Executive Summary - Developing Singapore as the Healthcare Services Hub In Asia

BACKGROUND

1. The Healthcare Services Working Group (HSWG) was tasked to review and recommend strategies to enhance Singapore’s competitiveness as a medical hub. Two papers were presented to the Services Subcommittee and the Economic Review Committee (see Annexes 1 and 2). These reviewed the regional market potential, recommended strategies to expand Singapore’s share of the Asian Healthcare Services market with a focus on foreign patient attraction, and discussed possible policy implications of this initiative.

2. This executive summary captures the final recommendations that were arrived at, following extensive consultation with industry players, the Ministry of Health (MOH), the Services Subcommittee and Economic Review Committee. In addition, HSWG worked with MOH and the Economic Development Board (EDB) to commission an independent market survey* [*This was conducted by Asia Market Intelligence during the period of April to July 2002.] to ensure the validity of the assumptions underlying the recommendations.

PAST PERFORMANCE

<table>
<thead>
<tr>
<th></th>
<th>1991</th>
<th>2000</th>
<th>CAGR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value-Added</td>
<td>$681 m</td>
<td>$1,566 m</td>
<td>+9.7%</td>
</tr>
<tr>
<td>Employment</td>
<td>13,386</td>
<td>26,163</td>
<td>+7.7%</td>
</tr>
<tr>
<td>% Contribution to GDP</td>
<td>0.85%</td>
<td>0.93%</td>
<td>n.a.</td>
</tr>
</tbody>
</table>

Data from Department of Statistics (DOS)* [*Healthcare Services comprises the following DOS categories: 85110 (hospitals), 85123 (specialist medical services), 85192 (medical labs), 85193 (radiology labs), 85199 (other medical services).]

3. Since 1993, the Government has focused on the provision of affordable healthcare in line with the White Paper on Affordable Healthcare and has not actively promoted Healthcare Services as an industry. Despite this, Singapore has continued to attract patients from the region, particularly from Indonesia and Malaysia. However, following the Asian financial crisis in 1997, other countries launched concerted efforts to develop this sector. As a result, the numbers of foreign patients seeking treatment in these countries have grown rapidly relative to Singapore (see Annex 3).

SWOT ANALYSIS

4. Healthcare demand is related to population size, life expectancy and purchasing power. On all these counts, the potential growth in regional demand for healthcare services is promising. Asia’s population will expand from 3.2 billion in 2002 to 5.6 billion in 2050 (60% of world population)* [*Human Population: Fundamentals of Growth, Population Reference Bureau 2002]. In line with this trend, consumer expenditure on healthcare services and healthcare goods is expected to double from US$90 billion in 1999 to US$188 billion in 2013* [*Euromonitor International Marketing Forecasts 2001. Consumer expenditure is preferred as the market indicator instead of total healthcare expenditure, so as to exclude government payments which are typically captured by domestic government owned healthcare facilities.] While there is no reliable estimate on the actual market size of Asian patients seeking healthcare services overseas, a reasonable proxy is the 4.8 million high-
income Asian households with income above US$50,000 p.a.* [\*Asian Demographics] This number will continue to grow, considering the medium-term growth outlook of 3-5% for Southeast Asia and 5-7% for China and India.

5. Singapore is clearly regarded as the leading medical centre in the region in terms of our healthcare system, as well as the availability of skilled medical professional and latest medical technology. In terms of accessibility, our location and air links also play to our favour. On the other hand, our market survey revealed that Singapore’s weaknesses are the following: a) lack of communication and promotion of our strengths; b) prices are too expensive and do not represent value for money; c) perception that Singapore’s healthcare services lag UK and USA in terms of quality and range; and d) inability to cater to certain ethnic groups in terms of religious and language capabilities.

6. The competition for this market is also growing. Some countries are leveraging on their lower costs and have identified health tourism as a key area of development. As a result, various initiatives are being undertaken by their respective Federal and State Governments working in concert with the private sector, to promote their industry to foreign patients. In addition, the truly well-heeled patients seek healthcare providers on a global basis and are as willing to travel to UK and USA as to Asian countries.

VISION

7. The vision is to develop Singapore as the Healthcare Services Hub in Asia. The HSWG envisions Singapore’s share of this growing market to expand from less than 1% in 2000 to 3% by 2012. This would represent 1 million foreign patients contributing some $2.6 billion of value-add or 1% more to our then GDP and possibly creating about 13,000 new jobs.

STRATEGIC THRUSTS

8. The strategic thrusts are two-fold. The first is to build an enduring brand-name based on clinical excellence, whilst the second is to attract a high throughput of foreign patients for economic impact and economies of scale. These will ensure that Singapore’s positioning will possess the two mutually reinforcing elements of Clinical Medical Hub and Economic Medical Hub. Maintaining and enhancing Singapore’s position as the regional medical hub will in turn, contribute significantly to Singapore’s attractiveness as a total business and services hub.

RECOMMENDATIONS

i. Undertake a national marketing initiative to regain mindshare as the region’s premier medical hub. This would involve:

a. relaxing restrictions on responsible, institution-based advertising;
b. establishing the Singapore healthcare brand as synonymous with trust, safety and excellence;
c. establishing one-stop centres in key regional markets to facilitate the inflow of foreign patients and market Singapore’s healthcare services;
d. streamlining the immigration process for medical visitors;
e. expanding the regional referral network via training of doctors from the region, hosting international/regional medical conferences/exhibitions, and investments in regional hospitals and clinics.

ii. Establish a responsible healthcare consumer forum for greater transparency on pricing and clinical practice norms. It would provide an informed opinion to address potential grievances by patients on pricing and/or care, and deter inappropriate behaviour by errant doctors. It
could champion:

a. itemized billing (of consultation fees, drug costs, etc);
b. provision of information on professional fee guidelines and average bill size to patients;
c. use of Carepaths and Practice Guidelines;
d. compulsory internal audit to avoid unnecessary surgeries, over-charging, etc.

iii. Reduce manpower supply rigidities to enhance the cost competitiveness of the sector and to enable industry players to better respond to market demand by public and private sector, academia and industry. We should:

a. expand the sources of medical manpower and if necessary, the foreign-trained MD/MBBS graduates could be put through an entry examination to ensure quality and suitability;
b. increase the supply of nursing and paramedical manpower, especially by facilitating the flexible recruitment and retention of foreign nursing and paramedical manpower (see Annex 4);
c. lift the quota on the female intake at the NUS MBBS medical school.

