

**How to Cite:**

Hasan, A. A., & Ambrammal, S. K. (2022). The healthcare system: Policies and performance in India and ASEAN countries. *International Journal of Health Sciences*, 6(S4), 9960–9980. <https://doi.org/10.53730/ijhs.v6nS4.10877>

## **The healthcare system: Policies and performance in India and ASEAN countries**

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**Abstract**---People seek health because it helps them achieve and maintain happiness. The length of life (longevity) and the quality of life are characteristics that can describe health. A well-functioning health system is predicated on having skilled and motivated health professionals, a well-maintained infrastructure, and a consistent supply of medications and technology, supported by enough financing, solid health plans, and evidence-based policies. Every nation, regardless of its public, private, or mixed health care system, confronts barriers and challenges with consideration to quality, quantity, delivery, and cost of services. The amount of economic growth and the political framework in existence determine how health care systems differ from country to country. Southeast Asia has a tremendous social, economic, and political diversity within countries. Brunei, Singapore, Malaysia, Thailand, the Philippines, Indonesia, Vietnam, Laos, Cambodia, and Myanmar are the ten countries that make up this region. The area comprises countries ranging from economic powerhouses like Singapore to impoverished economies like Laos, Cambodia, and Myanmar is home to more than half a billion people. Although cross-country comparisons between health systems in high-income countries are common, this study was carried out to compare India with Southeast Asian countries (ASEAN), focusing on the performance of the healthcare system across all dimensions. Our research aimed to highlight the strengths and weaknesses of ASEAN's health-care system in contrast to India's to improve health care services, reinforce health care workers and achieve universal health coverage.

**Keywords**---health care system, health care services, universal health coverage, performance, policies, India, ASEAN.

## **Introduction**

Health systems worldwide tend to reflect the culture, economy, and history of the countries in which they evolve. Health is regarded as one of the most fundamental human rights, and therefore everyone should get access to the resources required for health treatment. The characteristics such as the length of life (longevity) and the quality of life describe health. A health system encompasses not just the pyramid of publicly owned facilities that provide personal health services, but also includes individual actions, environmental circumstances, societal factors, education, wealth, and genetics as other determinants. Moreover, health care significantly fosters people's overall physical, mental, and social well-being worldwide. When done successfully, it may contribute significantly to a country's economy, development, and industrialization. The World Health Organization (WHO) defines a health system as "all institutions, people, and actions with the primary goal of promoting, restoring, or maintaining health."(WHO,2000) This definition covers initiatives to impact health determinants and more direct acts to promote health care.

A well-functioning health system is predicated on having skilled and motivated health professionals, a well-maintained infrastructure, and a consistent supply of medications and technology, supported by enough financing, solid health plans, and evidence-based policies. The economic growth and the existing political framework determine how health care systems differ from country to country. For example, the disparity between Asian and European countries is often regarded as the greatest in the world due to their sophisticated health-care systems. In contrast, Mali and Cambodia are the poorest countries in the world, where poverty, hunger, and poor hygiene harm people's lives (WHO,2015).

Health system planning in a few countries is distributed among private health care providers in a competitive market. In a few other countries, Governments, trade unions, charities, religious organizations, and other coordinated bodies work together to deliver planned public health care services targeted to the populations they serve. For instance, the WHO, the United Nations Children's Fund (UNICEF), and the United Nations Development Program (UNDP) are the leading international organizations providing technical and financial assistance to improve the health status of people in Myanmar (Latt et al.,2016). In addition, in Malaysia, some private hospitals are created as charity institutions where the price discrimination is practiced by charging a premium to those who can afford it for cross-subsidization to the needs (Kek Lok Si Charitable Hospital is an example).

Every nation, regardless of its public, private, or mixed health care system, confronts barriers and challenges with consideration to quality, quantity, delivery, and cost of services. In addition to helping poor countries in Southeast Asia reform their healthcare systems by studying those in other, more developed countries in the same region of Asia, this study aims to helping developing countries in Southeast Asia reform their healthcare systems by studying those in other, more developed countries in the same region of Asia, this study aims to help India improve its performance in the health care sector and move closer to achieving universal health coverage.

