-for-service basis. These differences have resulted in inequity of dental care accessibility among the three main health insurance schemes.

The high-income groups who live in urban areas with concentration of dental care facilities and dental health personnel tend to have more accessibility than lower-income groups. More efforts are still needed to supply rural areas with dental care as there is disproportionate access to dental services between rural and urban populations as well as maldistribution of dentists among regions.

Between 1971 and 1995, the proportion of dentists in the public sector declined, while they increased in the private sector, mostly in urban centers. Dentist density in the poorest Northeastern region has improved consistently as a result of the three-year mandatory rural

service by all healthcare professional graduates, including dental doctors; despite this improvement, however, density in Northeastern region remains the lowest across regions. Expansion of the workforce has been a key feature of government policy as there is general shortage in the number of oral health personnel in Thai government service, with a report in 2015 revealing that there were 13,215 dentists in Thailand, composed of 5,140 dentists working in the MoPH, 1,553 in other government services, and 6,522 in the private sector. The proportion of dentists to the population in each part of Thailand was 1:1,005 in Bangkok, 1:6,445 in the central region, 1:6,668 in the north region, 1:7,181 in the south region, and 1:10,745 in the northeast region, whereas the proportion of dentists to the population nationwide was 1:4,913 (compared with an average of 1:2,000 in most developed countries), which demonstrated an important public health problem in the distribution of dentists, especially in rural areas.

	2010	2019
Number of dentists	11,847	16,547
Number of Dental Prosthetic Technicians		5,375
Dental Assistants and Therapists		6,981

Note: number are approximate. Each source, even if reliable, has slightly different numbers
Main source: World Health Organization (WHO) https://apps.who.int/gho/data/node.main.HWF2/world_data Atlas

Thus, the MoPH has implemented several policies over the past few decades to increase the distribution of dentists in rural areas, such as recruiting students from rural areas and sending them back to their hometown after graduation or locating dental schools outside major cities for rural students. A policy to increase the production and distribution of graduated dentists to rural areas was introduced in 2005, and all dental schools in Thailand carried out this project from 2005 by increasing the number of dental students in the following 10 years. According to the 2015 – 2030 National Education Council Plan, over the next decade, the population number per dentist will keep decreasing, with the rising number of new graduates in dentistry, in 2025, the Thai population per dentist is expected to be 3,395 people. In 2010, there were 5,375 dental technicians in Thailand. They increased from 3,693 in 2006, at an average annual rate of 10.86%. In 2010, dentists in Thailand were around 11,847, growing at an average annual rate of 16.02% since 1979. According to projections the number of dentists is predicted to rise by 11.26% in 2025 with 24,922 total dentists.

Recognizing the importance of dental auxiliaries, including dental nurses, who can provide a wide range of basic public dental health services, such as health promotion and prevention to the population, especially schoolchildren in remote areas, the MoPH has scaled up the education program. This has resulted also in an increase in the number of dental nurses working in health centers. In addition to dental schools in universities, Praboromarajchanok Institute for Health Workforce Development (MoPH) is also responsible for producing dental workers, especially dental nurses. **One study found that the dental health budget was allocated insufficiently for oral care delivery, there were inappropriate guidelines for supporting the primary care network, and rapidly increasing demand for dental services.** Preventive and promotional oral services have remained unchanged from the period prior to universal health care coverage. In the 1970s dentists were found to be in short

supply in Thailand. As a result, plans were implemented to increase the annual output of dental graduates by increasing first year enrollments in the existing training programs and by opening new dental schools. At present, there are ten universities in Thailand offering a total of 14 dentistry programs. A Bachelor of Dentistry program requires students to study for six years. Newly dental graduates must work with governmental hospitals for three years after graduation then, they can work full-time for private clinics and/or private hospitals. The number of new dental graduate on average is around 600-800 per year. Thailand has around 4,556 dental clinics (as of September 2017), of which about 35% located in Bangkok. Bangkok and the Central Region, together, account for more than 50% of total numbers of dental clinics in the country.

