

# Chapter 3

## **Transforming the ASEAN Economic Community (AEC) into a Global Services Hub: Enhancing the Competitiveness of the Health Services Sector in Singapore**

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## CHAPTER 3

# **Transforming the ASEAN Economic Community (AEC) into a Global Services Hub: Enhancing the Competitiveness of the Health Services Sector in Singapore**

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### **1. Introduction**

Singapore was the first country in the region to officially articulate an aim to attract medical tourists and promote the export of health services overseas. In 2003, the Healthcare Services Working Group (HSWG) of the Economic Review Committee recommended that Singapore attract one million foreign patients by 2012. To achieve this goal, the Singapore Tourism Board (STB), along with the Economic Development Board (EDB) and International Enterprise (IE) Singapore, launched SingaporeMedicine in 2003, a multi-agency initiative that aims to promote, develop and maintain Singapore as an international medical hub. However, in recent years, the push for medical tourism has been muted.

Section one of this paper summarizes the Singapore context for a past medical tourism hub policy, followed by an overview of the health system, with policy implications for the system should medical tourism become a major growth area. Methodology is then described in section two, followed by the findings of the SWOT analysis conducted among stakeholders in the health services sector.

The objective of this paper is to:

1. Undertake a SWOT analysis for the health services sector in Singapore.
2. Undertake an analysis of policies/regulatory/institutional support for the health services sector in Singapore.
3. Develop a profiling of firms which are considered key players for the health services industry.
4. Provide recommendations drawn from the results of the SWOT analysis as well as from the results of the analysis of policies, regulatory and institutional support on how Singapore could enhance its positions to be part of the global service hub in the region.

### **1.1. Singapore context**

The biomedical industry is featured in the Singapore government's strategy as one of the pillars of the new economy, and going into the new millennium, it is targeted to be one of the major engines of growth. Singapore has always played a significant role as a financial centre, where there has been a traditional focus on the services sector, but it has recently positioned itself as the hub for medical services in the region. Singapore is pro-active in seeking out innovative investments by providing generous support to attract talent from all over and by paying world-class salaries and incentives. There is a strong political will to establish or restructure the major public agencies that are responsible for driving economic development, along with the integration of the manufacturing and biotechnology industries. This is also part of a broader strategy to promote Singapore as a global city, building upon its position as a regional business hub.

### **1.2. Biomedical Industry in Economic Development**

Four areas have been categorized under the biomedical sciences cluster by the Economic Development Board (EDB) of Singapore –namely pharmaceuticals, medical devices, biotechnology and healthcare services. Essentially, the economic development policy undertaken is related to strengthening the value chain of the entire healthcare industry. By developing Singapore into a regional hub for healthcare through aggressive marketing, the strategy is also to integrate the value chain forward into

medical services and backwards from production and manufacturing of medical technologies. In the recent past, the EDB has also launched a massive promotion to attract the big pharmas and managed to do so quite successfully. Many of the largest pharmaceutical companies have located large active product ingredient (API) plants in Singapore and invested hundreds of millions of dollars within the last five to ten years.

### **1.3. Pharmaceuticals**

From the small trickle in the 1970s, investments in the biomedical industry did not grow much until the 1990s when major investments began flowing in. Over the last ten years or so, biomedical development has really taken off. Many pharmaceutical companies have relocated their manufacturing plants to Singapore and are spinning off more start-ups to do clinical trials and basic R&D activities in the region. Pharmaceuticals contributed over \$8 billion or 82% of the total manufacturing output in Singapore in 2002, while generating employment growth of 31%. Pharmaceuticals have actually monopolized the new investments in the biomedical industry. There is considerable success in getting the big pharmas to integrate their production processes backwards by conducting more clinical trials along with the requisite supporting infrastructure. The intention is to promote basic R&D to be done locally so that medicines can be developed for the region to tackle endemic diseases, while tapping resources such as raw materials from the region. Recent targets for the industry are \$25 billion in manufacturing output, with total value-added of \$12.5 billion and employment of 15,000 workers by 2010 (Phua, 2007).

### **1.4. Research and Development**

The government has been very instrumental in putting up venture capital for investments in the biomedical industry. More than \$10 billion dollars have been raised over the last twenty years, along with the creation of many funds for joint ventures. In 2007 there was the launch of another \$7 billion for the following five years, after expending \$5 billion over the previous five years. Singapore has also been very successful in attracting the big names in biotechnology to invest locally. A huge

science park for biomedical R&D, the Biopolis, was developed with all the latest state-of-the-art technology and infrastructure.

Expenditure on R&D has correspondingly taken off in the past decade. As a percentage, this has gone up to about two per cent of the GNP, and the Singapore government's current policy is to push it up even higher. This is also reflected in the growing number of research and training institutes within the recent decade. Many of these, including the key ones, are all set up by the government with very strong links to industry, thus serving as models of public-private partnerships. In the universities, more attention is given to the life sciences and the focus is on endemic diseases and the relevant platform technologies, linking education and research with training. Besides dishing out a stream of training scholarships, the government has also sent many of the top scholars to all the major R&D centres throughout the world. Singapore has been attracting foreign talent from the region and elsewhere - including India, China and the West. Singapore has developed knowledge technologies in many areas of cutting-edge research. For example, there is a team that is doing world-class research work on stem cells technology at the National University of Singapore. Recently, even philanthropy and the private sector have been tapped to donate huge endowments for medical research and education at the NUS medical school, as well as the joint Duke-NUS Graduate Medical School. Development of the biomedical industry is rationally coordinated with education, training and research to ensure allocative efficiency and policy integration.

While the Singapore environment is kept conducive and open to promote innovative research, on the other hand, the authorities have also to ensure that important social, legal and ethical issues are also addressed. Thus there is a strong regulatory structure in place, which as part of good governance, is really the secret behind Singapore's success. Transparency and accountability are present with the necessary checks and balances, and the total system has to be seen to be well-regulated. Otherwise, potential investors would not come to Singapore to risk having their products being copied and their intellectual property stolen. So, this is one area in which the Singapore government really performs quite well, that is to protect intellectual property rights (IPR). The other factor in Singapore's favour is quality assurance and quality control, where high standards and processes are always

guaranteed to guard against inferior or defective products, and to prevent fraudulent and corrupt practices.

Thus Singapore's recent development of the biomedical industry exemplifies an interesting model of a strategic national policy of major investments into value-added medical and related services to leverage on its regional role as an entrepot and service centre. Riding on the new wave of interest that has been generated by the life sciences, many regional countries have aspired to modernize their agricultural sector with newer manufacturing and innovative services sectors like the pharmaceutical and healthcare industries, through a common biotechnology platform with medical tourism (Phua, 2007).

### **1.5. Singapore Medicine**

In healthcare services, there had been a concerted joint initiative by the government and the Singapore Tourism Board (STB) in a global marketing exercise to promote the "Singapore Medicine" brand name. This arose from the recommendations of the Economic Review Committee's Health Services Working Group in 2003. Based largely on economic projections, the aim is to attract one million foreign patients with 1,000 daily admissions by 2012; generating \$3 billion in health expenditure or \$2.6 billion value-added to the economy; creating 13,000 new jobs; and growing the market share from 1% to 3% of GNP. These ambitious targets for healthcare services have also spilled over to the biotechnology sphere, with the expected creation of new employment and value-added growth. The business imperative has thus driven the prospects of developing Singapore into a hub for medical tourism. However in retrospect, such projections are not based on realistic evidence, but have been generated merely as optimistic marketing targets.