## Literature review

While desired and contentious, developing a brief measure of system performance entails achieving the three key aims of improved health, increased responsiveness to population health requirements, and fairness of financial contributions (Wibulpolprasert S, 2001). Understanding the quality and the effectiveness of healthcare systems necessitates the capacity to track the same people over time as they undergo medical procedures, get treatments, improve or deteriorate their health, and live or die. It is also necessary to comprehend the distribution of healthcare facilities. In low- and middle-income countries, strengthening health systems and achieving universal health coverage is critical to addressing significant challenges, such as demographic and epidemiological transitions, financial protection, and meeting public demand for improved health outcomes (Samb B et al., 2010). Many low and middle-income nations have pledged to achieve universal health coverage by increasing health spending and taking other steps to enhance their health systems (United Nations Department of Economic and Social Affairs, 2017). However, health system performance varies widely, and countries with similar levels of development differ in their ability to gain key health policy goals (Murray CJL and Frenk J., 2003). Evaluating health care system performance is a significant motivator of progress (Berman P and Bitran R., 2011). It provides a key method for identifying regions of high and deficient performance, allowing efforts to strengthen and improve the efficacy of health systems to attain universal health coverage, as well as a chance for benchmarking and cross-country learning (Alshamsan et al., 2017).

The WHO (The World Health Report 2000) measured the efficiency of 191 nations' health systems using five performance measures which are (1) Quality, (2) Access, (3) Efficiency, (4) Equity, and (5) Healthy lives. According to the WHO, the most satisfactory overall health care is provided by France, Italy, Spain, Oman, Austria, and Japan (Suraratdecha and Okunade., 2006). Although cross-country comparisons of health systems in high-income nations are common (Osborn et al., 2014), few studies have been conducted that compare and include low- and middle-income nations, particularly throughout the healthcare system's domains (Alshamsan et al., 2017).

While desired and contentious, developing a brief measure of system performance entails achieving the three key aims of improved health, increased responsiveness to population health requirements, and fairness of financial contributions (Wibulpolprasert S, 2001). Understanding the quality of health care and the effectiveness of health-care systems necessitates the capacity to track the same people over time as they undergo medical procedures, get treatments, improve or deteriorate their health, and live or die. It is also necessary to comprehend the distribution of health-care facilities.

A study was conducted by Alshamsan, et al (2017) to assess and compare health system performance across six middle-income countries that are strengthening their health systems in pursuit of universal health coverage. These Six middle-income countries are: China, Ghana, India, Mexico, Russia and South Africa. The study finds that some of these nations have made steps toward universal health care, including primary health system changes and significant increases in health

spending. For example, Ghana introduced a national health insurance scheme in 2004 to provide financial protection to its citizens (Mills A, et al 2014) and China embarked on systematic reforms in 2009 to improve its social insurance scheme (Yip WC-M., et al 2012). In contrast, there were significant differences in patient-centeredness measures, especially in India and South Africa. For example, in India and South Africa, the poorest groups scored lower on the majority of measures in both inpatient and outpatient settings than affluent populations (Alshamsan., et al 2017). The study emphasized that building health systems by obtaining universal health coverage is critical in low- and middle-income nations. Beside this, it addressed demographic and epidemiological shifts, boosting population financial security, and fulfilling public demand for better health outcomes all priorities in these nations (Samb B, et al 2010). In parallel, assessing each country's health care system performance helps to improve its services. Moreover, it provides an essential method for identifying regions of high and poor performance, allowing attempts to enhance and raise the efficacy of health systems to attain universal health care, and benchmarking and cross-country comparisons (Alshamsan et al., 2017).