According to data from the Bureau of Sanatorium and Art of Healing, most dental clinics are concentrated in Bangkok and the major cities of each region. Bangkok has almost five times more dental clinic than Chonburi the province with the 2nd highest numbers of dental clinics. Most dental clinics in Thailand are individually owned by dentists while dental service centers are usually made up of more dentists with fixed operational hours, at least one x-ray machine as well as all necessary dental supplies and instruments. The largest groups of dental clinics are: Dental Corporation, LDC Dental, Bangkok Smile, and Dental Hospital (targeting mostly international patients). These companies are key players in the market with several branches for dental services, specialists available for dental treatment, and advanced dental equipment and material.

Oral Health Status - Data taken from the 7th Thailand National Oral Health Survey (TNOHS, 2013) indicate that socioeconomic inequality in oral health is still persistent. Data included 1,518 working age adults (35–44 years old age group) from different areas of residence. About four-fifths of the population in the survey had an average income at 0–15,000 baht

per month. Almost 40% of the population had completed secondary education with agriculture being the most popular occupation. There were more females than males, with about 80% of them being married. **More than 85% brushed their teeth twice a day and used fluoride toothpaste, while only 10.7 % used additional cleaning tools. Surprisingly, only 37.7 % went to the dentist in the past year. More than 70% went to a public provider indicating a high percentage of the population with universal coverage. For dental caries status, 35.2 % of the population presented one or more dental caries.** Education was the most significant factor among socioeconomic variables compared to income and occupation. Lower educated individuals showed a significantly higher risk for dental caries, although area of residence, oral health-related behavior and access to dental service are also related.

Based on a health survey conducted in 2014, about 55% of Thais aged 60 and above have fewer than 20 teeth, and of these, only about 28% have their teeth replaced with artificial ones. 7.2% of them are edentulous.

To improve inequity in access to oral care and to improve the oral health of the Thai older people, the Thai Government launched, back in 2005 the Royal Denture Project to provide free complete dentures or removable dentures to those in need, as well as further prevention programs. The project has resulted in approximately 405,300 older patients having been delivered with complete dentures during the 2005 – 2015 period and approximately 35,000 edentulous patients being treated every year. The project has also been added to all Thai health benefit schemes therefore it is one of the regular dental healthcare services in Thailand's health system.

The same National Oral Health Survey (2013) also shows differences over time in the prevalence and quantity of dental caries between urban and rural school children. **A significant reduction was observed in urban areas however very recent declines in rural children give reason for optimism.** More effort needs to be given to supply rural areas with dental care to have fair and equal access of all citizens to medical services.

Dental Market - Thus, the dental market has been growing steadily. According to a study made by the Italian Trade Agency (Bangkok office), the market value of Thailand dental equipment and oral care products was estimated at EUR 629 million for the

Between 1971 and 1995, the proportion of dentists in the public sector declined, while they increased in the private sector, mostly in urban centers.

Health professional	Schools	Study Duration (years)	Regulatory body	Degree
Dentist	10 Dental schools (9 public, 1 private)	6	Thai Dental Council	Bachelor: Doctor of Dental Surgery (DDS)
Nurse	75 nursing schools (65 public, 10 private)	4	Thailand Nursing and Midwifery Council	Bachelor: Registered Nurse (RN)

Source: The Kingdom of Thailand, Health System Review (Health System in Transition, Vol. 5 No. 5 2015).

Socioeconomic Inequality and Dental Caries Among Thai Working Age Population, 2013

Variables	n=1,518	%	Behaviors	n=1,518	%
Gender:			Frequency of tooth brushing		
- Male	726	47.8	- Less than 2 times/day	127	8.4
- Female	792	52.2	- At least 2 times/day	1,391	91.6
Marital status:			Use of fluoride toothpaste:		
- Previously married	83	5.5	- No	197	13.0
- Married	1,215	80.0	- Yes	1,317	87.0
- Single	220	14.5	Use additional cleaning tools:		
Area of residence:			- No	1,355	89.3
- Bangkok	134	8.8	- Yes	163	10.7
- Other urban	465	30.6	Smoking status:		
- Rural	919	60.5	- Smoker	422	27.8
Region of residence:			- Non-smoker	1,096	72.2
- Central	317	20.9	Access to dental service		
- North	257	16.9	Frequency of dental visit:		
- Northeast	554	36.5	- Less than once a year	945	62.3
- South	256	16.9	- At least once a year	573	37.7
- Bangkok	134	8.8	Place for dental service:		
Having diabetes mellitus:			- Public provider	443	76.0
- Yes	49	3.5	- Private provider	140	24.0
- No	1,370	96.5	Health insurance coverage:		
Occupation:			- CSMBS	206	13.8
- Business	191	12.6	- SHI	226	15.2
- Wage-earner/freelance	310	20.4	- UCS	1,058	71.0
- Agriculture	568	37.4	Oral health outcome		
- Housekeeper	90	5.9	Dental caries:		
- Others*	359	23.6	0	984	64.8
			≥1	534	35.2