Among the major health care corporations in Asia, a couple of Singapore-based companies are placed on top of the league tables in value creation. But they do not have higher turnover in terms of the number of patients reported as their competitors in neighbouring countries. For example, the top international hospital in Thailand (Bumrungrad) is reported to have serviced more foreign patients than the total number in Singapore. But Singapore is competing on the basis of quality and value-added

services, and not so much on the volume of basic health care. Thus it is a different business model, which is of course, related to the vision to develop Singapore into a global and not just a regional hub, providing a comprehensive range of world class and high-quality medical and related services.

## **1.6. Medical tourism policy**

It is important to note that the Ministry of Health has not explicitly promoted or endorsed a medical tourist hub policy. The policy has been driven mainly by the STB in the form of SingaporeMedicine since 2003. This is due to possible political sensitivities about promoting the health sector to foreign patients, which is also not in line with the MOH's mandate to provide affordable and accessible health services to local patients. This relates to what the authors label as a "disconnect" between trade and health institutions at the international, regional and national levels. Trade and tourism ministries are primarily concerned with increasing economic growth and facilitating international trade in the services sector. In contrast, a health ministry's aim is to improve overall population health and ensure equity in health service access and delivery (Pocock and Phua 2011). Whilst Singapore has one of the most integrated inter-agency stances on medical tourism amongst ASEAN countries, the low profile of the MOH is telling in revealing potential conflicting goals between trade and (public) health interests.

Under the ASEAN Framework Agreement on Services (AFAS), several commitments have been made in healthcare. In the seventh package of commitments, these have included:

- Medical services, specifically general medical services (cpc 93121)
- Specialized medical services (cpc 93122)
- Dental services (cpc 93123)
- Veterinary services (cpc 932/9320), deliveries and related services
- Nursing services, physiotherapists and para medical personnel (cpc 93191)
- Hospital services (cpc 9311/93110)
- Ambulance services (cpc 93192)
- Acute care hospitals, nursing homes and convalescent hospitals as defined by private hospitals and medical clinics act, run on a commercial basis (cpc 93193)

- Laboratories licensed under the private hospitals and medical clinics act (cpc 931991)

Compared to other ASEAN countries, Singapore has already made the most commitments in the health sector, reflecting the country's pro-liberalization of trade in other sectors. As noted by a key informant in the MOH, there is currently a shortage of healthcare facilities and personnel throughout the full range of healthcare services. The government's awareness of this problem is therefore seen in the policy to open up the sector to foreign players in this package of commitments.

### **1.7. Singapore's Health System and Policy Implications of Medical Tourism**

The government has encouraged the introduction of market mechanisms in the healthcare sector aimed at making providers more competitive, such as the corporatization of public hospitals since the 1980's and a near fully privatized primary health sector. With an ageing population, rising incidence of non-communicable or chronic disease and an increasingly educated middle class prompting higher demand, healthcare is set to be a major growth sector in Singapore and within the region, with or without foreign patient growth.

Corporatized public hospitals are autonomous and provide most secondary care in Singapore, at around 80.6% of total beds (Table 1). In addition, 30% of beds in public hospitals consist of highly subsidized beds. Not more than 10% of beds are Class A beds to be used for private patients, although it must be noted that the majority of demand for private care in public hospitals comes from Singaporeans, not foreigners. The MOH retains indirect control of autonomous hospitals by selecting board members and CEOs, ensuring that public hospitals fulfil their mission to provide affordable services to local patients. It should also be noted that public hospitals in Singapore are Joint Commission International (JCI) accredited. Given that these hospitals are publicly owned, revenues accruing to medical tourism are taxable and thus profits can be reinvested back into the public health system by the government (Pocock & Phua 2011).



**Table 1. Public versus private provision**

	Public (%)	Private (%)
Hospitals (2009)	63.6	36.4
Beds (2009)	80.6	19.4
Primary care clinics (2007)	1.5	98.5

Source: Pocock&Phua 2011

The government-organized health financing scheme offers universal coverage in theory via medical savings (Medisave), insurance (Medishield) and a means-tested fund for vulnerable groups who do not have access to either savings or insurance (Medifund). Total health spending is one of the lowest among developed countries in the world at below 4%, although this is set to grow with an ageing population. Out-of-pocket payments (OPPs) as a regressive financing mechanism, dominates private health spending. More OPPs for services leads to more competition in private healthcare markets, as providers are more likely to compete for patients based on price, especially given the price transparency made possible by the internet. Medical tourist payments are dominated by OPPs, but these payments are becoming more organized as part of insurance coverage. For example, as part of a policy to inject further competition since March 2010, Singapore's Medisave can also be used for elective hospitalizations and day surgeries in hospitals of two partner providers in neighbouring Malaysia (Pocock&Phua 2011).

**Table 2. Health Expenditure, 2008**

Total health expenditure as % of GDP	<b>3.4</b>
Government expenditure on health as % of total government expenditure	<b>8.2</b>
Government health expenditure as % of total health expenditure	<b>35</b>
Private expenditure as a % of total health expenditure	<b>65</b>
Out of pocket expenditure as a % of private health expenditure	<b>93.9</b>
Private prepaid plans as a % of private health expenditure	<b>2.8</b>

Source: Pocock&Phua 2011

Singapore's government has invested significant resources in training healthcare workers, even as the country experiences the highest out-migration of doctors to OECD

countries amongst the ASEAN countries (Bhargava *et al.* 2010). Public medical schools have been establishing partnerships with reputable universities overseas. The National University of Singapore (NUS) for example, opened a joint medical school with Duke University in 2005, and the Nanyang Technological University (NTU) plans to open a similar joint venture with Imperial College London in 2012. Importantly, such partnerships also signal quality of medical resources, crucial to the promotion of medical tourism (Turner 2007). Past Singaporean policies have previously rationalized that in order to recruit and retain specialists in a country with a small local population, the country must attract a high volume of medical tourists. But, within the country, prospective growth of medical tourism may exacerbate public to private sector brain drain, particularly of specialists who provide elective services demanded by foreign patients. Already half of all doctors in the city state work in the private sector (Table 3). However, Singapore has managed to maintain competitive public sector salaries, meaning that public to private brain drain has not been as pronounced as in other ASEAN countries. Going forward, the MOH and the Singapore Medical Association (SMA) will need to establish and promote salary and fee guidelines for doctors in both sectors to avoid denuding the public sector of doctors, particularly if foreign patient volumes increase.