Another study by Bitton, et al (2016) highlighted that the development of community-oriented primary care in South Africa, India, and the US in the mid-twentieth century showed the early potential of solid PHC systems to produce promising population health results. However, vanguard programs were not met with uniform support for a common conceptual understanding or even shared definition of PHC. As a result, primary health care is scarce in low and middle-income nations, and health-care outcomes are poor. Also, the weakness of primary health care leads to increase in non-communicable diseases (Bitton et al., 2016). With converging dynamics such as rising health expenses and the growth of non-communicable illnesses, health system officials worldwide recognize the critical need for developing PHC to meet these changing requirements. (Primary Health Care Performance Initiative, 2016). It is especially true in low- and middle-income countries (LMICs) dealing with the "double burden" of communicable and non-communicable diseases while moving from external donor aid to long-term domestic finance. (Bitton et al., 2016).

According to Veillard et al (2017), the Ebola pandemic 2014 in West Africa highlighted the severe shortage of health care infrastructure, human resources, and essential supplies in affected countries. It also highlights the poor access and low quality of health care, leading to a lack of trust and connection between systems and the public. In the same year, the WHO, the World Bank Group, and the Bill & Melinda Gates Foundation, in collaboration with Ariadne Labs and Results for Development, launched the Primary Health Care Performance Initiative (PHCPI), to catalyze improvements in primary health care (PHC) in 135 low- and middle-income countries (LMICs) in order to accelerate progress towards universal health coverage. The PHCPI conceptual framework advances knowledge of PHC system performance by placing more emphasis on the function of service provision (Veillard et al., 2017).

A study by Imani (2016) shows that despite considerable disparities in different nations in the financing, organization, and delivery of health services, all countries face more or less similar issues. These issues include ensuring public

access to health care, improving services, developing and improving treatment results, lowering public costs, improving performance, better responsibility and accountability in the health care system, more public participation in health care decision-making, and reducing barriers between health and social care.

Although cross-country comparisons are often conducted between health systems in high-income countries (Osborn R et al., 2014), through this study, we compare India with Southeast Countries in Asia (ASEAN) particularly looking across the domains of the healthcare system performance. Our study highlighted ASEAN's healthcare system, regardless of its strengths and weakness, compared to India's health-care system. Southeast Asia is an area with tremendous social, economic, and political diversity, both across and within countries. We have ten countries in the ASEAN group, including Brunei, Singapore, Malaysia, Thailand, the Philippines, Indonesia, Vietnam, Laos, Cambodia, and Myanmar. More than half a billion people live in the region, from economic powerhouses like Singapore to poorer economies like Laos, Cambodia, and Myanmar (UN Population Fund. State of world population, 2009). Southeast Asia's long history, as well as modern industrialization and globalization, have presented significant difficulties to the region's healthcare systems (Chongsuvivatwong et al., 2011).

In the next section, we review significant highlights of healthcare systems in some ASEAN countries whose healthcare system performance is better than others and India to see what makes them different in providing the health services. Low quality of care could be due to a lack of incentives in the health system or information problems in the health care market, combined with a lack of accountability among providers and poorly functioning governance systems in the health system, in addition to providers' lack of capacity or knowledge in such sittings (Mohanani, 2016). Therefore, it is necessary to recognize the process of delivering health care services and the factors that can limit providers' effectiveness. Therefore, we have observed and studied the healthcare policies and performances in each selected country to identify each country's strengths and weaknesses.

## **Methodology**

The study investigates the performance differences among the ASEAN countries and India in health care services. To this end, we followed a descriptive and analytical study that compares India's and Southeast Asia countries (ASEAN) health care systems, focusing on the health service provider organization, policies, and health care system performance. This research is a qualitative one that gets the results through exploration of the findings on the data analysis and literature reviews. In this study, eleven countries, including India, Thailand, Singapore, Viet Nam, Malaysia, Indonesia, Cambodia, The Philippines, Myanmar, Brunei and Laos. The study was carried out in two stages. The first stage describes each country's profile concerning their highlights in the health care sector services. Then, we analyzed their initial and current position in their health sector indices. The second stage analyzed each country's performance in various indicators like the number of hospital beds, nurses, and medical doctors per 10,000 population. These data are essential in the health care system in any country due to their significant role in providing healthcare services and people's demands. The

information of selected countries was collocated from “The World Health Organization (WHO) website”, “World Bank data base website”, “Health system review ” “international profile of health care”, in English.

