HEALTHCARE: FINANCING AND MEDICAL TECHNOLOGY
JAPAN AND MALAYSIA COMPARISON

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INTRODUCTION

Healthcare financing is very much dependent on the history of a country. Japan's healthcare services have been provided more by the private healthcare system while Malaysia largely retains a majority public healthcare system while operating a private healthcare system in parallel. This may have roots in the number of population where Japan has four times more population than Malaysia and the private sector has been very responsive in filling the gaps of the healthcare system earlier administered by the government. The different composition of healthcare providers has paved the different methods used by both countries in financing its healthcare system. Japan has embarked on a universal statutory health insurance for all its citizens to allow equal access to the private healthcare facilities while Malaysia allows equal access only to its public healthcare system while discriminating access to the private healthcare facilities only for those who can afford the hefty cost. With this is mind, what can both countries learn from each other and whether Malaysia should also embark on a journey of statutory national health insurance coverage for its citizens to have equal access to all healthcare facilities? Are there implications with the different financing systems on the services and the technologies?

JAPAN HEALTHCARE

BACKGROUND

The source of power for the Japanese government in governing the health care is from the Japanese Constitution, Article 25:

> *All people shall have the right to maintain the minimum standards of wholesome and cultured living. In all spheres of life, the State shall use its endeavors for the promotion and extension of social welfare and security, and of public health.*

This article from the constitution states that all citizens have the right to have access to healthcare to maintain a minimum standard of wholesome and cultured living. With this the Japanese government is obligated to ensure that all citizens can have access to a minimum standard of health services.

History of Public Health Administration (JICA, 2005)

Health services administration in the Meiji era was initially under the Ministry of Home Affairs where all prefectures were directed to establish a Health Bureau and local government bodies provided the community-based public health services. Later in 1893 until before the war period, the responsibility of the public health administration was taken over by the Department of Police at each local government. Later the administration became centralized under a single authority after the establishment of the Ministry of Health and Welfare in 1938 in which the same year the National Health Insurance Act was enacted. With the constitution promulgated in 1946, the public health administration was reconstructed, and three health bureaus were established which were Public Health, Prevention and Medical Services, followed by independent Health Departments established in each prefectural government. In 1947, public

health centres became the first line of health administration with the enactment of the New Public Centre Law. The private sectors and NGOs supported many public health initiatives such as providing testing and treatments during parasitic infections, promotion of family planning and conducting regular health checks on their employees.

History of National Health Insurance (JHPN, 2015)

The Japanese government transformed an already installed health insurance system in place during the years of industrialization in Japan during the 1920s to be applied to the whole populace. During the early 1900s, labourers were resonating the socialist ideology to ask for better working conditions and workers' rights. The Japanese government however applied the 'carrot and stick' approach, while limiting socialist movements, identified improvements and enacted acts like the Factory Act in 1916 and the Health Insurance Act in 1922. In 1930s, the government then extended it to include the farming communities and then later in 1938, the government enacted the National Health Insurance Act which removed the restriction of income being an insurance pre-requisite after seeing the good effects of its implementation to allow extension to the whole population, albeit on a voluntary basis. The implementation was provided via location which later became the foundation for the current system of residence-based National Health Insurance. Nonetheless, in 1956 only a third of the population was enrolled in any form of health insurance. The act was amended in 1958 to make national health insurance (NHI) compulsory and mandated that all municipalities establish and administer residence based NHI programs. Japan finally achieved a system of universal healthcare in 1961 after all citizens enrolled into the program.

History of Inpatient Facilities (Sakai, 2011)

Even before the promulgation of the constitution, medical facilities have already existed in Japan in vast numbers and the first hospital was built in Nagasaki in 1860. A civic hospital funded by the Emperor was established in 1868 to provide medical care for the poor. In 1877, almost all prefectures had hospitals. There were 106 hospitals of which 7 were national, 64 were public, and 35 were private. However, after requests was made to the Ministry of Interior to establish private hospitals, the year 1888 statistics showed that private hospitals outnumbered public hospitals, with 339 private hospitals and 225 national/public hospitals. With the health insurance system in place, many more private hospitals were established by the health insurance societies. The characteristics of medical care in Japan was tilted more towards having private hospitals and now almost all medical care is provided by the private sector. The heath care facilities in Japan largely operate based on the expertise of a specific human body system and have largely eradicated the front-line general practitioner screening.