**Table 3. Human Resources, Latest Year**

	Public (%)	Private (%)
Doctors (2009)	54.8	45.2
Doctors per 1000 population (2003)	1.5	
Nurses (2009)	68.5	31.5
Nurses per 1000 population (2003)	4.5	

Source: Pocock&Phua 2011

## 2. SWOT Methodology

The authors had already undertaken research detailing the potential impact of medical tourism on health systems in the region and barriers to trade, affording insight into strengths, weaknesses, threats and opportunities at the macro level (Pocock & Phua 2011). To contextualize this prior work, the authors sought more detailed micro-level

qualitative input from local small and medium enterprises (SMEs) and government officials on the strengths, weaknesses, opportunities and threats to the competitiveness of the health services sector in Singapore. A survey instrument for health services providers (HSPs) was constructed and administered to a sample of 17 small and medium enterprises (SMEs) (see Appendix 1). In addition, interviews with key informants in the government sector allowed triangulation with prior work to conceive a preliminary SWOT analysis. Our findings are preliminary and based on a small sample size, so the survey results in particular should be interpreted with caution.

## **2.1. Strengths and Weaknesses**

The internal characteristics of the health sector and HSPs in Singapore are summarized below, followed by external factors affecting HSPs such as supporting industries. These combined factors define a favourable business climate for the provision of competitive health services.

### *2.1.1. Internal Factors (HSPs)*

#### ***Human resources: strength lies in quality of medical professionals and weakness in quality of management staff***

Results from the survey with SMEs (n=17) indicated that business owners are either ambivalent or not confident about the quality of their overall workforce, with 65% of the sample neither agreeing nor disagreeing with the statement “the overall quality of our workforce is high”. This applies more to managers than to medical professionals - whilst 88% agreed or strongly agreed that “My firm has enough high quality medical professionals to be competitive in the health services sector”, 59% neither agreed nor disagreed that “My firm's managers are highly prepared to compete in the global market for Health Services”. Singapore’s medical training industry is a highly supportive of the expansion and competitiveness of the health services sector, but our survey indicates a gap in management capacity that would enable firms to become more competitive in the sector. This corroborated feedback from a key informant that Singaporean health administrators were not up to international standards, a current weakness of large and small HSPs.

### ***Appropriate medical technology***

Half of SMEs surveyed either agreed or strongly agreed that their firm used state of the art equipment, that they upgraded medical equipment often, and that their firm benchmarks with leading global players in the use of medical technology. The remainder were ambivalent rather than in disagreement about these statements. This indicates that the state of medical technology is generally high amongst SMEs, as can be found amongst the large corporate HSPs.

### ***Internal financial resources for expansion***

76% of SMEs agreed or strongly agreed that they have sufficient financial resources for expansion. This is fitting as there was ambivalence (35%) and some disagreement (17%) in our sample in response to the statement “It is easy for my firm to raise funds externally / access external credit”. In contrast, the availability of credit to corporate healthcare players is generally high, so limited access to external funds / credit could pose a potential threat for SME expansion in healthcare.

#### ***2.1.2. External Factors (HSPs)***

The domestic and external market environment in which HSPs operate is largely supportive of expansion of the health sector. Singapore HSPs avail of good transport, communications and energy infrastructure. These external factors are not directly influenced by decisions of the firms, individually and collectively, but they shape the business environment.

### ***Business climate***

Singapore’s overall business climate is highly competitive; the city state ranks first in the World Bank’s ease of doing business index as well as first in trading across borders (World Bank 2011). Singapore’s health sector is highly competitive with access to credit and tax exemptions for health services providers (HSPs). HSPs also avail of well developed infrastructure in telecommunications and electricity, although the high cost of these services to SMEs may present a threat to the competitiveness of the sector overall.

### ***Highly regarded health system***

Generally, Singapore's health system is reputed for its high quality and strong regulation. Singapore ranked sixth globally in the World Health Organization's first attempt at ranking health systems in 2000. Whilst there has been controversy about the WHO's methods, this placing is indicative of the high quality of care available to both foreign and local patients.

### ***Medical tourist hub policy & SingaporeMedicine***

The medical tourist policy initiated in 2003 and SingaporeMedicine's subsequent creation has provided free publicity for HSPs promoting Singapore as a hub for high quality medical services. This arguably has helped firms to gain access to rising numbers of foreign patients. In 2007 the STB noted 571,000 patients spending an estimated S\$1.7 billion (US \$1.2 billion) mostly from the region, especially Indonesia, Malaysia, as well as patients from Middle Eastern countries, reflecting SingaporeMedicine's links there. Popular surgeries include high-end, complex procedures including cardiac and neuro surgery, joint replacements and organ transplants (UNESCAP 2007).

Given the political sensitivities in promoting medical tourism and the government (particularly the EDB's) decision not to explicitly promote the policy, SingaporeMedicine has been disbanded in manpower terms and now operates as a web portal for prospective patients seeking information about healthcare in the city state. Its role in enhancing the competitiveness of the health services sector in Singapore has been significant but factors such as the upturn of the global economy since SingaporeMedicine's inception and a growing middle class in ASEAN countries also help to explain why Singapore has seen a sustained rise in foreign patients since 2003.

### ***Human resources: a growing base***

Local training institutes and universities are building local capacity to provide skilled medical professionals. The NUS Yong Yoo Lin School of Medicine trains undergraduate doctors for the MBBS degree, complemented by the Duke-NUS Graduate Medical School who have been training graduate physician scientists since

2005. Nanyang Technological University will soon be launching a third medical school in partnership with Imperial College London. The Singapore government provides numerous competitive training and scholarship programs for local students in biomedical and related studies. In addition, the Health Manpower Development Program (HMDP) allows doctor and health personnel to undertake training overseas, often in Australia, UK and USA. The high quality of medical professionals in Singapore is a major strength in attracting foreign patients and in promoting confidence in the health system as a whole.

***Biomedical research hub: a marker of quality research and development***

Singapore has a supportive institutional infrastructure for biomedical research and development. Driven by the Economic Development Board (EDB), National Science and Technology Board (NSTB) and the Singapore Productivity and Standards Board (SPSB) since 2005, the biomedical hub initiative aims to firm up coordination between scientific infrastructure and industrial capability. Presently, Singapore is a major base for contract research organizations. A physical hub for biomedical research, Biopolis is home to several government agencies and publicly-funded research institutes, as well as the corporate labs of GlaxoSmithKline, Novartis, Eli Lilly and private companies, such as Bio\*One. The hub aims to facilitate peer review and collaboration between the public and private scientific communities. Companies have easy access to state-of-the-art facilities, scientific infrastructure and specialised services, allowing them to cut R&D costs significantly and accelerate the development timeline. Partnerships between the biomedical sector and local HSPs is a major strength that acts a quality marker and indicator to potential healthcare consumers that they will benefit from the latest in medical technologies and treatments.

***Government commitment to healthcare and low barriers to entry***

With a changing disease profile from infectious to chronic, non-communicable diseases (NCDs), the government has emphasized NCD prevention, treatment and management via Ministry of Health and Health Promotion Board (HPB) initiatives as demand for services related to NCDs grows. There is clear policy coherence with a burgeoning health sector of local and foreign HSPs, who benefit from a supportive

institutional infrastructure for health services and encouragement of entrepreneurialism in the health sector. A key informant stressed that barriers to entry to new players in the health sector were relatively low, with the Economic Development Board (EDB) assisting in advisory services for setting up a HSP in Singapore. However, they offer no financial assistance to do so unless a specific program is initiated by the government.