Specifically on point #3a, past experience has highlighted the difficulty of recruiting and uprooting established specialists from overseas to meet local shortages. Greater flexibility to attract foreign-trained MD/MBBS graduates and training them locally is thus an alternative to meeting the demand for certain specialities in both the public and private sectors. It also provides an opportunity to localize and root foreign talent in Singapore. To ensure flexibility of supply, registration of these specialists should be conditioned upon job and training position availability.

iv. Increase the porosity of specialists and patients between the private and public sectors to optimize the use of scarce medical expertise through:

a. dual employment of specialists by the private and public sectors. This would enable foreign patients to better access specialist expertise in the public sector.
b. selective introduction of subvented healthcare at private facilities. This would help generate economies of scale in the private sector and enable them to provide more cost-competitive services.

v. Support clinical research to develop Singapore as a Clinical Medical Hub by:

a. encouraging a Clinician-Scientist mindset, e.g. ensure protected R&D time, and structure an alternative career track for Clinician-Scientists;
b. encouraging physical clustering of basic and clinical research for public and private institutions, similar to that of successful Clinical Medical Hubs, e.g. Mayo Clinic and Memorial Sloan Kettering.

vi. Introduce and apply existing fiscal incentives to help attract more investments and capability development in the Healthcare Services industry. Regulatory charges and other fees should also be reviewed and kept to minimum levels.

vii. Appoint a championing agency to promote the Healthcare Services industry and to spearhead the above initiatives.
ANNEXES

Annex 1: HSWG Paper 1
Healthcare Services: The market potential and How Singapore can compete

Annex 2: HSWG Paper 2
Potential Implications on Domestic Policy Objectives

Annex 3: Chart showing the number of foreign patients seeking treatment in Singapore and neighbouring countries

Annex 4: HSWG’s recommendations to the ERC Human Capital Subcommittee
Annex 1

PAPER 1: DEVELOPING SINGAPORE AS THE COMPELLING HUB FOR HEALTHCARE SERVICES IN ASIA

AIM

1. The HSWG was tasked to review and recommend strategies to enhance Singapore’s competitiveness as a medical hub. This is an interim paper to survey the potential market demand in our region and recommend strategies to pursue the opportunities identified.

2. In estimating the demand for this paper, the Working Group referred to third-party reports and proxy indicators. However, we have commissioned a market survey to be ready by the end of June 2002 to strengthen the quantitative aspect of our study.

REGIONAL HEALTHCARE MARKET

3. Healthcare demand is related to population size, life expectancy and purchasing power. On all these counts, the potential growth in regional demand for healthcare services is promising.

4. Asia’s population will expand from 3.2 billion in 2002 to 5.6 billion in 2050 (60% of world population). In line with this trend, consumer expenditure on healthcare services and healthcare goods is expected to double from US$90 billion in 1999 to US$188 billion in 2013 (see Table 1). Consumer expenditure is preferred as the market indicator instead of total healthcare expenditure, so as to exclude government payments which are typically captured by domestic government owned healthcare facilities. The total healthcare expenditure is projected to reach US$207 billion by 2004.

Table 1: Consumer Expenditure on Healthcare Services and Healthcare Goods (US$mil)

<table>
<thead>
<tr>
<th></th>
<th>Y1999</th>
<th>Y2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td>25,422</td>
<td>64,593</td>
</tr>
<tr>
<td>India</td>
<td>11,423</td>
<td>26,343</td>
</tr>
<tr>
<td>Indonesia</td>
<td>1,992</td>
<td>3,058</td>
</tr>
<tr>
<td>Malaysia</td>
<td>739</td>
<td>1,678</td>
</tr>
<tr>
<td>Philippines</td>
<td>1,259</td>
<td>2,173</td>
</tr>
<tr>
<td>Thailand</td>
<td>4,591</td>
<td>7,868</td>
</tr>
<tr>
<td>Vietnam</td>
<td>1,516</td>
<td>2,696</td>
</tr>
<tr>
<td>S Korea</td>
<td>16,484</td>
<td>30,586</td>
</tr>
<tr>
<td>Hong Kong</td>
<td>4,786</td>
<td>8,505</td>
</tr>
<tr>
<td>Taiwan</td>
<td>19,274</td>
<td>36,759</td>
</tr>
<tr>
<td>Singapore</td>
<td>2073</td>
<td>3,930</td>
</tr>
<tr>
<td>Japan</td>
<td>301,085</td>
<td>421,974</td>
</tr>
<tr>
<td>Total (Asia excluding Japan)</td>
<td>89,559</td>
<td>188,189</td>
</tr>
<tr>
<td>Total (Asia including Japan)</td>
<td>390,644</td>
<td>610,163</td>
</tr>
</tbody>
</table>

Source: Euromonitor International Marketing Forecasts 2001

5. While there is no reliable estimate on the actual market size of Asian patients seeking healthcare services overseas, a reasonable proxy is the

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2 Freedonia Group
4.8 million high-income Asian households (see Table 2) with income above US$50,000 p.a. This number will continue to grow, considering the medium-term growth outlook of 3-5% for Southeast Asia and 5-7% for China and India.

Table 2: Number of Households Earning US$50,000 P.A. or more (’000)

<table>
<thead>
<tr>
<th>Country</th>
<th>Y2000</th>
<th>Y2005</th>
<th>Y2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>India</td>
<td>1,109</td>
<td>1,540</td>
<td>2,275</td>
</tr>
<tr>
<td>Australia</td>
<td>1,157</td>
<td>1,344</td>
<td>1,586</td>
</tr>
<tr>
<td>China</td>
<td>1</td>
<td>3</td>
<td>25</td>
</tr>
<tr>
<td>Hong Kong</td>
<td>482</td>
<td>702</td>
<td>912</td>
</tr>
<tr>
<td>Indonesia</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Malaysia</td>
<td>76</td>
<td>96</td>
<td>145</td>
</tr>
<tr>
<td>Philippines</td>
<td>37</td>
<td>51</td>
<td>69</td>
</tr>
<tr>
<td>Singapore</td>
<td>241</td>
<td>394</td>
<td>559</td>
</tr>
<tr>
<td>South Korea</td>
<td>492</td>
<td>802</td>
<td>1,281</td>
</tr>
<tr>
<td>Taiwan</td>
<td>1,170</td>
<td>1,285</td>
<td>1,624</td>
</tr>
<tr>
<td>Thailand</td>
<td>42</td>
<td>63</td>
<td>116</td>
</tr>
<tr>
<td>Japan</td>
<td>28,388</td>
<td>23,468</td>
<td>25,701</td>
</tr>
<tr>
<td>Total (Asia excluding Japan)</td>
<td>4,807</td>
<td>6,280</td>
<td>8,592</td>
</tr>
<tr>
<td>Total (Asia including Japan)</td>
<td>33,195</td>
<td>29,748</td>
<td>34,293</td>
</tr>
</tbody>
</table>

Source: Asian Demographics

SINGAPORE’S FOREIGN PATIENT MARKET TODAY

6. Based on Singapore Tourism Board (STB)’s overseas visitors’ surveys, there were approximately 150,000 foreign patients seeking treatment in Singapore in year 2000. They incurred about S$345 million a year in healthcare expenditure. As a reference point, foreign patients travelling to the US for medical treatment generated some US$915 million of “export” revenues in 1998. Equally useful is the fact that its regional medical hubs see a large number of out-of-state patients. For example, Mayo Clinic’s patient load comprises 30% out-of-state patients and 5-6% foreign patients each year.

7. MOH has administrative records of all hospital admissions for inpatient and day surgery. Based on MOH’s data (see Figure 1), the number of foreign patients dipped significantly during the Asian financial crisis. Whilst the market has rebounded, it has not caught up with the pre-1998 growth trajectory.

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3 Foreign = Non-resident
4 STB surveys 10,000 visitors at airport departure lounges. The result of the survey is extrapolated to the entire 6 million visitors to Singapore, by road, sea and air.
5 Calculated based on data collected from STB’s overseas visitors’ survey.
6 US Trade and Industry Outlook 2000
7 Foreign patients can be viewed as three categories: inpatient, day surgery and outpatient.
8 In line with the industry trend towards ambulatory surgery, day surgery patient numbers have expanded at a faster pace since 1991 compared to inpatient admissions.
Based on year 2000 projected data against current data
Source: STB overseas visitors’ survey and MOH administrative records

8. The dip could be related to our reliance on traditional markets which were affected by the regional crisis. **Indonesians and Malaysians** account for 70-85% of Singapore’s foreign patients (see Table 3).