NHI structure

With a medical care system provided by the private sector, the compulsory NHI is the best way to ensure all citizens can have access to any health services at a reasonable price. There are three NHI schemes which are employment-based, residence-based

and elderly. Amongst these three schemes, only the employment-based HI is sustainable, while residence-based and HI for the elderly requires government funding. This is because the residence-based HI also includes the unemployed and retirees aged less than 75 years old while the elderly HI are for those aged more than 75 years old. In 1973, Japan made a mistake by removing the co-payment for the elderly aged 70 years and above which led to an increase by fourfold in healthcare spending for the elderly. Eventually, this decision was reversed in 1983 and the elderly now must pay small co-payments for health services. The elderly aged 70 to 74 must pay 20% co-payment and for those aged above 75 years old only pay 10% co-payment.

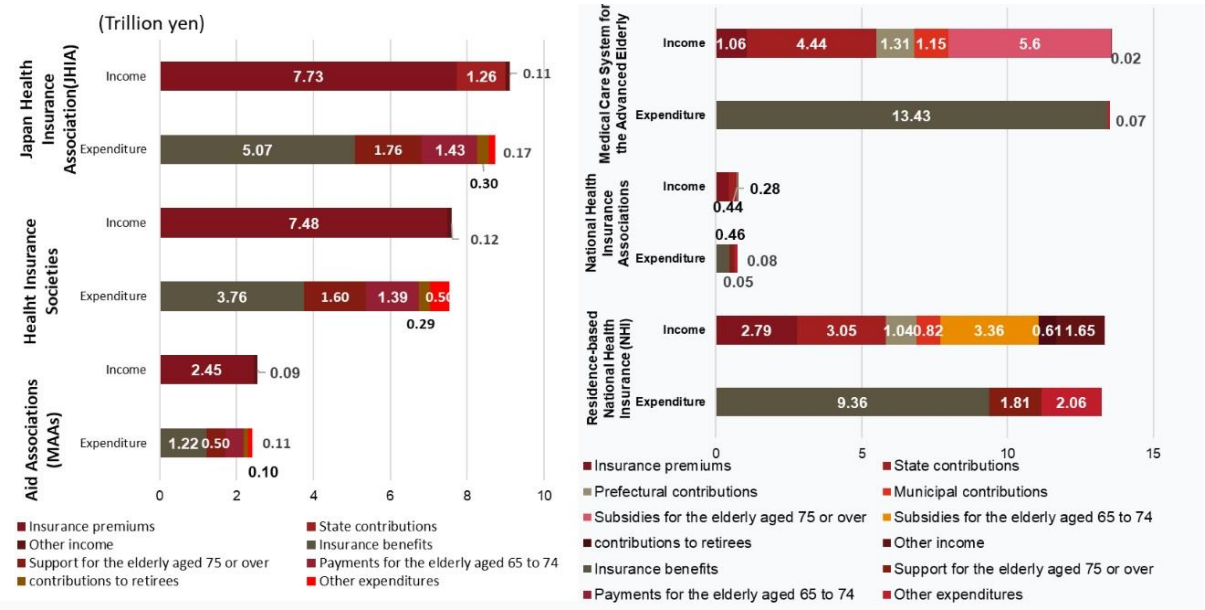

Figure 1 Income and Expenditures in the health insurance system, FY2014

Source: (JHPN, 2015)