Note: SHI=Social Health Insurance Scheme; CSMBS=Civil Servant Medical Benefits Scheme; UCS Universal Coverage Scheme
 *Others in occupational groups include employee/government worker, associates of network/clubs, elderly with income, studying and finding a job.

year 2017. About 72% of the overall estimated market is for the retail oral care products including toothpaste, mouthwashes, mouth fresheners, and dental floss. For dental equipment, including artificial teeth and plaster used in dental clinics and hospitals, the value is estimated to be about EUR 178 million, or 28.3% of the total estimated market.

Rising standard of living, growing urbanization and an expanding middle class are supporting the growth of dental clinics as well as increased expenditure on dental care services primarily for dental cosmetics and oral care products. Thailand's aging society, especially in a decade's time, will further increase oral health spending. The rising number of international tourists is the main growth drivers for expansion of premium medical clinics and dental clinics in Bangkok and critical spots for tourism such as Pattaya and Phuket. For dental clinics in rural areas, the rising number of dentistry graduates and the government initiative of "One District One Dentist" would be the primary growth driver of the expansion of the dental industry.

The importation of dental equipment is regulated by the Medical Device Control Division, Food and Drug Administration, Ministry of Public Health, Royal Thai Government. To import dental equipment into Thailand, the importer needs to apply for and receive an import authorization/registration permit from the Thai FDA before the actual shipment. The permit needs to be renewed every three years. The Thai FDA also requires manufacturers or their representative companies to register in person. The Thai FDA accepts medical devices that pass the following standards: USFDA (U.S. Food and Drug Administration - USA), CE Mark (European), PAB (Pharmaceutical Affairs Bureau - Japan), TGA (Therapeutic Goods Administration - Australia), and SPAC (State Bureau of Pharmaceutical Administration of China - China). Although most dental products are imported into Thailand, oral care products such as toothpaste or dental consumable products such as plaster is mainly supplied by companies with local manufacturing facilities. Europe, the USA, Japan, Korea, and China are the primary sources of imported dental equipment.

THE DENTAL ASSOCIATION OF THAILAND

71 Ladplaw 95 Wangthonglang Bangkok 10310,Thailand.
 Tel : 662-539-4748 Fax: 662-514-1100
 Line id: @thaident

E-mail: thaidentalnet@gmail.com
@ 2019 The Dental Association of Thailand
<https://www.thaidental.or.th/main/contact>

Among main Sources:

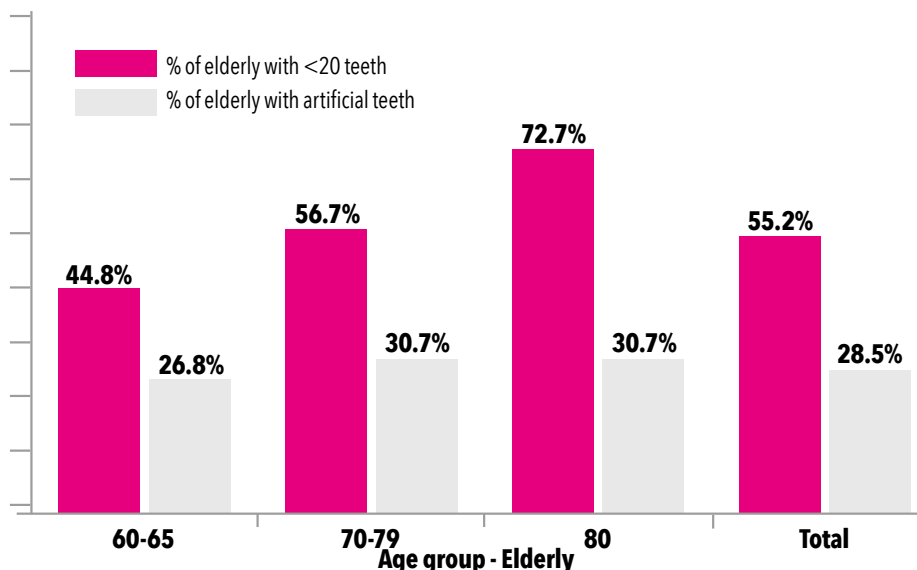
-Extracts from: The Kingdom of Thailand, Health System Review (Health System in Transition, Vol. 5 No. 5 2015).
 Asia World Health Organization 2015 (on behalf of the Asia Pacific Observatory on Health Systems and Policies).
 -Extracts from the Report Thailand ICE/Unidi "Thailand Market Survey on dental Equipment and Oral Care

Products* by ITA-Italian Trade Agency and UNIDI- Italian Dental Industries Association (Research realized by CANVASSCO)-http://www.unidi.it/images/documenti/Final_Report_Dental_Thailand_gen_2019.pdf
 This report is written under the responsibility of Canvassco (Thailand) Co., Ltd. and The Italian Trade Agency (ICE-ITA).

The research information, views expressed, and conclusions reached in this report do not necessarily correspond with those of the Thai government or any industry associations.
 -Journal of International Oral Health - Thanakanjanaphak-dee W, Laohasiriwong W, Puttanapong N. Spatial distribu-

tion of dentists in Thailand. J Int Oral Health [serial online] 2019 [cited 2020 Sep 27]; 11:340-6. Available from: <http://www.jioh.org/text.asp?2019/11/6/340/271775>
 -World Health Organization, <https://apps.who.int/gho/data/node.main.HWF2>
https://www.academia.edu/23547432/Supply_Projections_for_Dentists_Thailand_2000_2030_
 -Vivatbutsiri, P., lempook, T., Wonghinkong, S. et al. Dental school tracks related to the retention of dentists in Thai government service: a cross-sectional survey. Hum Resour Health 18, 5 (2020). <https://doi.org/10.1186/s12960-020-0444-7>
<https://human-resources-health.biomedcentral.com/articles/10.1186/s12960-020-0444-7>
 - Patcharawan Srisilapanan, Narumanas Korwanich, Sutha Jienmaneechotchai, Supraanee Dalodom, Nontalee Veerachai, Warangkana Vejvitee, Jeffrey Roseman, "Estimate of Impact on the Oral Health-Related Quality of Life of Older Thai People by the Provision of Dentures through the Royal Project", International Journal of Dentistry, vol. 2016, Article ID 1976013, 7 pages, 2016. <https://doi.org/10.1155/2016/1976013> -<https://www.hindawi.com/journals/ijid/2016/1976013/>
 -Bureau of Dental Health - http://dental2.anamai.moph.go.th/ewt_news.php?nid=1924&filename=index
 -Extracts from: Trends over Time in Dental Caries status in Urban and Rural Thai Children. Patcharawan Srisilapanan, 1 Areerat Nirunsittirat, and Jeffrey Roseman1 <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5694148/>

Percentage of Elderly With <20 Teeth and Those With Artificial



Source: Thailand National Health and Examination Survey 2014

Total number of children examined, dental caries prevalence and mean dmft/DMFT by age group and year of study.

Year	1999	2006	2012
3 years old			
Total number	14,485	2,016	2,376
Caries prevalence (%)	65.7	61.4	51.7
dmft	3.6	3.2	2.7
5-6 years old			
Total number	24,484	1,856	2,456
Caries prevalence (%)	87.4	80.60	78.5
dmft	5.97	5.43	4.4
12 years old			
Total number	35,623	2,000	2,312
Caries prevalence (%)	57.3	56.87	52.3
DMFT	1.64	1.55	0.7

Note: dmft = decay-missing-filled teeth
 Source: taken from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5694148/>