### *2.2.1. External market environment*

Opportunities and threats presented by regional competition in the health sector and demographic and epidemiological changes are described in this section.

#### ***Competition from regional players***

Thailand, Singapore and Malaysia have been identified as the key regional hubs for healthcare services in prior research (Pocock & Phua 2011, Chee 2011). However, true estimates of medical tourist numbers are actually unknown due to differences in data collection in these countries. Thailand bases its figures on the number of patient encounters with different specialists, whilst Malaysia utilizes figures from a survey of private hospitals. Singapore's Tourism Board collects this data via an exit sampling of outgoing tourists. Without comparable estimates going forward, it is difficult to assess Singapore's position in the market for foreign patients relative to Malaysia and Thailand. Furthermore, estimates from other ASEAN countries that have expressed an interest in expanding their market share of foreign patients (such as Philippines and Vietnam) are unknown. What is clear from key informants and rough estimates is that Singapore's share of foreign patients hail largely from ASEAN countries – notably Indonesia and Malaysia. This is generally followed by patients from Middle Eastern countries, partly due to Singapore Medicine's business development efforts in that region. Patient numbers from western countries are low and we can expect that ASEAN nationals will continue to form the bulk of medical tourists in Singapore in the near term. Furthermore, in terms of qualitative comparison between countries, Singapore offers high-end, complex and comparatively more expensive services relative to its regional neighbours, with a substantial market share of high-income patients.

When we asked SMEs “how is the growth of global players in your industry affecting your firm?”, 47% had had to carve out a niche area, ranging from “*high quality medical services, niche industry e.g. brain lab, targeting the expatriate market, focusing on building a stronger brand*”. A further 36% had had to lower their prices due to price competition in the sector from Thailand and Malaysia. This indicates that regional competition is affecting the decision making of SMEs toward providing more targeted niche services and lowering prices to stay competitive.

### ***Ageing populations and chronic disease***

Chronic diseases have now overtaken infectious diseases as the main cause of mortality and morbidity in most countries—as well as contributing to escalating healthcare costs. Currently, chronic disease accounts for 78% of total deaths in Singapore and 70% of deaths in Southeast Asian countries (WHO GHO, 2008). The rising prevalence of chronic diseases presents significant opportunities for HSPs in Singapore, who can expect to see increased demand for chronic disease management services, surgical procedures related to chronic conditions and rehabilitative care for older patients following surgery. An informant from the Ministry of Health noted that there currently exists a gap in step-down care facilities (3 to 6-month stays) that would enable seniors to rehabilitate post-surgery, before being allowed to return home. Consistent with forecasted demand due to demographic changes, 70% and 53% of SMEs in our sample saw population ageing and rising chronic disease prevalence as an opportunity respectively.

### ***Market segmentation of patients***

A key informant suggested that the medical tourist market for Singapore is highly segmented, in that low income patients from the region or elsewhere cannot afford to come here and instead may choose Malaysia or Thailand. The Singapore market is at the high end of surgical complexity but this comes with an expensive price tag, which our informant suggested did little to deter very high- income patients from coming and willing to pay out-of-pocket (OPP) for services. What may be missing is a market for middle-income patients in Singapore. An external global trend of the growing middle class and their purchasing power may have implications for Singapore’s health sector,



which could miss out unless more is done to curb rising OPPs for services. Similarly, more could be done by HSPs to promote tie-ups with health insurance companies, who may be able to help promote Singapore to their clients as a first-choice destination for services.

### ***Market saturation could be on the horizon***

In our sample, 82% agreed or strongly disagreed with the statement “there are enough HSPs in Singapore to cope with demand from local and foreign patients”. This may indicate market saturation from an SME standpoint and poses a potential threat to expansion of the health services sector.

### ***Foreign patients as a percentage of profits***

Tourism constitutes around 5% of Singapore’s GDP, with approximately 0.5% going towards the health sector via medical tourist spending. In terms of overall GDP this figure is insignificant, but an informant suggested that the importance of medical tourists to the overall health sector was significant and is only set to grow, with a rough estimate of 10% of total revenues in the health sector coming from foreign patients currently. A key informant in the public sector noted that foreign patient flows are insignificant in government hospitals, which are mandated to serve the public good and provide health services to a Singaporean majority. Coupled with the lack of an explicit MOH medical tourism policy, this indicates that any further growth in the medical tourism market is likely to be driven by the private sector.

#### ***2.2.2. Domestic market environment***

### ***No significant barriers to market entry***

A key informant noted that there are no significant barriers to entry for HSPs in Singapore, as the market is already highly privatized with a range of strong local HSPs, including Raffles Medical Group, Parkway Group and the Thomson Medical Centre. The Economic Development Board (EDB), a government statutory agency tasked with increasing foreign investment in Singapore, leads a joint initiative with the Ministry of

Health via the Health & Wellness Programme Office (HWPO). As the mission statement states:

*“The HWPO seeks to further enhance Singapore’s healthcare system while driving innovation through key platforms that promote public-private partnerships to accelerate companies’ development of future solutions today. Through these innovation partnerships, HWPO seeks to entrench Singapore as a sophisticated lead market to develop more effective systems and solutions that can address unmet healthcare needs in Asia and global markets”.*

Generous funding is offered by the Singapore government to promote the development of new medical technologies or processes in healthcare delivery. One such example is the Public Private Co-Innovation Partnership, launched in November 2010. This initiative aims to *“develop solutions for the government's longer-term needs. The Government will commit S\$450 million over the next five years to fund such collaborations. Each company can receive more than S\$1.75 million in funding for three key stages - proof of concept, proof of value and test-bedding of prototypes. Under this initiative, Singapore's Ministry of Health is calling for proposals for a remote monitoring solution for chronic disease patients, initially targeted for diabetic population. Advances in tele-health technologies can ease the burden of chronic disease management by allowing caregivers and physicians to monitor and administer care remotely. By reducing noncompliance and enabling painless testing, the new technologies can improve the level of care and quality of life for patients. Companies that are developing these solutions can further leverage Singapore as a reference site when commercialising and exporting the solution globally”*(EDB website). Thus, government encouragement of new ventures in the health sector via financial and advisory support from the EDB explicitly welcomes new entrants to the health sector.

### ***Pricing transparency***

Limited information available on the pricing of health services presents a threat to attracting both local and foreign patients and raising demand. As a key informant from a HSP noted, insurance providers often have to negotiate with doctors who charge 50% or more for surgeries relative to the market norm insurance companies are aware of, leading to delays in patient reimbursement and sometimes conflict between insurance

providers and patients. Publishing consultation fees is feasible for hospitals but efforts aimed at making surgical fees transparent (via publishing pricing lists) are likely to face resistance unless HSPs are mandated to do so. The recent high profile case of a Singaporean doctor charging exorbitant fees to a member of Brunei's royal family has brought this issue to the fore. The Singapore Medical Association (SMA) had in the past published price guidelines, but a recent ruling by the Competition Commission of Singapore led to its abolishment about three years ago. Now, new market entrants will face a highly diverse range of price and may face challenges in setting competitive prices to attract patients. One informant suggested that the Singapore government should not attempt to control prices, but instead provide guidelines for fees so that patients are at least aware of what the government considers to be a fair price for surgical and medical procedures.