HEALTHCARE FINANCING

With an aging society, where 28.4% of the population are aged 65 and over in 2019, the cost of healthcare will be a heavy burden on the government. This is illustrated in Figure 1. In Figure 1, the left side is the employment-based NHI. The income received by the Aid Associations and Health Insurance Societies is largely sufficient to cover their expenditure. However, the insurance premium received by Japan Health Insurance Association from employees of small to medium sized companies is insufficient to cover for the expenditure thus a portion is contributed by the state. Additionally, the employment-based NHI premium is inclusive of an apportionment made to pay for the elderly. This means the younger generation also contributes towards the elderly healthcare expenditure in their premium. Even with this apportionment, it is still insufficient to cover for the expenditure incurred by Medical Care System for the Advanced Elderly and Residence-based National Health Insurance, both for the elderly. The premium received is far lower than the expenditure incurred resulting in the government funding the difference. With a low birth rate and an increasing aging society proportion, the fiscal burden will eventually shift to the

government as the workforce may shrink allowing them to only shoulder a lesser portion of the soon-to-be increasing elderly healthcare expenditure.

As a result, even though everyone is obligated to enrol into NHI, the contribution from NHI premium alone is not enough to support the total cost of the medical services dispensed in a year. The government must support the difference through taxes, bond issuance and funds from the local government. Figure 2 shows in essence the social security benefits (inclusive of medical care) provided to the citizens in 2020, a total of ¥126.8 trillion, in which government had to fund a deficit of ¥50.4 trillion, 39.75% of the total social security benefits. According to EMERGO by UL, Japan's expenditure in healthcare is 84% using public fund while the remaining 16% are from the NHI premiums and other asset income.

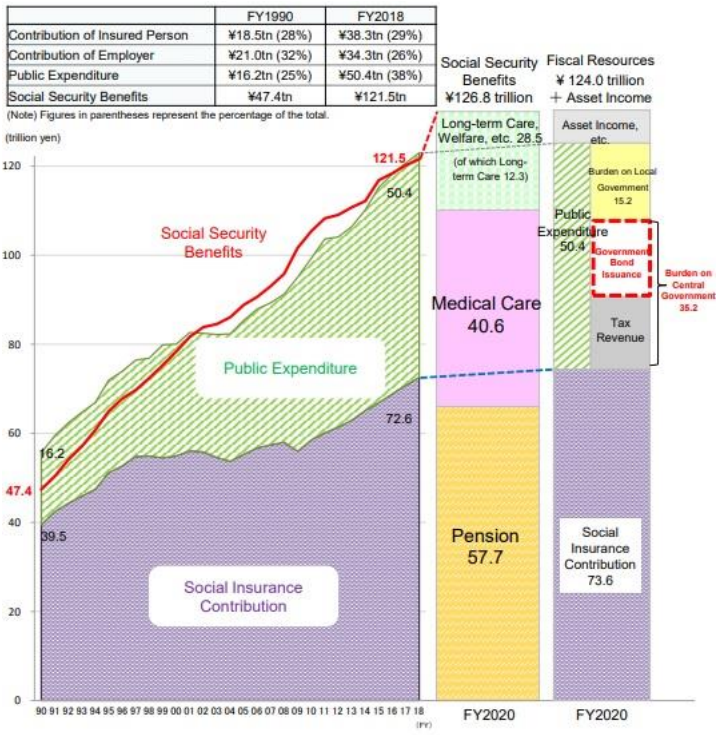

Figure 2: Social Security Benefits FY2020

Source: Japanese Public Finance Fact Sheet, MOF, April 2021, pp27

It is said that Japan has high quality medical services but with low costs. This can be achieved because the Japanese government regulates the fees for medical services, products, and pharmaceuticals by all providers according to a national fee schedule. The fee schedule along with its conditions are reviewed and revised by Ministry of Health Labour and Welfare (MHLW) every two years. Since both overall costs and line-item costs can be changed, this policy tool serves as the government's lever for cost control. This mechanism exerts great control over the costs, supply, and service delivery of the healthcare system by having explicit objectives and ongoing oversight. Interestingly, it also includes ensuring the suppliers' financial stability.

In 2019, Japan spent ¥44.4 trillion for medical care, and this was 10.7% of the GDP. With a population of 125.8 million, this translates to ¥353,000 per capita spent on

medical care. Although it is the lowest compared to other OECD countries, but the current structure in financing the medical care may be unsustainable with an aging society proportion increasing in the near future.