<table>
<thead>
<tr>
<th>Nationality</th>
<th>MOH inpatient data</th>
<th>STB Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indonesia</td>
<td>45.0%</td>
<td>74.0%</td>
</tr>
<tr>
<td>Malaysia</td>
<td>23.7%</td>
<td>10.0%</td>
</tr>
<tr>
<td>US/ Canada</td>
<td>4.1%</td>
<td>NA</td>
</tr>
<tr>
<td>India/ Pakistan/ Sri Lanka</td>
<td>3.2%</td>
<td>NA</td>
</tr>
<tr>
<td>Brunei</td>
<td>1.7%</td>
<td>NA</td>
</tr>
<tr>
<td>Other Nationalities</td>
<td>22.3%</td>
<td>16.0%</td>
</tr>
</tbody>
</table>

Source: MOH inpatient admissions (average from year 1996-2000) and STB survey (year 2000)
9. On the bright side, there is still a positive perception of Singapore’s healthcare services among patients and professionals in the region. STB’s survey showed that 72% of foreign patients chose Singapore for its high quality, whilst 31% of patients were recommended or referred to seek treatment here\(^9\).

10. **Singapore is a broad-based medical hub.** Foreign patients chose a wide range of specialty areas for both in-patient and day surgery treatment. Relative to the region, we have expertise in Cardiology, Oncology, Urology and Obstetrics, as shown by the proportionately higher foreign patient attendance in these specialties. Foreign outpatient cases spanned gynaecological consultation, physical examination, and eye check-up.

11. **Singapore’s healthcare providers have capabilities throughout the continuum of services**, from primary to secondary, tertiary and quaternary care. Both restructured hospital clusters, SingHealth and National Health Group, span the whole continuum, whilst the two leading private healthcare groups, Parkway and Raffles Medical, focus mainly on primary to tertiary services.

**TARGETS AND THE ECONOMIC BENEFITS**

12. In year 2000, we estimate that Singapore captured less than 1% of the well-heeled Asian market for healthcare services. We aim to **expand our market share to 2% by 2007 and 3% by 2012** (see Table 4). Taking into account the projected growth in the number of Asian households with more than US$50,000 income, this suggests a total of 1 million foreign patient visitors per annum by 2012 with 100,000 foreign patient admissions. This would generate S$3.0 billion in healthcare expenditure or close to S$2.6 billion in value-added to the Singapore economy, and could create some 13,000 jobs\(^10\), a significant proportion of whom would be for paramedical and nursing manpower.

Table 4: 2007 and 2012 Targets (T)

<table>
<thead>
<tr>
<th></th>
<th>Y1996</th>
<th>Y2000</th>
<th>Y2007 (T)</th>
<th>Y2012 (T)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Share of Asian market</strong></td>
<td>-</td>
<td>^1%</td>
<td>2%</td>
<td>3%</td>
</tr>
<tr>
<td><strong>Foreign Patients</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>89,000</td>
<td>147,000</td>
<td>500,000</td>
<td>1,000,000</td>
</tr>
<tr>
<td>Inpatient/day surgery</td>
<td>21,000</td>
<td>18,000</td>
<td>50,000</td>
<td>100,000</td>
</tr>
<tr>
<td>CAGR of Total</td>
<td>-</td>
<td>+13%</td>
<td>+28%</td>
<td>+16%</td>
</tr>
<tr>
<td><strong>Expenditure</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>-</td>
<td>$430 mil</td>
<td>$1,500 mil</td>
<td>$3,000 mil</td>
</tr>
<tr>
<td>Foreign patients</td>
<td></td>
<td>$350 mil</td>
<td>$1,200 mil</td>
<td>$2,400 mil</td>
</tr>
<tr>
<td>Accompanying tourist</td>
<td></td>
<td>$80 mil</td>
<td>$300 mil</td>
<td>$600 mil</td>
</tr>
<tr>
<td><strong>Value Added</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>-</td>
<td>$370 mil</td>
<td>$1,300 mil</td>
<td>$2,600 mil</td>
</tr>
<tr>
<td>Healthcare</td>
<td></td>
<td>$320 mil</td>
<td>$1,100 mil</td>
<td>$2,200 mil</td>
</tr>
<tr>
<td>Tourism</td>
<td></td>
<td>$50 mil</td>
<td>$200 mil</td>
<td>$400 mil</td>
</tr>
<tr>
<td><strong>% VA contribution to GDP</strong></td>
<td>-</td>
<td>0.25%</td>
<td>0.65%</td>
<td>1.10%</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>0.20%</td>
<td>0.55%</td>
<td>0.95%</td>
</tr>
</tbody>
</table>

\(^9\) STB overseas visitors survey

\(^{10}\) This assumes that healthcare sector productivity stays constant.
13. The targets are feasible, since it means that each specialist will only be seeing 2 foreign patients per day in year 2012, compared to 0.4 in 2000. There is also adequate bed capacity, as private sector hospitals currently have occupancy rates of less than 50%.

14. In addition to the direct economic contribution, a vibrant healthcare services industry would be a key strand of a multi-faceted, mutually reinforcing Services sector. For instance, foreign patients are usually accompanied by close ones. STB estimates that each S$1 spent by a visitor generates $0.63 to the Singapore economy. Hence, this could generate an additional $578 million of tourist expenditures per annum or $364 million of VA by 2012. In total, the 1 million of foreign patients would bring about more than $3 billion in expenditures, contributing more than 1% in value-added to Singapore’s GDP. Moreover, the doctor-patient relationship is “sticky” i.e., it would generate a higher proportion of repeat visits.

15. A vibrant healthcare services industry also anchors Singapore’s initiative to develop and expand the Biomedical Sciences sector. To maintain Singapore’s leadership position and reputation for excellence in healthcare services, our clinicians need access to the latest and most advanced therapies and diagnostics. Likewise, biomedical product development will be successful only if it solves clinical problems and can be translated from the laboratory to the clinical setting. This requires a close synergy between the clinicians and the biomedical researchers.

16. In addition to attracting high net-worth foreign patients to Singapore, Singapore healthcare providers should pursue opportunities in the region to capture the big and growing Asian middle class market that seek healthcare services locally (as opposed to travelling overseas). There is potential to build Singapore MNCs in this sector. Parkway and Raffles Medical Group are already in the list of top 15 healthcare service players in Asia (including Australia) (see Table 5). This list excludes SingHealth and National Healthcare Group.