#### ***Impact on the public health system and access for local patients***

A key informant strongly advocated against a medical tourist policy, citing the high cost to the public sector and local consumers in terms of public to private health worker brain drain and rising medical costs induced by a fee-for-service payment model. This informant noted that private sector salaries were continually rising in contrast to largely rigid public sector salaries. In addition, GP salaries in the private primary care system are held down by highly subsidised government polyclinics, whilst at the tertiary end of care, fees charged by specialists are too high as are their salaries. This trend could be inducing public sector doctors between primary and tertiary care to transfer to the private sector attracted by higher pay. Ultimately, private HSPs have a vested interest to generate profit as equally as provide high-quality services, alongside government policies that prioritizes economic growth.

#### ***Healthcare financing***

In our survey, SMEs noted that 70% of local patients pay OPPs, in contrast to 65% of foreign patients. The government's financing scheme, the 3Ms (Medisave, Medishield and Medifund), covers just 35% of costs in our sample.

**Table 4. Survey Results for Financing**

How do most local patients pay for services?*		
Out-of-pocket: 70%	Private insurance: 29%	3Ms (Medisave, Medishield, Medifund):35%
How do most foreign patients pay for services?*		
Out-of-pocket: 65%	Insurance (overseas): 47%	Insurance (local):18%

\* n = 17. Percentages may sum to >100 as participants could tick more than one option

In a highly regressive healthcare financing system, where 94% of private healthcare payments are out-of-pocket, the combination of poor transparency of fees and high OPPs can lead to an ever-increasing spiral in healthcare costs (WHO GHO, 2009 data). This can only serve to deter local and possibly the mid- to high-income foreign market from consuming health services in Singapore.

### 2.2.3. Infrastructure

#### ***High cost of electricity/ telecommunications sector to meet future demand***

Our sample of SMEs indicated some dissatisfaction with the cost of electricity and telecommunications services, with 37% disagreeing with the statement “My firm is satisfied with the cost of power sources (electricity) available to us”. In response to whether SMEs were satisfied with telecommunication facilities in terms of cost and technical capacity, 52% disagreed or were ambivalent. Furthermore, 42% disagreed or were ambivalent in response to the statement “the local telecommunication infrastructure has the capacity to meet the increased demand of the Health Services sector in the future”. High electricity costs and limited confidence in the telecommunications sector present potential threats to the expansion of the health sector, particularly for SMEs.

## **2.2. Macro Environment**

This section describes aspects of the policy and regulatory environment in which HSPs operate, largely determined by government, that pose opportunities and threats to the expansion of Singapore's health system and its potential to become a major hub for health services.

### *2.2.1. Policies and Regulations*

#### ***Strict controls on medical registration***

An open immigration policy allows experienced biomedical professionals, researchers and management staff to enter the country, but medical doctors must either have been trained in medical schools detailed in a Mutual Recognition Agreement (MRA) with selected countries, only one of which (Malaysia) is regional, to practice in Singapore (Singapore Medical Council 2011). Otherwise, foreign applicants must pass a medical exam and apply for a temporary practising licence. This limitation is a threat to the expansion of the sector here, particularly as Singapore experiences the highest proportion of domestically trained doctors migrating to OECD countries amongst ASEAN countries (Bhargava *et al.* 2010).

One of our key informants noted that the stringent licencing requirements of the Singapore Medical Council (SMC) were hindering the ability of corporate HSP's to recruit doctors from overseas and by definition expand and provide quality services to patients. He hinted at the use of quotas to limit the inflows of medical practitioners but at the same time, insufficient numbers of doctors being trained domestically. He did however acknowledge the government's efforts in recent years to ramp up the supply of new doctors, exemplified by the creation of the new Duke–NUS medical school and the forthcoming NTU/Imperial College medical school. Currently, strict requirements for foreign doctors present a constraint to the competitiveness of the health services sector in Singapore.

### ***Immigration restrictions as related to patient nationality***

A key informant from a corporate HSP shared anecdotal accounts of some prospective foreign patients being subject to onerous checks from the Immigration and Checkpoints Authority (ICA). One such case was that of a Bangladeshi national who intended to undergo a surgical procedure by the HSP, but was subject to cumbersome background checks due to fears that he could pose a terrorist threat. Singapore does not yet offer a dedicated medical tourist visa and this could present a threat to expand its market share of foreign patients in the region and globally.

### ***Land release policies***

A key informant noted that the Singapore Land Authority (SLA) had on occasions refused to release land to HSPs, and when they did the location was in inaccessible places. In addition, he noted that the land often was not zoned appropriately by the Urban Redevelopment Authority (URA). Incoherent or unsuitable land release policies currently present a threat to the competitiveness of the sector.

### ***2.2.2. Institutional support***

#### ***Strong intellectual property enforcement***

Singapore offers sound intellectual property protection and enforcement, thereby assuring foreign and local investors of reliable, continued support for medical technology development (enhanced by the biomedical hub policy).

### ***Law and order***

Singapore is one of the safest countries worldwide with a homicide rate of 0.5 per 100,000 inhabitants in 2009, the fourth lowest globally (UNODC). The rule of law is particularly strong with strict punishments for offenders.

## 2.3. SWOT Analysis of the Sector

### 2.3.1. Identification of Strengths, Weaknesses, Opportunities and Threats

<p><b>STRENGTHS</b></p> <ul style="list-style-type: none"> <li>• High quality medical professional workforce</li> <li>• State of the art medical equipment</li> <li>• Sufficient internal financial resources for expansion</li> <li>• SingaporeMedicine online portal for prospective foreign patients</li> </ul>	<p><b>OPPORTUNITIES</b></p> <ul style="list-style-type: none"> <li>• Singapore’s reputation for high quality care</li> <li>• Ease of doing business ranking</li> <li>• Population ageing and rising share of chronic diseases</li> <li>• Potential to grow market share in niche areas</li> <li>• Sustained government commitment to education and training of medical professionals</li> </ul>
<p><b>WEAKNESSES</b></p> <ul style="list-style-type: none"> <li>• Ambivalence about capacity of management staff to compete in global markets</li> <li>• Low confidence in SMEs that staff have the necessary talent to implement /use new medical technologies</li> <li>• Poor intra-industry collaboration and limited participation in international health sector associations</li> </ul>	<p><b>THREATS</b></p> <ul style="list-style-type: none"> <li>• High cost of electricity and telecommunications</li> <li>• Potential saturated market for foreign and local patients</li> <li>• Regulation: either too lax regarding quality of care or too restrictive (hiring foreign doctors)</li> <li>• High cost to public sector in promoting private HSPs in terms of brain drain and rising prices for local consumers</li> </ul>

### 2.3.2. Enhancing Strengths and Opportunities / Mitigating Weaknesses and Threats: Roles of Policies, Regulations and Institutional Support

#### ***Government should focus on business development, not marketing***

SingaporeMedicine has been instrumental in developing relationships with governments and large corporations overseas to send their citizens / employees to Singapore for healthcare. Arguably, patients will want to remain closer to home for medical services unless it is made significantly easier or cheaper to do so. Developing relationships with foreign governments, corporations and insurance providers and highlighting Singapore’s strengths could lead to MOUs that would expand Singapore’s share of foreign patients. The business development recommendation applies equally to cultivating the domestic market.