MEDICAL TECHNOLOGY DEVELOPMENT

Japan is at the forefront in advanced healthcare and technological medical devices research and development. In 2016, the Japanese medical device market was worth US$28.1 billion, and by 2020, it is expected to have increased to US$31.7 billion (EMERGO by UL). This ranks Japan as the fourth biggest market in the world for medical technologies (MAGIA2JAPAN, 2021). Japan has dedicated the Kanagawa prefecture to be a place for medical device and pharmaceutical companies, research organizations, and related academic institutions to collaborate to contribute to the fields of medicine, life science, and industry. The prefecture attempts to address the issue of population ageing and the low-birth rate in Japan while advancing in practical application in innovative medicine, IPS cells and robotic technology.

The Japanese have a continuous culture of improvement (kaizen) and dedicates funds for innovation, research & development activities. Universities as well as researchers invent new technologies to solve various people's health problem. These technologies are usually sophisticated, intricate, and advanced. The Japanese medical technology ecosystem is well organized, and the government actively promotes and funds joint collaborations with international academics or businesses. Nevertheless, Japan still imports around 49% of medical devices for its domestic use.

However, the regulatory process is lengthy and expensive for foreign companies to enter the Japanese market. The documents are mostly published in the Japanese language and the regulations imposes tight requirement and clinical standards for foreign manufacturers. The competition within the domestic market in Japan is challenging because Japan itself has a handful of leading consumer technology firms that create medical devices. The most intense competition is in therapeutic and surgical equipment, diagnostic imaging, biophenomena measuring and monitoring systems, dialyzers, home therapeutics, and endoscopes. The products' quality is most crucial when dealing with Japan. The country should never be seen as a test market, but rather as part of a comprehensive global expansion strategy.

ADVANTAGES AND SHORTCOMINGS

The problem inherent in the healthcare system is that funding of the system is very much dependent on the NHI premium paid within a certain year. The system can be sustainable as long as the proportion of workforce is higher than the proportion of the aging population. This system allows for equal access to all levels of society without any discrimination. However, with the current demographic trend of Japan, this system of financing will be burdensome on the government compared to the private sector. Even now, the government is supporting 84% of the healthcare expenditure.

The system also created problems of neglecting responsibility in accepting critical patients. This issue came to light in 2009, 2013 and even recently in 2021. Patients are turned away even up to 14 times ending up in the death of patients. The sense of

taking responsibility and being obligated to accept a critical patient is different between a public healthcare system and a private healthcare system. Also, the ambulances in Japan are burdened to arrange and negotiate for a healthcare facility to accept the patient whereas in a public healthcare system, the ambulance just acts as a transporter for the patient to the healthcare facility. A public healthcare facility can never reject any type of patients that come to them.

Without a general practitioner to do an initial screening before referring to a hospital or a specialist, patients may end up at the wrong specialist. Also, unnecessary queueing may build up without prioritising the most critical to the least critical. This is further seen in the abuses of the emergency departments and the ambulances from self-justified and self-assessment claims that one is in a critical condition. Nonetheless, this method does allow patients to resolve health issues quicker and doctors are also able to focus on a single health system to master and understand.

The NHI has also induced excessive and possibly unnecessary demand from the patients to see doctors as it has been recognized that an average Japanese citizen sees the doctor about 14 times in a year. This is rather surprising as usually people go to the see the doctor only when necessary. Possibly, the co-payment is not sufficient to act as a necessary tool to deter people from seeing a doctor unnecessarily. Nonetheless, the low cost is beneficial for the Japanese people as they are able to see the doctors anytime without worrying of being charged an expensive price.

MALAYSIA HEALTH CARE

The mission of the Ministry of Health is "to assist an individual in achieving and sustaining as well as maintaining a certain level of health status to further facilitate them in leading a productive lifestyle - economically and socially. This could be materialised by introducing or providing a promotional and preventive approaches, other than an efficient treatment and rehabilitation services, which is suitable and effective, whilst prioritising on the less fortunate groups" (MOH).