Table 5: Internationalization of Singapore-based Healthcare Enterprises

<table>
<thead>
<tr>
<th>Rank</th>
<th>Company</th>
<th>Country</th>
<th>Sales (US$)</th>
<th>Market Cap (US$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Health Care of Australia</td>
<td>Australia</td>
<td>553.7</td>
<td>638.7</td>
</tr>
<tr>
<td>2</td>
<td>Nichii Gakkan</td>
<td>Japan</td>
<td>535.1</td>
<td>3,768.1</td>
</tr>
<tr>
<td>3</td>
<td>Parkway Holdings</td>
<td>Singapore</td>
<td>228.3</td>
<td>1,003.6</td>
</tr>
<tr>
<td>4</td>
<td>Australian Hospital Care</td>
<td>Australia</td>
<td>193.2</td>
<td>53.9</td>
</tr>
<tr>
<td>5</td>
<td>Ramsay Healthcare</td>
<td>Australia</td>
<td>156.6</td>
<td>57.1</td>
</tr>
<tr>
<td>6</td>
<td>Sonic Healthcare</td>
<td>Australia</td>
<td>107.5</td>
<td>610.3</td>
</tr>
<tr>
<td>7</td>
<td>Prasit Patana</td>
<td>Thailand</td>
<td>51.5</td>
<td>0.6</td>
</tr>
<tr>
<td>8</td>
<td>Healthscope</td>
<td>Australia</td>
<td>65.0</td>
<td>5.9</td>
</tr>
<tr>
<td>9</td>
<td>Alpha Healthcare</td>
<td>Australia</td>
<td>59.2</td>
<td>219.8</td>
</tr>
<tr>
<td>10</td>
<td>Bumrungrad Hospital</td>
<td>Thailand</td>
<td>42.6</td>
<td>5.7</td>
</tr>
</tbody>
</table>
REGIONAL COMPETITION

17. Since the Asian financial crisis, other countries have aggressively marketed themselves as medical tourism destinations. **Singapore may have lost market share** as shown by the shaded area in Figure 1. The likely reasons are:

(a) Improvement in the capabilities and management of our competitors, narrowing the gap compared to Singapore. For example, a growing number of regional hospitals are now managed by experienced foreign operators.

(b) Bumrungrad Hospital in particular, has gone on a marketing blitz all over Asia. Thai tour operators have also participated in this boom, offering “check-in and check-up” packages with their usual fare.

(c) Low cost. Their marketing messages consistently emphasise that their prices are cheaper than Singapore. In Malaysia’s case, a 1998 bill to safeguard against over-charging at private hospitals and clinics have also helped\(^\text{11}\).

18. Nevertheless, **Singapore is still perceived to set the standard for quality healthcare**. Our clinicians and hospitals have achieved some well-publicised medical breakthroughs such as the separation of the Siamese twins, cord blood transplantation, etc. Doctors from the region also continue to refer their patients to Singapore.

**RECOMMENDATIONS: HOW TO COMPETE**

**POSITIONING**

19. Develop a compelling hub with two mutually reinforcing elements

(a) **Clinical Medical Hub**: Extend our lead over regional competitors in terms of medical expertise, to differentiate Singapore from the competition. Institutions such as Mayo Clinic exemplify the Clinical Medical hub, with an enduring brand name built on service, research and educational excellence. As a result, it has extensive market reach of about 10,000 patients from 120 countries, generating $5.5 billion worth of revenues a year\(^\text{12}\). Its reputation for cutting edge medicine allows it to command a price premium for even primary care services, for example, charging $25,000 for a general medical examination.

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\(^{11}\) The Private Health Care Services & Facilities Act 1998.

\(^{12}\) Sources: ST, 14 December 2001; Mayo website
(b) **Economic Medical Hub**: Attract large volume and high throughput of patients for economic impact and economies of scale. The bulk of the demand is for “bread and butter” secondary care, relative to tertiary or quaternary care. “Amortising” investments in expensive equipment and scarce medical expertise over a larger number of patients reduces the average cost and enhances cost-competitiveness. Furthermore, this provides the critical mass for management initiatives to focus on productivity and process improvements.

**NATIONAL MARKETING INITIATIVE:**
**TO REGAIN MINDSHARE AS THE REGION’S MEDICAL HUB**

20. A key factor behind Bumrungrad Hospital’s rapid growth is arguably its aggressive marketing. With rising consumer affluence and the growing competition, it is necessary for Singapore to undertake a coordinated marketing initiative to attract foreign patients, and build robust facilitation processes and referral networks in the region. This would include the following:

(a) **Review the regulations in the Public Hospitals and Medical Clinics Act (PHMCA)** with a view to relax restrictions on responsible, institution-based advertising locally and abroad.

(b) **Establish and communicate an internationally recognisable quality brand** for Singapore’s healthcare services sector emphasising trust, safety and excellence. This would complement the marketing efforts of individual healthcare institutions.

(c) **Strengthen price transparency** by publishing data on professional fees charged by various specialists, estimated hospital bill size, and the prices of drugs and other items.

(d) **Establish one-stop centres in key regional markets** to make it more convenient for foreign patients to come to Singapore. The centres would assist potential patients with visa applications, finding suitable doctors and accommodation in Singapore, etc. The one-stop centre would also market Singapore’s healthcare services to target groups such as expatriates; organise medical trade missions; and host “familiarisation” trips for regional doctors to visit Singapore. London Medicine and AusHealth are two organisations set up for similar purposes.

(e) **Streamline the immigration process** to meet the needs of medical visitors e.g. pre-approved visas for elective surgery cases, and expedited approval for emergencies.

(f) **Expand the regional referral network** by:
   - Leveraging on doctors from the region who have trained in Singapore
   - Hosting international / regional medical conferences and exhibitions and training visits. For instance, in 2000, Singapore played host to 31 such healthcare events.
   - Investing in regional hospitals and clinics.
REDUCE MANPOWER SUPPLY RIGIDITIES: TO ENHANCE COST-COMPETITIVENESS

21. Manpower expense is the major cost component in the healthcare industry, accounting for about 44% of the industry’s operating expenditure\(^{13}\). Unless manpower supply or efficiency increases in tandem with the growth in demand, cost pressures will mount, thus further eroding our competitiveness vis-à-vis neighbouring countries.

(a) Various studies including the Medical Education Review Panel have concluded that there is a need to increase the supply of doctors in Singapore. Short-term responses include a re-opening of the medical register (the list of recognised medical degrees) to the pre-1993 list\(^ {14}\); and establishing clear processes for accreditation of foreign doctors. A longer term solution would be to increase the number of doctors trained in Singapore via the proposed NUS-SGH Graduate Medical Programme.

(b) Optimise the use of limited medical expertise. There is currently a shortage of doctors relative to patient load in the public sector compared to the private sector (see Table 6).

Table 6: Distribution of Doctors and Patients in Singapore

<table>
<thead>
<tr>
<th></th>
<th>Private</th>
<th>Public/Restructured</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>% of total</td>
<td>Number</td>
</tr>
<tr>
<td>Total Doctors</td>
<td>52%</td>
<td>2,809</td>
</tr>
<tr>
<td>Specialists</td>
<td>45%</td>
<td>856</td>
</tr>
<tr>
<td>Inpatient Admissions</td>
<td>21%</td>
<td>82,500</td>
</tr>
<tr>
<td><strong>Average inpatient admissions per specialist</strong></td>
<td><strong>96</strong></td>
<td></td>
</tr>
</tbody>
</table>

Source: MOH, Singapore Accreditation Board

- To address this, a common practice in Australia is for doctors to hold dual appointments in the public and private sector, thus catering to the needs of both cost-sensitive patients and comfort-conscious patients. Visiting Consultants\(^ {15}\) and the Faculty Practice Plan\(^ {16}\) represent positive steps towards this. Such arrangements should be implemented on a wider scale to even out the manpower distribution impactfully, e.g. by allowing every public sector doctor to work up to a specified proportion of their time, say 30%, in the private sector.

- The Government could make greater use of private practitioners to provide public healthcare services to Singaporeans. For example, under the Primary Care Partnership Scheme, public polyclinics engage private GPs to provide outpatient healthcare services to needy elderly. The patients pay polyclinic charges and the government provides a subsidy to participating GPs.

\(^{13}\) Source: Department of Statistics, for Year 1999

\(^{14}\) After 1993, the number of officially recognized foreign medical schools was reduced from 178 to 28.