#### ***Building branches overseas***

Singapore could do more to expand the reach of renowned regional brands in the health sector (profiled below) in overseas markets by building hospitals and medical centres overseas –in other words, bringing services to the patient, rather than expecting the patient to come to Singapore. As a key informant from a corporate HSP put it, Singaporean health workers will migrate overseas, attracted by higher salaries anyway, “*you may as well recruit them under a domestic brand*” so that the cost of training health workers is not lost in foreign markets under non-Singaporean-owned companies. But there has been reluctance to move in this direction by the Ministry of Health, due to fears that this would exacerbate a perceived shortage of doctors in Singapore. With the rise in training medical staff, along with the potential to hire more foreign doctors if regulations are relaxed, this fear may be unfounded. International Enterprise Singapore could play a significant role in helping large domestic HSPs to build overseas branches. Given the small size of the healthcare sector in Singapore in general, this option would not be feasible for SMEs.

Other feedback received from SMEs regarding areas that need regulation to help them to become competitive global service players included:

- “Quality control / medical excellence”
- “Allow HSPs to provide insurance services”
- “Increase the ability of nurses to bridge skills gap”
- “Decrease restrictions for foreign doctors’ registration”
- “Allow advanced stem cell work”

Importantly, the Singapore government must be cautious in pursuing an export-lead growth model in health services to ensure that this does not skew the incentives for doctors to treat foreign patients over local patients.



### 2.3.3. Profiling Key Players in the Sector

#### **Parkway Group**

*Capitalization:* S\$3350 million (September 2011)

*Workforce:* 4228 doctors in Singapore based hospitals (some data unavailable, including data on management staff/nurses)

*Sales/ revenue:* 1H 2011, S\$621.2 million revenue, S\$78.3 million net profit

*Market share:* owns and operates network of 16 hospitals and more than 3000 beds across Singapore, Malaysia, Brunei, India, China, United Arab Emirates and Vietnam.

*Type of services provided:* comprehensive

Please see: <http://www.parkwayhealth.com/newsroom/factsheets/>

[http://www.parkwayhealth.com/Library/1/Pages/316/ParkwayPantai\\_CorporateUpdates\\_H12011.pdf](http://www.parkwayhealth.com/Library/1/Pages/316/ParkwayPantai_CorporateUpdates_H12011.pdf)

**Parkway Pantai Limited** is the holding company which controls one of the region's largest integrated private healthcare provider with a network of 16 hospitals and more than 3000 beds throughout Asia, including Singapore, Malaysia, Brunei, India, China and Vietnam, and United Arab Emirates. From 2013 onwards, the Group will have 8 new hospitals with more than 2000 additional beds.

In Singapore, the Group owns **Parkway Group Healthcare Pte Ltd** and **Parkway Hospitals Singapore Pte Ltd**, which operates three of Singapore's premier healthcare providers: **Gleneagles Hospital, Mount Elizabeth Hospital, Parkway East Hospital**; all accredited by Joint Commission International (JCI). It also owns **Parkway Shenton Pte Ltd**, a major provider of primary healthcare services, **Parkway Radiology** and **Parkway Laboratory Services**. In Malaysia, the Group owns **Pantai Holdings Berhad** which operates nine **Pantai Hospitals** and two **Gleneagles Hospitals** with more than 700 accredited doctors. Parkway Pantai Limited also operates 40 **Parkway Health Patient Assistance Centres (PPAC)** across the globe.

Indonesia, Malaysia, Bangladesh, Vietnam and Myanmar were the top sources of foreign patients. Inpatient admissions grew 4.2% from 24,282 admits in 1H 2010 to 25,304 in 1H 2011. Day cases grew 6.8% from 18,590 cases in 1H 2010 to 19,854 cases in 1H 2011. Net revenue per adjusted patient day increased by 11%, due to more revenue-intensive, complicated cases in specialties like paediatric medicine, haematology, general surgery, orthopaedic surgery and renal medicine.

### **Gleneagles Hospital**

A 272-bed private tertiary acute care hospital providing a wide range of medical and surgical services, it has a long history of serving the expatriate community throughout the region. Accredited with Joint Commission International (JCI), Gleneagles Hospital's key specialties are cardiology, gastroenterology, liver transplant, obstetrics & gynaecology, oncology and orthopaedics.

### **Mount Elizabeth Hospital**

A 345-bed private tertiary acute care hospital, Mount Elizabeth Hospital is one of the largest hospitals in the region and has an established reputation in Asia for premier private healthcare. It provides a wide range of medical and surgical services and is well known for the depth of expertise of its specialists. Mount Elizabeth Hospital performs the largest number of cardiology and neurology surgeries in the private sector and in the region. The hospital is accredited with Joint Commission International (JCI) and is the first private hospital in Asia to win the Asian Management Award for exceptional people development and management in 1994.

### **Parkway East Hospital**

A 118-bed private general acute care hospital with an outreach specialist centre that provides a comprehensive range of clinical disciplines and subspecialties, Parkway East Hospital (formerly known as East Shore Hospital) has built a niche for itself among residents in eastern Singapore. Parkway East Hospital is accredited with Joint Commission International (JCI) in 2007 and has clinical expertise in surgery, paediatrics, obstetrics and gynaecology, and cardiology.

### **Parkway Novena Hospital (scheduled to open)**

A 333-bed general tertiary acute care hospital located in the newmedical hub at Novena, Parkway Novena Hospital offers a full spectrum of services with key focus on heart and vascular, oncology, orthopaedics and general surgery. The fully single-bedded hospital lies adjacent to the Parkway Novena Specialist Centre and provides integrated healthcare in one location. It has incorporated environmentally friendly features and is the first private hospital in Singapore to implement paper-less and fully electronic medical records.

### **Raffles Medical Group**

*Capitalization:* S\$1194 million (June 2011)

*Workforce:* not available

*Sales/ revenue:* Q2 2011 S\$66.9 million revenue, S\$11.7 million net profit

*Market share:* owns and operates 74 clinics and 1 hospital in Singapore, 3 in Hong Kong, 1 in Shanghai

*Type of services provided:* comprehensive

Please see: <http://www.rafflesmedicalgroup.com/ImgCont/246/standchart-rfmd-27july11.pdf>

<http://www.rafflesmedicalgroup.com/ImgCont/2130/press-release-Q22011-25July2011.pdf>

Raffles Medical Group (RMG), established in 1976, is one of Singapore's largest private integrated healthcare providers. The group runs a network of clinics, hospitals, surgical centres, speciality units and medical laboratories throughout the island. It also provides specialised medical services such as evacuation and repatriation services. It owns a part of the Raffles Hospital and has diversified into other business activities such as consultancy services and manufacturing its own range of health care products.

The company expanded in a big way after its incorporation. In 1993, it moved into the HDB heartlands with its first neighbourhood clinic in Bishan and other similar clinics

soon followed in other estates. A 24-hour travel clinic was opened at the airport in 1995 and another travel clinic at Raffles Hospital.