BACKGROUND

History of Public Health Administration (Ismail, 1974)

Malaysia only achieved independence in 1957. However, almost like the Japanese, the western specifically the British interference in the Malay States in 1874 led to the designing of a medical and health delivery system based on the western medical practice. The effort was a kickstart in the setting up of the system but after independence, health became a federal matter which led to the establishment of rural health services. During this time, 70% of Malaysians lived in the rural areas and shifting healthcare from its urban base to include the rural areas achieved the objectives of the government to improve the general health standards of the country.

Initially western medical practices were imported into trading areas and small treatment centres were established in Malacca, Penang, and Singapore (was a part of Malaya before 1963) to treat European employees and family. Upon dissolution of the East India Company, control and responsibility for the health treatment of

European government workers and private traders were transferred from the private sector to the British Colonial Office. This allowed the British to strengthen health protection provided in Malacca, Penang, and Singapore although the main recipients were Europeans. Later, Chinese miners were brought in to work in the tin mines. The Chinese brought with them traditional Chinese medicine and later in 1880, a small Chinese hospital of 28 beds was built in Kuala Lumpur.

As mentioned earlier, in 1874, the British interfered in the administration of the Malay states by self-electing an official resident in each state to advise the Sultans on administrative issues. Health was a jurisdiction of the government and the British resident advised on the building of general hospitals. The Kuala Lumpur General Hospital was built in 1884. With the turn of a new century, more hospitals were built. After the birth of the Federation of Malaya in 1948, the twelve states were further divided into smaller administrative districts. Currently there are seventy districts in Malaysia and either singly or in combination of two or three create one health district – making up in total forty-seven health districts. In 1958, a transfer of financial support, general direction (technical and administrative) was unified under the Ministry of Health. In the following years, more hospitals, clinics, and health centres were built under the five years Malaysia's development plans. The Ministry of Health now aims to provide fair, accessible, and quality health facilities.

Healthcare structure in Malaysia

Malaysia operates a two-tier health care system consisting of a government-based universal healthcare system and a co-existing private healthcare system. Compared to Japan, universal healthcare is provided by the public healthcare system and is almost free to all citizens of Malaysia or charged a very minimal fee that is very much affordable. Private healthcare services can be accessed by out-of-pocket payment or private insurance. Private insurance is voluntary on citizens depending on their financial capability. Thus, the pricing of the private healthcare services is not regulated by the Malaysian government and is left to the market forces to regulate.

Malaysian doctors are trained in their early years in the public healthcare system for their housemanship of two years. Expertise of doctors is built up from the experience of handling many public cases in the public healthcare system. Some of these doctors may leave later in their career to setup their own private clinics or serve at a private hospital to gain a higher monetary value. The private sector complements the public sector by offering a more comfortable hospital experience or a faster treatment option compared to the public sector. As a result, Malaysians have the option to choose if they want basic healthcare service yet of quality by the public healthcare system or want more comfort through the private healthcare system. However, to have access to the private healthcare system, they will need to enrol into a private insurance scheme or pay out-of-pocket. The downside of this healthcare structure is that the private healthcare system will not be accessible to those who cannot afford to pay compared to Japan where everyone can access all healthcare facility by paying the standard NHI fee levelled according to the employment capability and age. In terms of fairness, the Japanese system is more equal and fairer.

Malaysia imitates the British healthcare system in many ways except for the inexistence of an NHI system. Malaysia still sends students to be trained academically as a doctor in the UK and Ireland. Japan imitates more of a US administration by empowering prefectures to administer the healthcare system. Compared to Japan, to access the specialist or the hospitals, patients in Malaysia are required to meet a general practitioner to do an initial screening before referring the patients to seek further assessment from a specialist at a hospital or before hospital ward admission. This allows doctors to look at a patient in a holistic way before narrowing down the correct approach for further treatment and reduces unnecessary queueing at the specialist or the emergency departments.