\(^{15}\) Private practitioners spend a portion of time in the public sector

\(^{16}\) Public sector doctors spend a portion of time in the private sector. By giving public sector doctors “the best of both worlds” it may help to retain them in the public sector.
This model can be progressively extended to inpatient services in the future. Patients are subsidised up to a fixed amount, with which they can choose to be treated in public or private hospitals. Conceptually, this will represent a repositioning of the Government’s role from being a provider of healthcare services to that of a buyer of services for its citizens.

Added benefits include lower prices and better service for consumers arising from the greater competition. Enabling subsidized patients to choose their care providers, albeit with varying levels of co-payment, would also help to neutralize the concern regarding the “demonstration effect”17.

(c) **Attract a larger supply of nursing and paramedical manpower**, with more progressive career paths. Restructure their functions with a view to optimise their roles so as to enhance efficiency and job satisfaction.

(d) **Facilitate recruitment of foreign nursing and paramedical manpower**.

- To retain nursing and paramedical manpower, the income criteria for granting such applicants Q1 employment passes should be relaxed. This would enable their family to live in Singapore.
- Empower approved healthcare providers to recruit qualified paramedical manpower and be responsible for their standards. This would streamline the employment pass application process by removing the need for the Ministry of Manpower to seek MOH's inputs.

**FISCAL INCENTIVES**

22. We recommend the introduction of
- Group relief
- Concessionary tax rate for income generated from the provision of healthcare services to non-resident patients
- Zero-rating on GST for healthcare services
- Removal of withholding tax on fees earned by visiting specialists, as well as
- Institutional zoning for land occupied by hospitals.
These fiscal incentives together with the recommendations in para 21 above will help enhance our cost competitiveness.

**CONCLUSION AND NEXT STEP**

23. Regional demand for healthcare will rise in tandem with the projected trends of rising population, life expectancy and purchasing power in Asia. We aim to expand Singapore’s share of this growing market from just under 1% today to 3% by 2012. This would represent 1 million foreign patients contributing some $2.6 billion of VA to our GDP.

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17 The “demonstration” effect refers to the concern that subsidized local patients may demand the public sector to provide the levels of care and convenience that non-subsidized foreign patients receive in the private sector.
24. Singapore can compete by emphasizing the twin aspects of being a Clinical Medical Hub and Economic Medical Hub, which interact in a synergistic way. A national marketing initiative and the restructuring of supply rigidities to enhance cost-competitiveness, are key imperatives.

25. HSWG will submit a second paper to the ERC to address the implications of our medical hub ambition on other national objectives. These include:

(a) The concern that the promotion of healthcare services to attract foreign patients could inadvertently spur demand for unnecessary services by local patients, and cause local healthcare costs to rise;

(b) The concern that subsidized local patients may demand the public sector to provide the levels of care and convenience that full paying foreign patients receive in the private sector;

(c) The need to ensure that an increase in the supply of doctors to respond to the rising demand does not impact negatively the Government’s effort to have an even spread of Singapore’s indigenous talent pool to the different professions and jobs; and

(d) The need to ensure that healthcare R&D continues to be supported so that Singapore healthcare services sector can excel and be a source of competitive advantage. This objective of being a Clinical Medical Hub is also synergistic with the national thrust to develop the research-intensive Biomedical Sciences industry as a key pillar of the Singapore economy.
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Mr. Leong Yew Meng  
Mr. Liak Teng Lit  
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Dr. Lawrence Lim  
Dr. Lim Suet Wun  
Prof. Lim Yean Leng  
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Mr. Paul Yong
DEVELOPING SINGAPORE AS THE COMPELLING HUB FOR HEALTHCARE SERVICES IN ASIA

PAPER 2: POTENTIAL IMPLICATIONS ON DOMESTIC POLICY

OBJECTIVES

BACKGROUND

1. Regional demand for healthcare will rise in tandem with the growing population, greater life expectancy and increasing purchasing power in Asia. Singapore can benefit from this market opportunity by attracting more well-heeled Asians to seek healthcare services here.

2. In HSWG’s first paper that was submitted to the ERC on 23 April 2002, we proposed that Singapore aims to increase its market share from less than 1% in 2000 to 3% by 2012. If this is achieved, it would represent an inflow of 1 million foreign patients per annum, which could contribute some $2.6 billion of value-add to our GDP.

3. HSWG also recommended that Singapore clearly positions itself to be a compelling hub with two mutually reinforcing elements: Clinical Medical Hub and Economic Medical Hub. The former’s intent is to build an enduring brand-name based on clinical excellence, whilst the latter’s goal would be to attract a high throughput of foreign patients for economic impact and economies of scale. Maintaining and enhancing Singapore’s position as the regional medical hub will contribute significantly to Singapore’s attractiveness as total business and services hub.

4. Singapore should launch a national marketing initiative to regain mindshare as the region’s premier medical hub. In addition, HSWG concluded that it is important to reduce manpower supply rigidities to enhance the cost competitiveness of the sector and to enable industry players to better respond to market demand. A number of fiscal incentives were also suggested to help attract more investments and capability development.

AIM

5. The objective of this paper is to address the implications of our medical hub ambition on other national objectives. We identified four key issues:

   I. Impact on local healthcare costs
   II. Perception of disparity; and access to Affordable Healthcare
   III. Meeting the demand for doctors and the implication on our talent spread
IV. Support for clinical research

ISSUE I: IMPACT ON LOCAL HEALTHCARE COSTS

6. The concern is that attracting more foreign patients could inadvertently spur inappropriate demand by local patients, and cause local healthcare costs to rise.

7. In conventional economics, increased supply lowers the price for the consumer. However, unlike other markets where consumers make informed choices, doctors and other healthcare providers as suppliers have significant influence over the consumer decision in healthcare services due to information asymmetry. As a result, “more competition and supply of medical services may drive costs up instead of down”\(^1\). Known as supplier-induced demand, this hypothesis rests on three key assumptions:

(a) **Target-income hypothesis**, expounded by Newhouse\(^2\) as follows: “Suppose physicians have a certain income target. As the number of physicians in an area increases, visits per physician will tend to fall. To achieve any given target income, each physician will then have to charge higher fees.”

(b) **Physician moral hazard**: By itself, information asymmetry is not an issue as it is precisely this informational advantage that the patient sees the doctor for. However, the doctor could exploit this and advise the patient to consume inappropriate services and procedures. For instance, this may occur if the doctor is motivated by personal financial gain and operates in a practice structured as an entrepreneurial profit making firm. In such situations, the doctor is said to be an “imperfect agent”.

(c) **Patient moral hazard**: In a healthcare system where there is assured payment through Government reimbursement or private insurance systems, patients have no motivation to be discerning in their choices in healthcare services. The natural tendency would be for the patient to over-consume healthcare services, regardless of whether it actually improves his or her health.

8. When the three assumptions hold, supply does appear to create its own demand. In 1951, Milton Roemer found empirical evidence from Saskatchewan (Canada) which showed that hospital bed availability appeared to have insatiable capacity to generate utilization. This led to Roemer’s Law: “a built bed is a filled bed”. However, it is important to note

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\(^1\) Source: White Paper, Affordable Health Care, 1993
that Roemer himself qualified in a later study in 1993 that this observation holds “if there is an assured payment system”.3

9. Indeed, many of the studies on supplier-induced demand were supported by empirical evidence from fully insured healthcare systems. For example, in the fixed-fee, national health insurance systems of Canada and Western Europe, studies found that whenever fees were lowered, the utilization rate of healthcare services tended to rise. In the United States, which was mainly funded by a private insurance system and where fees were not constrained by fixed schedules, studies found that fees rose together with the number of doctors.