RMG currently runs over 50 clinics across Singapore, operates medical laboratories and an imaging centre. It established its presence overseas in 1995 with a clinic in Hong Kong. RMG now runs three clinics in Hong Kong and one in Shanghai. Apart from local customers, the group targets patients from other countries and its customer base includes patients from the Gulf, Indonesia, Malaysia and Indochina.

### **Thomson Medical Pte Ltd**

*Capitalization:* S\$204.5 million (April 2011)

*Workforce:* not available

*Sales/ revenue:* Q4 2010 S\$22.2 million revenue, S\$4.1 million net profit

*Market share:* own and operates 1 hospital in Singapore

*Type of services provided:* comprehensive, specialising in Obstetrics, Gynaecology and Paediatrics

Please see:

[http://www.thomsonmedical.com/pdf/Q4\\_FY2010\\_Financial\\_Announcement\\_231010.pdf](http://www.thomsonmedical.com/pdf/Q4_FY2010_Financial_Announcement_231010.pdf)

Thomson Medical Centre (TMC), now known as Thomson Medical Pte Ltd, commenced operations in 1979, becoming a healthcare service provider known for its focus in the areas of Obstetrics & Gynaecology and Paediatrics. TMC provides a comprehensive range of fully integrated services including medical, surgical, therapeutic, diagnostic and preventive healthcare, and specialised services such as fertility treatment. Its other specialised services include pre-natal diagnostic fetal assessments and genetic and chromosome screening for optimal management of childbirth.

Thomson International Health Services Pte Ltd ("Thomson International") is the international arm of the Group to explore and develop strategic partnerships, healthcare

consultancy and management projects as well as investment opportunities in the region. It secured its first major hospital consultancy and management project in 2010 for the 260-bed HanhPhuc International Women and Children Hospital ("HanhPhuc Hospital") in Binh Duong Province, Vietnam.

## References

- Bhargava, A., Docquier, F., Moullan, Y. (2010), *New medical brain drain data set*. Belgium: Frederic Docquier's homepage.  
<http://perso.uclouvain.be/frederic.docquier/oxlight.htm> (accessed November 17, 2011)
- Chee, H. L. (2011), 'Medical tourism and the state in Malaysia and Singapore', *Global Social Policy* 10(3), pp.336-357.
- Phua, K. H. (2007), 'Biotechnology in Singapore', Paper presented at *Asian Biotechnology Innovation & Development Initiative (ABIDI) Workshop*, RIS, NewDelhi.
- Pocock, N. S., K. H. Phua (2011), 'Medical tourism and policy implications for health systems: a conceptual framework from a comparative study of Thailand, Singapore and Malaysia', *Globalization and Health* 7(12). Available from:  
<http://www.globalizationandhealth.com/content/7/1/12>
- Saxena, A. (2008), 'Economic Analyses of Medical Tourism in Singapore', Lee Kuan Yew School of Public Policy, Master's in Public Policy (MPP) Policy Analysis Exercise.
- Shahi, G. S. (2004), *Biobusiness in Asia*, Singapore: Pearson Prentice-Hall.
- Singapore Medical Council (2011), *List of Registrable Basic Medical Qualifications*. Singapore: Singapore Medical Council.  
[http://www.healthprofessionals.gov.sg/content/dam/hprof/smc/docs/becoming\\_registered\\_doctor/Second%20Schedule%20Registrable%20Basic%20Medical%20Qualifications.pdf](http://www.healthprofessionals.gov.sg/content/dam/hprof/smc/docs/becoming_registered_doctor/Second%20Schedule%20Registrable%20Basic%20Medical%20Qualifications.pdf) (accessed November 17, 2011)
- Turner, L. (2007), 'First class health care at third world prices: globalization, bioethics and medical tourism', *Biosocieties* 2, pp.303–325.
- United Nations Economic and Social Commission for Asia and the Pacific (2007). *Medical travel in Asia and the Pacific: challenges and opportunities*. Bangkok: UNESCAP.  
<http://www.unescap.org/ESID/hds/lastestadd/MedicalTourismReport09.pdf> (accessed November 17, 2011)
- United Nations Office on Drugs and Crime (UNODC), (n.d), *Homicide data (latest year)*. UNODC. <http://www.unodc.org/unodc/en/data-and-analysis/homicide.html> (accessed November 17, 2011)
- World Bank (2011), *Economy Rankings*. World Bank.  
<http://www.doingbusiness.org/rankings> (accessed November 17, 2011)
- World Health Organization (2011), *Global Health Observatory (GHO)*. World Health Organization. <http://apps.who.int/ghodata/>(accessed November 17, 2011)



1                      2                      3                      4                      5

6. How do you recruit your workforce? (please tick ALL that apply)

- Recruitment agencies / head-hunters
- Advertise vacancies via online jobs databases
- Advertise vacancies via jobs fairs locally
- Advertise vacancies via jobs fairs overseas
- Advertise vacancies internally e.g via email to employees
- Other (please specify) \_\_\_\_\_

7. What percentages of your workforce are foreign?

MEDICAL PROFESSIONALS: \_\_\_\_\_% foreign

MANAGERS: \_\_\_\_\_% foreign

8. Which countries does your workforce come from? Please list in descending order (countries with most representation first)

MEDICAL PROFESSIONALS: 1. \_\_\_\_\_  
2. \_\_\_\_\_  
3. \_\_\_\_\_

MANAGERS: 1. \_\_\_\_\_  
2. \_\_\_\_\_  
3. \_\_\_\_\_

9. How does your firm train your workforce (both medical professionals and managers)? (please tick ALL that apply)

- Continuing human resource development program
- Arranges external training as and when required
- In-house courses arranged as and when required
- Other (please specify) \_\_\_\_\_

10. Is there a labor union in your firm?

- Yes (please see q.11)
- No (please see q.12)

**For questions 11 – 16, please circle your response to the following statements:**

11. My firm's labour union contributes to my firm's strengths.

Strongly disagree                      Neither agree nor disagree                      Strongly agree  
1                      2                      3                      4                      5

12. The medical equipment that my firm uses is state of the art.

Strongly disagree                      Neither agree nor disagree                      Strongly agree



- |   |   |   |                            |   |                |
|---|---|---|----------------------------|---|----------------|
|   | 1 | 2 | 3                          | 4 | 5              |
| 13. My firm upgrades medical equipment often.   |   |   |                            |   |                |
| Strongly disagree   |   |   | Neither agree nor disagree |   | Strongly agree |
|   | 1 | 2 | 3                          | 4 | 5              |
|   |   |   |                            |   |                |
| 14. My firm benchmarks with leading global players in the use of medical technology.                        |   |   |                            |   |                |
| Strongly disagree   |   |   | Neither agree nor disagree |   | Strongly agree |
|   | 1 | 2 | 3                          | 4 | 5              |
|   |   |   |                            |   |                |
| 15. My firm has the necessary human talent to implement new medical equipment and technologies.             |   |   |                            |   |                |
| Strongly disagree   |   |   | Neither agree nor disagree |   | Strongly agree |
|   | 1 | 2 | 3                          | 4 | 5              |
|   |   |   |                            |   |                |
| 16. My firm has sufficient internal financial resources to finance expansion in the Health Services sector. |   |   |                            |   |                |
| Strongly disagree   |   |   | Neither agree nor disagree |   | Strongly agree |
|   | 1 | 2 | 3                          | 4 | 5              |