FINANCING

The public healthcare system in Malaysia is financed entirely by the public funds. In year 2019 (see Figure 3), Malaysia spent RM64.3 billion (approximately ¥1.976 trillion) for healthcare expenditure which is 4.3% of GDP (MOH, 2021). With a population of 32.37 million, the healthcare expenditure per capita is roughly RM1,974 per person (approximately ¥61,000). This a huge difference compared to Japan, which spends ¥353,000 per capita for healthcare expenditure.

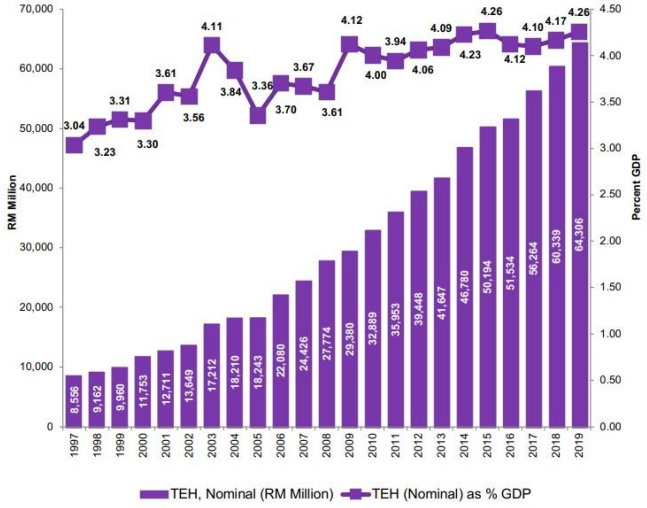

Figure 3: Total Expenditure on Health, 1997 - 2019 (RM million & percent GDP)

Source: (MOH, 2021)

MEDICAL TECHNOLOGY DEVELOPMENT

Malaysia is not at par to be compared with Japan. Malaysia only started developing its nation half a century later than Japan. Japan also has a very strong education system and a strong R&D culture. This allows the country to advance very much further than Malaysia. Nevertheless, Malaysia is a top leading medical device manufacturer for rubber gloves and catheters. In 2020, Malaysia's exports of medical devices reached a double-digit growth of 24.9% amounting to $7.31 billion. All in all, Malaysia provides 60% of the world market for rubber gloves and 80% of the world market for catheters.

Malaysia is advancing in the digital healthcare by launching a DoctorOnCall application which is the first and largest digital health platform in Malaysia. However, this is yet to grow and provide beneficial outcomes as it is still in its infant phase. Malaysia imports about 95% of medical devices and technology to support its domestic healthcare system. It has also come to light that over a third of medical devices in the public hospitals are aged 20 years old or being beyond repair. The private hospitals are more capable to purchase latest technological medical devices from the profit it generates. To build the economy further, Malaysia invites foreign direct investments to invest in private healthcare or medical device manufacturing.

ADVANTAGES AND SHORTCOMINGS

The current 2-tier healthcare system is financially sustainable for the future fiscal health of the country. The younger generation will not be burdened to support for the older generation healthcare expenditure. This allows for more fiscal space for the government to spend on other developments for the country. Also, the government does not have to regulate prices for private healthcare which may provide a trade-off towards the quality if it is highly regulated. However, the downside of not having a NHI structure is that it has discriminated the less affordable Malaysians from accessing the private healthcare system. The Malaysian government has recognized this shortcoming and launched a HI for the Bottom 40 (B40) called mySalam, but for the time being, it only provides for cash allowances from being hospitalised or after contracting a critical illness.

Nonetheless, therefore the Malaysian government continues improving the public healthcare system as it is still the first choice for most Malaysians for healthcare service. Malaysians tend to trust the public healthcare system more than the private healthcare system. However, Malaysians will opt for private healthcare when in need for an urgent treatment or a more comfortable healthcare experience.

Compared to Japan, the public ambulance service in Malaysia acts as a transporter and are not burdened to arrange for medical facilities to accept the patients they are transporting. With a general practitioner in place, there have been very low cases of patients abusing the use of ambulances and emergency departments to get a quick treatment. There is also the option of having treatment at the private healthcare instead. Also, public hospitals are obligated to accept critical patients and may face medicolegal if they turn away such cases.