10. Singapore’s experience provides a useful contrast. Figure 1 suggests that the utilization rate of polyclinic and private GP services has declined despite an increase in the number of primary healthcare doctors from 1993 to 2001. A possible explanation could be that more patients were going directly for specialist consultation. We were unable to obtain data on specialist out-patient visits in the private sector. However, looking solely at the number of polyclinic and public specialist out-patient visits, the same trend of declining utilization rate is present.

Fig 1: Singapore’s out-patient experience4

<table>
<thead>
<tr>
<th>Total public (polyclinics) and private sector (GPs) visits</th>
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<tbody>
<tr>
<td>Year</td>
</tr>
<tr>
<td>------</td>
</tr>
<tr>
<td>1993</td>
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<tr>
<td>2001</td>
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<table>
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<tr>
<th>Total public (polyclinics)</th>
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<tbody>
<tr>
<td>Year</td>
</tr>
<tr>
<td>------</td>
</tr>
<tr>
<td>1993</td>
</tr>
<tr>
<td>2001</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Total public (polyclinics) including specialist out-patient visits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year</td>
</tr>
<tr>
<td>------</td>
</tr>
<tr>
<td>1993</td>
</tr>
<tr>
<td>2001</td>
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</table>

11. Figure 2 looks at in-patient data. Even though the number of acute care hospital beds has risen from 1993 to 2001, both the bed-days occupied per thousand population per year as well as the overall occupancy rate at our hospitals have declined. The same downward shift is observed even after accounting for the trend towards more day surgery. It is also worth highlighting that the occupancy rate at our private hospitals has dropped rather precipitously from 68.1% to 47.1% during this same period.

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3 Sources: The Dartmouth Atlas of Healthcare, National Health Systems of the World, Volume Two, 1993
4 Source: MOH
Fig 2: Singapore’s in-patient experience

<table>
<thead>
<tr>
<th>Year</th>
<th>No. of beds</th>
<th>Bed-days occupied / thousand persons / year</th>
<th>Bed occupancy rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1993</td>
<td>6476</td>
<td>548.8</td>
<td>77.3%</td>
</tr>
<tr>
<td>2001</td>
<td>8153</td>
<td>445.0</td>
<td>73.2%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year</th>
<th>No. of beds</th>
<th>Bed-days occupied / thousand persons / year</th>
<th>Bed occupancy rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1993</td>
<td>6476</td>
<td>679.9</td>
<td>84.1%</td>
</tr>
<tr>
<td>2001</td>
<td>8153</td>
<td>612.2*</td>
<td>78.8%</td>
</tr>
</tbody>
</table>

* Using year 2000 data for private sector day surgeries

12. HSWG is not asserting that supplier-induced demand does not exist in Singapore but recognises that it is a complex, multi-factorial issue. The Singapore experience suggests that appropriate brakes can help restrain supplier-induced demand or for that matter, demand for healthcare services per se.

13. To discourage inappropriate demand by local patients, the checks include the principle of patient co-payment (through Medisave savings and out-of-pocket payments); as well as Medisave mechanisms such as withdrawal limits and in future, caps on balance billing in both the public and private sectors. In addition, it is mandatory for healthcare providers to provide financial counselling prior to hospital admission to ensure that patients are aware of the financial impact of their decisions.

14. To deter inappropriate supply, public sector providers are subvented according to disease related groups (DRGs). They are also subject to revenue caps, as well as medical audits by internal medical boards. Private sector providers have relatively more pricing freedom but face tremendous competitive pressures among themselves, from the public sector as well as hospitals in neighbouring countries, and this has discouraged inappropriate pricing or care.

15. Many of these checks were introduced following the 1993 White Paper on Affordable Healthcare. They have worked and the evidence bears this out. Overall, the increase in healthcare expenditure in Singapore has not exceeded our economic growth rate: healthcare expenditure has remained at about 3% of GDP since 1993. Similarly, the Government’s share of healthcare expenditure has stayed relatively stable at about one-third. Both these indices compare very favourably with most developed countries (see Figs 3 and 4).

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5 Source: MOH. Each day surgery is treated as one bed day.
Fig 3: Total health expenditure as % of GDP

Fig 4: Public health expenditure as % of total health expenditure

Source: World Development Indicators 2001, OECD, WHO
Recommendation 1: To retain existing checks against inappropriate supply and demand for healthcare services, and to complement these checks with the formation of Healthcare “CASE”

Source: World Development Indicators 2001, OECD, WHO
16. In view of the above, HSWG is comfortable that the appropriate restraints against supplier induced demand are in place and these will also help curb any rise in local healthcare costs due to an increase in foreign patients. To complement these checks, a Healthcare “CASE” should be established to facilitate greater transparency on pricing and clinical practice norms and deter inappropriate behaviour by errant doctors. This would benefit both local and foreign patients, as well as ethical practitioners. Its composition should include representatives from MOH, major providers, professional organisations and independent persons of standing in society.

17. The Healthcare “CASE” would act as an intermediary and provide an informed opinion to address potential grievances by patients. It could also champion some of the following initiatives:
   (a) Itemized billing (of consultation fees, drug costs, etc)
   (b) Enhance patient awareness by making available information on professional fee guidelines and average bill size by Disease Related Groups
   (c) Use of Carepaths and Practice Guidelines
   (d) Compulsory internal audit to avoid unnecessary surgeries, over-charging, etc.

18. However, independent of supplier induced demand, we would like to caution that healthcare costs in Singapore are likely to rise. The cost drivers include our ageing population, the rapid technological advancement in medicines and devices, increasing patient expectations due to affluence, medico-legal claims with rising litigation as well as manpower supply constraints.

ISSUE II: PERCEPTION OF DISPARITY; AND ACCESS TO AFFORDABLE HEALTHCARE

19. Providing high-end, luxurious healthcare services to foreign patients could have a "demonstration effect", i.e. influence local patients to expect and demand likewise. If public hospitals do not provide similar services to subsidized patients, there could be a perception of disparity creating an issue of social equity and apparent conflict with the Government’s stated commitment to provide universal access to Affordable Healthcare. This is exacerbated by the imbalance in the distribution of load and expertise between the public and private sectors (see Fig 5).

Fig 5: Current distribution of doctors and patients in Singapore6

6 Source: MOH, Singapore Accreditation Board
<table>
<thead>
<tr>
<th></th>
<th>Private</th>
<th>Public/Restructured</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>% of total</td>
</tr>
<tr>
<td>Total Doctors</td>
<td>2809</td>
<td>52%</td>
</tr>
<tr>
<td>Specialists</td>
<td>856</td>
<td>45%</td>
</tr>
<tr>
<td>In-patient Admissions/ year</td>
<td>82500</td>
<td>21%</td>
</tr>
<tr>
<td>Average in-patient admissions / specialist / year</td>
<td>96</td>
<td>295</td>
</tr>
</tbody>
</table>

20. If public hospitals do provide similar services to subsidized patients, public healthcare expenditure could rise. In addition, a booming private sector may recruit trained specialists too aggressively from the public sector and further drive up public healthcare expenditure as the public sector strives to match private sector salaries, to retain these specialists. These would put pressure on the policy objective to contain the Government’s healthcare expenditure at 1% of GDP.