**B. Supporting Industries (external factors)**

**For questions 1 – 4, please circle your response to the following statements:**

- |   |   |   |                            |   |                |
|---|---|---|----------------------------|---|----------------|
| 1. There is a good degree of coordination between different players in the Health Services sector in Singapore.   |   |   |                            |   |                |
| Strongly disagree   |   |   | Neither agree nor disagree |   | Strongly agree |
|   | 1 | 2 | 3                          | 4 | 5              |
|   |   |   |                            |   |                |
| 2. There are enough Health Services providers in Singapore to cope with demand from local and foreign patients.   |   |   |                            |   |                |
| Strongly disagree   |   |   | Neither agree nor disagree |   | Strongly agree |
|   | 1 | 2 | 3                          | 4 | 5              |
|   |   |   |                            |   |                |
| 3. It is easy for my firm to raise funds externally / access external credit.   |   |   |                            |   |                |
| Strongly disagree   |   |   | Neither agree nor disagree |   | Strongly agree |
|   | 1 | 2 | 3                          | 4 | 5              |
|   |   |   |                            |   |                |
| 4. My firm is satisfied with graduates of local technical schools and higher education institutions that we hire as workers and managers (local workforce). |   |   |                            |   |                |
| Strongly disagree   |   |   | Neither agree nor disagree |   | Strongly agree |
|   | 1 | 2 | 3                          | 4 | 5              |

5. Is your firm an active member of the following industry associations? (please tick ALL that apply)
- Singapore Medicine
  - Asia – Pacific Medical Tourism Association
  - International Medical Travel Association
  - Joint Commission International
  - Other (please specify)\_\_\_\_\_

**For questions 6 – 8, please circle your response to the following statements:**

6. My firm is satisfied with the cost of power sources (electricity) available to us.
- |                   |   |                            |   |                |
|-------------------|---|----------------------------|---|----------------|
| Strongly disagree |   | Neither agree nor disagree |   | Strongly agree |
| 1                 | 2 | 3                          | 4 | 5              |

7. My firm is satisfied with telecommunication facilities in terms of cost and technical capacity.
- |                   |   |                            |   |                |
|-------------------|---|----------------------------|---|----------------|
| Strongly disagree |   | Neither agree nor disagree |   | Strongly agree |
| 1                 | 2 | 3                          | 4 | 5              |

8. The local telecommunication infrastructure has the capacity to meet the increased demand of the Health Services sector in the future.
- |                   |   |                            |   |                |
|-------------------|---|----------------------------|---|----------------|
| Strongly disagree |   | Neither agree nor disagree |   | Strongly agree |
| 1                 | 2 | 3                          | 4 | 5              |

### C. Your clientele

1. What percentages of your patients are local and foreign?

LOCAL: \_\_\_\_\_%

FOREIGN: \_\_\_\_\_%

2. How does your firm recruit foreign patients? (please tick ALL that apply)

- Brokers / agencies
- Fairs held locally
- Fairs held overseas
- Partnerships with insurance providers overseas (please specify)\_\_\_\_\_
- Partnerships with governments / Ministry's of Health overseas
- Other (please specify)\_\_\_\_\_

3. What percentages of your patients are local and foreign?

LOCAL: \_\_\_\_\_%

FOREIGN: \_\_\_\_\_%

4. How do most local patients pay for health services? (please tick ONE)

- Out-of-pocket
- Private health insurance

- 3M's (Medisave, Medishield, Medifund)
  - Other (please specify)\_\_\_\_\_
5. How do most foreign patients pay for health services? (please tick ONE)
- Out-of-pocket
  - Private health insurance (overseas insurance provider)
  - Private health insurance (local insurance provider)
  - Other (please specify)\_\_\_\_\_

**D. Policies / regulations/ institutional support (external factors)**

1. Which government policies that promote the efficiency of supporting industries have benefitted your business? (please tick ALL that apply)
- Investment in technical training / higher education
  - Biopolis initiative
  - Policies to bring in foreign talent
  - Monetary and fiscal policies that permit access to credit at low interest rates
  - Other (please specify)\_\_\_\_\_
  - Other (please specify)\_\_\_\_\_
2. Which industrial policies have helped your firm to be competitive in providing health services? (please tick ALL that apply)
- Tax incentives for health service companies
  - Permission to construct health facilities on prime land
  - Public hospital corporatization
  - Other (please specify)\_\_\_\_\_
3. Does the government place restrictions on the entry of foreign health services providers?
- Yes (please see q.4)                       No (please see q.5)

**For questions 4 – 6, please circle your response to the following statements:**

4. Government restrictions on the entry of foreign health services providers are a threat to my firm.
- |                   |   |                            |   |                |
|-------------------|---|----------------------------|---|----------------|
| Strongly disagree |   | Neither agree nor disagree |   | Strongly agree |
| 1                 | 2 | 3                          | 4 | 5              |
5. Tax rules for health services companies are consistent, transparent and easy to follow.
- |                   |   |                            |   |                |
|-------------------|---|----------------------------|---|----------------|
| Strongly disagree |   | Neither agree nor disagree |   | Strongly agree |
| 1                 | 2 | 3                          | 4 | 5              |
6. There is little red tape when it comes to release of imported medical equipment, business registration and securing permits.
- |                   |   |                            |   |                |
|-------------------|---|----------------------------|---|----------------|
| Strongly disagree |   | Neither agree nor disagree |   | Strongly agree |
| 1                 | 2 | 3                          | 4 | 5              |

7. Are there any issues that need to be regulated to establish a competitive environment for local health services providers to become global service players?
- 

### E. Opportunities and threats: External Market Environment

For questions 1 – 4, please circle your response to the following statements:

1. Business process outsourcing to developing countries (e.g. the Philippines) is a threat to my firm.  

Strongly disagree		Neither agree nor disagree		Strongly agree
1	2	3	4	5
  
2. Liberalization of the services sector within ASEAN is a threat to my firm.  

Strongly disagree		Neither agree nor disagree		Strongly agree
1	2	3	4	5
  
3. Population ageing presents an opportunity for my firm.  

Strongly disagree		Neither agree nor disagree		Strongly agree
1	2	3	4	5
  
4. Rising chronic disease prevalence presents an opportunity for my firm.  

Strongly disagree		Neither agree nor disagree		Strongly agree
1	2	3	4	5
  
5. How is the growth of global players in your industry affecting your firm? (please tick ALL that apply)
  - Competition for consumers with Thailand / Malaysia has forced us to lower our prices to be competitive.
  - Input costs are lower as demand is higher from other industry players in Singapore.
  - My firm has had to carve out a competitive niche area (please specify)\_\_\_\_\_
  - Other (please specify)\_\_\_\_\_

### F. Opportunities and threats: Domestic Market Environment

For questions 1 – 4, please circle your response to the following statements:

1. My firm welcomes the opening of the medical tourism industry to foreign players.  

Strongly disagree		Neither agree nor disagree		Strongly agree
1	2	3	4	5