COMPARISON

Japan spends a higher per capita expenditure for healthcare compared to Malaysia. This will be unsustainable in the future as Japan highly regulates the medical fees while experiencing low birth rates and an increasing aging population. It is difficult for the Japanese government to regulate the quality of services with the implementation of the fee regulating mechanism that it currently implements. The private sector has very low incentive to shoulder on more responsibility or becoming innovative in their healthcare service delivery. Compared to Japan, Malaysia can leave the quality of comfort and ambience to the private sector. Malaysia can focus its public funds to

provide the minimum standards of healthcare services that is accessible to all citizens. Furthermore, having a private healthcare system where its fees are left to the market forces, lures and invites foreign direct investment into the country to setup private hospitals and clinics as it is an opportunity for companies to generate profit. Malaysia also uses this advantage to advertise for medical tourism into the country. The Malaysian government only regulates the licensing and standards of the private health sector.

The act of regulating fees with a highly accessible healthcare system by the Japanese government have shun away efficiency and invited excessive and possibly unnecessary demand for healthcare. The government must shoulder this burden of higher costs which cannot be fixed in the absence of market forces. Most of the comparisons between both countries have also been addressed earlier in the advantage and shortcomings section and below is a table that portrays the comparison of both countries' healthcare financials and some health indicators.

	Japan	**Malaysia**
Spending	2019 44.4 trillion Japanese yen (10.7% of GDP) 85% government 16% private funds	2019 Rm64.3 billion (4.3 % of GDP) (1.976 trillion JPY) Public expenditure RM33.7 billion (52.5% government) (47.5% private funds)
Population/ Healthcare funding per capita	125.8 million people 353,000 JPY per capita	32.37 million people 1,974 MYR per capita (61,000 JPY per capita)
Life expectancy	2020 Male - 81.64 Female - 87.74	2020 Male - 72.6 Female - 77.1
Fertility rate	2020 - 1.34 (went below replacement level 1976)	2020 - 1.7 (went below replacement level 2012)
Number of facilities	8300 private hospitals 102.6 thousand clinics	154 public hospitals 250 private hospitals 1114 clinics
Funding	National Health Insurance	Government spending Private funds
Advantages	- All health facilities accessible to all - Government not involved in operational activities of providing healthcare	- Public facilities accessible to all at very low cost on citizens - Efficiency in private healthcare system - More choices for citizens - Government focus on regulating standards and public health system
Problems	- Tarai mawashi (ambulances being rejected several times) - Misuse of ED - Misuse of ambulances - Excessive demand – highest number of visits to the doctor compared to other OECD countries	- Private healthcare system is not accessible to the less affordable - Long queues at public healthcare facilities

LESSONS FOR JAPAN

Japan can try to employ a digital healthcare method for the future aging population to cut the cost of seeing doctors face-to-face. If there is a way for Japan to introduce some market forces to ensure value-based pricing of the healthcare services may prove beneficial for Japan to cut-out inefficiency. The way forward for Japan may be to use more technology and shift its dispersed population to satellite cities to further reduce the healthcare costs.

LESSONS FOR MALAYSIA

Malaysia has a lot to learn from Japan especially in the medical device technology area. However, the current two-tier financing system of Malaysian healthcare system is seen far more sustainable than the current NHI system implemented by Japan given that Malaysia also started to become an aging society from year 2012. The government can provide other incentives for the less privilege by providing extra income in cases of casualty and further improve the current public healthcare system to reduce the queueing, improve the quality further make it more accessible to all Malaysians.

CONCLUSION

Both Japan and Malaysia healthcare financing system have its own advantages and shortcomings. While in terms of medical technology, Japan is seen to be further ahead than Malaysia. Malaysia can serve as a cheaper manufacturing hub for Japanese manufacturers of medical devices and the earnings from the investment can be used to finance its aging society. At the end of the day, both countries will thrive better when we complement each other in strengths and weaknesses.

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