21. It would be impractical to insulate foreign from (subsidized) local patients in light of the significant expansion in the number of foreign patients that we are aiming for. Some have suggested that an alternative may be to discourage public sector restructured hospitals from seeing foreign patients. However, this would be an unnecessary loss of economic opportunity as there is substantial specialist expertise residing in the various centres of excellence in the public sector. Furthermore, it could worsen the perception of disparity i.e. the private sector offering “good hospitals”, “great doctors”, and “top-rate service” only to the privileged. Instead of insulation and building a higher artificial divide between the public and private sector, HSWG’s preferred approach is to create a more porous system.

Recommendation 2: Increase porosity for specialists

22. The Visiting Consultant Scheme and the Faculty Practice Plan represent positive steps towards this. The availability of private specialists in the public sector as Visiting Consultants would help to reduce the perception of disparity and enable subsidized patients to benefit from limited specialist expertise. On the other hand, the Faculty Practice Plan could optimize the use of scarce expertise especially at the sub-specialty level as such expertise could be shared with the private sector. By giving public sector doctors “the best of both worlds” the Faculty Practice Plan may also help to retain them in the public sector. Equally important, both schemes would help to involve the best available expertise in Singapore to train the next generation of doctors.

23. Such arrangements should be implemented more widely, e.g. by allowing every public sector specialist to work up to a specified proportion of his or her time, say 30%, in the private sector. This practice of dual employment is common in Australia, UK as well as in many leading US centres, and caters to the needs of both cost-sensitive patients and comfort-conscious patients.
Recommendation 3: Allow subvention to be portable for treatment in private hospitals

24. The Government could contract with private healthcare providers to provide subsidized healthcare services to Singaporeans. For example, under the Primary Care Partnership Scheme, public polyclinics engage private GPs to provide out-patient healthcare services to needy elderly. The patients pay polyclinic charges and the Government provides a subsidy to participating GPs. This model should be progressively extended to in-patient services. In effect, the Government’s healthcare subsidy would become portable. Under this system, patients would be subsidized up to a fixed amount. They can choose to be treated in public or private hospitals, which compete on the basis of price and care.

25. This would enable the Government to move away from being an operator / provider to being primarily a buyer and regulator of healthcare services for its citizens. This is desirable as it would enable the Government to avoid some of the role conflicts that occur when the objectives of its different roles diverge.

26. The qualifying conditions for private providers to participate in treating subsidised patients, would have to be specified by MOH and could include an appropriate proportion of subsidized beds, quality standards, etc. This initiative also requires a detailed study to determine who should be subsidized, what services should be subsidized and at what levels. It is likely that some form of means testing would eventually be necessary. HSWG’s proposal is to introduce this only for in-patient care and to do so at the point of admission.

27. Similar to the porosity for specialists, the porosity for patients would neutralize the perception of disparity in access to private facilities and expertise. It would also facilitate market-based competition amongst public and private hospitals. In particular, the prospects of increased patient load would give private healthcare providers a strong incentive to offer competitive prices. The higher volume would in turn, enable them to be more cost effective, leading to a virtuous circle.

ISSUE III: MEETING THE DEMAND FOR DOCTORS AND THE IMPLICATION ON OUR TALENT SPREAD

28. In developing Singapore as a regional medical hub, there is concern that this could generate an increase in the demand for doctors thereby attracting more top talent to medicine. This would impact negatively the Government’s effort to have an even spread of Singapore’s indigenous talent pool to the different professions and jobs.

29. HSWG’s preliminary assessment is that the drive to attract more foreign patients to Singapore will only result in each specialist seeing an average
of two additional foreign patients per day\textsuperscript{7}. The impact on the demand for doctors is thus likely to be limited. This assumes that there will be greater porosity for specialists to straddle the public and private sectors.

30. However, various expert committees including the Medical Education Review Panel led by Lord Oxburgh, have projected that there could be a shortage of doctors based on our domestic load alone. HSWG’s position is that there are inherent limitations to manpower projections and the actual number required would vary with market conditions. The job scope and desirability of being a doctor are also changing. We would thus not venture to prescribe a “magic number” of doctors required. Instead, our aim is to increase the responsiveness with which the supply of doctors can adjust to the demand arising from both local and foreign patients, as well as academia and industry.

**Recommendation 4: Greater flexibility in tapping various sources to meet market demand for doctors**

31. Existing sources of trained medical talent should be supplemented with new alternatives. The inflow of doctors would be moderated with appropriate valves to pre-empt over-supply.

(a) **Establish criteria and system for selective recruitment of top talent from other countries** such as Europe, China, and India. In view of Singapore’s relative unfamiliarity with the quality of medical schools in some countries, HSWG recommends that such candidates be required to sit for the NUS Final MBBS examination\textsuperscript{8} as a screen for suitability. Those who pass will then be eligible for conditional registration according to market demand and market conditions.

(b) **Expand the number of Registrable Medical Schools for Conditional Registration**, e.g. some of the better universities in USA, UK and Australia which were in the pre-1993 register\textsuperscript{9}. Conditional registration requires the doctor to be employed by an approved healthcare institution. The candidate can only become eligible for full registration after 6 years, and even so, eligibility does not mean automatic approval by the Singapore Medical Council.

(c) Other rigidities should be removed when there is no longer strong justification for them. For example, given the large number of working mothers in Singapore today, the female quota is no longer defensible. As shown in Fig 7, over a 10-year period, an average of 86% of female doctors remained economically active, compared to 91% of male doctors (i.e. in full-time or part-time employment). HSWG is of the view that the Female Quota should be removed.

\textsuperscript{7} Please refer to ERC Paper 1.
\textsuperscript{8} This does not imply that they will be awarded NUS MBBS degree.
\textsuperscript{9} 176 medical schools were scheduled in the pre-1993 Medical Register. Since then, the list has been reduced to 24.
### Fig 7: Work Status of Doctors by Sex over 10 years (1984-1993)

<table>
<thead>
<tr>
<th>Year</th>
<th>Sex</th>
<th>Working Full Time</th>
<th>%</th>
<th>Working Part-Time</th>
<th>%</th>
<th>Not Working</th>
<th>%</th>
<th>De-registered</th>
<th>%</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ave from</td>
<td>M</td>
<td>109</td>
<td>88.7</td>
<td>2</td>
<td>2.1</td>
<td>1</td>
<td>0.5</td>
<td>11</td>
<td>8.7</td>
<td>123</td>
</tr>
<tr>
<td>1984-1993</td>
<td>F</td>
<td>44</td>
<td>73.3</td>
<td>7</td>
<td>12.4</td>
<td>1</td>
<td>2.4</td>
<td>7</td>
<td>11.9</td>
<td>59</td>
</tr>
</tbody>
</table>

32. Comparing recommendations 3(a) and 3(b) with the existing system, conditional registration is currently granted to foreign medical graduates from a small list of only 24 Registrable Medical Schools and to doctors with postgraduate qualifications e.g. Member of the Royal College of Physicians (UK) or Fellow of the Royal College of Surgeons (UK). Singaporean graduates with similar qualifications are able to obtain full registration following 1 year of provisional or conditional registration.

33. For graduates from the expanded list of Registrable Medical Schools, HSWG’s proposal is for both the Singaporeans and foreigners to go through the minimum 6 years of conditional registration before he or she can be considered for full registration. This will ensure that we do not unintentionally open a route to bypass our talent spread policy. In any event, the high cost of overseas medical education and the limited places available in these schools for Singaporeans are natural controls. It should be noted that the 152 schools that were removed from the list of Registrable Medical Schools in 1993, accounted for only 10% (or 28 persons) of the total number of doctors registered from 1990-2.

34. Recommendations 3(a) and 3(b) represent readily-available, cost-effective sources of doctors as the Government would not need to bear the cost of funding their medical education. Furthermore, tapping on the talent pool from the region would enable our healthcare players to build a team that could eventually help in their expansion overseas.

35. Whilst the recruitment of graduates who already possess specialist qualifications may appear to be a more effective way to meet the demand for specialists, it is relatively more difficult to uproot and relocate established specialists to Singapore. There is also value in having the

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10 Graduates of pre-1993 were chose to eliminate the “bond” factor in their decision to remain in the workforce.
post-MBBS foreign talent undergo his or her specialist training in Singapore as this would help to localise and root the talent to Singapore. This is the experience of the US where they have consistently creamed off large numbers of trained doctors from India, Pakistan, Sri Lanka, Hong Kong, Malaysia and even Singapore.

36. To augment the existing NUS MBBS undergraduate stream, HSWG understands that the Government is evaluating the feasibility of a graduate medical track similar to the American system through the proposed Graduate Medical Programme by NUS-SGH. This would leverage on existing NUS and SGH infrastructure and resources for a quick and cost-effective ramp-up. The initiative will also attract foreign talents and help retain some Singaporeans who would otherwise have gone overseas for their medical training. The programme could be affiliated to a renowned US medical school and fees will be benchmarked to overseas universities. This would enable the Government to significantly, though not totally, reduce the subsidy needed to support the training of more doctors.

ISSUE IV: SUPPORT FOR CLINICAL RESEARCH

37. To succeed in the clinical medical hub aspect of a compelling medical hub, the three elements of medical excellence: medical education, clinical research and clinical services, must be developed in tandem. Clinical research is also synergistic with the national thrust to develop the Biomedical Sciences industry as a key pillar of the Singapore economy. In particular, clinician-scientists play a critical role in ensuring that discoveries in the research laboratories are translated into successful solutions for clinical needs in the marketplace.

38. Today, only 160 or 6.4% of public sector doctors in Singapore are involved in clinical research, spending an average of 7 hours per week\(^{11}\). In comparison, 228 or 11% of the doctors at Mayo Clinic are involved in clinical research on a full time basis\(^ {12}\). Traditionally in Singapore, there have been relatively little recognition nor protected time for clinical research.

Recommendation 5: Develop a career track for Clinician-Scientists

39. The system for funding competitive biomedical research is now in place in both the Biomedical Research Council (BMRC) and the National Medical Research Council. HSWG recommends that the Government explicitly encourage and possibly provide more resources to expand existing initiatives to foster a new mindset towards a career in clinical research. These initiatives include:

\(^{11}\) Source: MOH
(a) BMRC’s Young Investigator Award, which provides 3-year individual-based rather than project-based funding to support young doctorates who are likely to make a significant contribution to the Biomedical Sciences industry in Singapore; and

(b) SGH’s Clinician-Scientist programme under which doctors are able to focus 75% of their time for research and appraised based on their research output and impact.

Recommendation 6: Physical clustering of Basic and Clinical Research

40. Renowned medical hubs e.g. Memorial Sloan Kettering Institute (MSKI) and Harvard Medical Centre are surrounded by a cluster of basic and clinical research activity. Such co-location stimulates and facilitates interaction between basic and clinical researchers that could result in break-through medical products, and procedures to benefit patients. These clusters have a competitive edge over institutions which only offer clinical services.

41. In Singapore, one cluster is already evolving, which involves clinical research at NUH interacting with basic research in Biopolis and NUS. Another hub of research activities could potentially cluster around existing infrastructure at SGH. Similarly, private hospitals should also be encouraged to attract research activities around themselves. HSWG envisions that these developments would strengthen and ensure the sustainability of our efforts to be the compelling hub for healthcare services in Asia. Equally important, it would maximise the synergies with the development of the research-intensive biomedical sciences industry in Singapore.

CONCLUSION

42. In summary, HSWG is convinced that healthcare services is an attractive market opportunity and that Singapore can compete effectively to become the leading player in this region. This initiative need not militate against our domestic policy objectives, namely affordable healthcare and an even talent spread. Instead, the recommendations above suggest that the drive to be a compelling medical hub can be synergistic with these objectives by developing a more robust and competitive market-based healthcare system. In addition, a vibrant healthcare services sector will go hand-in-hand with an expanding biomedical sciences industry, and ensure that the two together can provide another important engine of growth for Singapore.

43. If HSWG's recommendations are accepted, we would propose that ERC specify a timeframe for the relevant players to act. This is partly in view of the real and growing competition from neighbouring countries. Implementation is thus key. There may also be a need for a Championing Agency to spearhead the national marketing initiative, strengthen industry
competitiveness, and create and support the formation of Healthcare “CASE”.

END
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Foreign patient flow and trends

**Australia** (0.4% of total patients – 2001)
- Enjoys a steady flow of foreign patients, sustained by strong reputation for quality healthcare, and large base of expatriates.

**Malaysia** (4.5% of total patients – 2001)
- Managed to attract a significant portion of foreign patients (especially Indonesians) from Singapore.

**Thailand** (0.7% of total patients – 2001)
- Surged due to lower costs of treatment. Growth expected to continue due to active initiatives from private and public sectors.

**Singapore** (4.3% of total patients – 2001)
- A significant proportion of price sensitive patients have shifted to Malaysia and Thailand.
Annex 4: HSWG’s recommendations to the ERC Human Capital Subcommittee

Recommendations for Developing the Healthcare Services Industry

Foreign nurses

1. Singapore relies heavily on foreign sources for nursing talent. About 30% of our nurses are foreigners. 80% to 90% of them are in Singapore under a Q2 pass. This is because their salaries are usually below $2,500, the minimum income criteria of $2,500 for a Q1 pass.

2. Healthcare providers have observed a strong tendency for nurses to migrate to the US or Europe after working and receiving training in Singapore for a few years. This is mainly because they are unable to obtain a Q1 pass to allow their families to live in Singapore too, whereas they are able to bring their families with them to the US and Europe. Thus the current policy results in Singapore becoming a transit point for foreign nurses.

3. The Healthcare Services Working Group proposes to waive the minimum income criteria for foreign nurses who have been trained in Singapore for a period of time and certified by approved healthcare institutions (e.g. hospitals). This is because the nursing profession is in high demand worldwide, making them highly mobile but are paid relatively low wages because of the industry structure. As a safeguard, the Q1 pass could be conditioned upon the nurses’ spouse being employed. This would help to retain trained nursing talent.

Allied health workers

1. Foreign paramedical professionals (e.g. radiographers, physiotherapists) may be employed in Singapore only on a Q1 pass, i.e. they must meet the minimum income criteria of $2,500. In addition, for work pass applications by foreign paramedical professionals who fall within a list of professions specified by MOH, MOM would refer the applications to MOH for vetting.

2. We understand that MOH is currently exploring with MOM on the establishment of a Q2 pass category for Allied Health workers who have the necessary qualifications.

3. The Healthcare Services Working Group further proposes that MOM allows MOH to delegate the vetting authority for the work pass applications to approved healthcare institutions, who are the prospective employers of these foreign paramedical professionals. This is to facilitate the process of recruiting foreigners to mitigate the shortage of local Singapore talents in these fields.

- END -