The data analysis is done through the estimated variables of health care workers and hospital bed numbers that help to highlight which country is more developed and which is poor concerning their health status. We chose ASEAN countries because of their efforts to achieve universal health coverage and their attempts to reform their health care services. Thailand, Singapore, and Brunei have achieved universal health care, with Singapore establishing itself as a regional medical center of excellence, while Malaysia and Viet Nam are developing strategies to do so. However, the efforts of Southeast Asia’s poorest countries to strengthen their healthcare systems are noteworthy. India is working toward universal health coverage and the selected countries may be able to learn from one another depending on their experience and achievements.

### **A review on the health profile of selected countries**

In this section, we reviewed profiles of India and Southeast Asian countries. This region has ten nations: Brunei, Singapore, Malaysia, Thailand, the Philippines, Indonesia, Vietnam, Laos, Cambodia, and Myanmar. The Association of Southeast Nations is known collectively as (ASEAN). Southeast Asia has a great deal of social, economic, and political diversity. One of the Indian foreign policy’s main pillars is its connection with ASEAN. With the "Act-East Policy" declaration during the 12th Summit in 2014, the India-ASEAN Strategic Partnership gained new vigor. It clearly expressed India's intention to step up its engagement with the ASEAN Member States. India and the ASEAN nations frequently collaborate in trade, the environment and food, space exploration, and the economy. According to secondary data from the World Bank and WHO websites, we focused on the health system component to examine the policies and performance in each country. In addition, literature reviews that discuss their areas of strength and weakness in health care services.

#### **India**

India is home to global leaders in health-care innovation and quality. We have many examples to show the breadth and quality of the health care system in the country. For example, the chain of Narayana Hospitals offers low-cost and high-quality cardiovascular surgery. Similarly, the Aravind Eye Care System performs a high volume of cataract surgery that benefits millions of low-profile communities. Further, the country could exhibit its strength through its internationally renewed medical teaching institutions like the All-India Institute of Medical Sciences (Le H-G et al.,2016; Khanna et al.,2011). In India, Universal Health Coverage (UHC) through increasing access, improving quality and decreasing the cost of health care services is the stated goal of National Health Policy 2017. (Ministry of Health and Family Welfare, Government of India., 2019). Even though India has witnessed fast economic progress in the twentieth and twenty-first centuries, it exhibits two worlds simultaneously (Partha De et al.,2012). On the one hand, the urban society has seen tremendous economic expansion and wealth. On the other hand, many people have been left behind due

to the lack of adequate social services, work possibilities, and social security. This disparity has grown significantly over time, particularly in health care (Partha De et al.,2012).

The private health-care sector in India is a critical component of the country's health-care delivery system (Bhat.,1993). Institutions in this sector respond to the health needs of both urban and rural populations through an extensive network of health care facilities delivering services in many systems of medicine and through numerous organizations (Bhat,1993). Despite the widespread public infrastructure, more health services are provided by the private sector than by government facilities (Chatterjee 1988). However, in India health care expenditure is dominated by the private sector spending that denies adequate access to the poor (Rao et al., 2003) In addition, the rapidly rising burden of chronic illnesses in India makes poor health-care quality a concern for health policy (Manoj et al., 2016). Noncommunicable diseases (NCDs), mental health disorders, accidents, and injuries all addresses the concerns (Institute of Health Metrics and Evaluation, 2019). In addition, India has a severe human resource deficit in the health sector because competent health personnel are scarce, and the labor is concentrated in cities (Mohan Rao et al., 2012). As a result, it's difficult to get skilled health personnel to rural, isolated, and underserved locations (Rao et al., 2012). Therefore, India has not achieved universal health care yet.

### **Thailand**

Thailand is internationally known for its success with universal health coverage (UHC) policy and health development (Kim JY,2014). Thailand is one of the ASEAN countries that have created a robust healthcare system throughout the years (Jitsuchon S.,2012). The backbone of health development in the country is the district health system, which consists of health centers and a district hospital. With the universal coverage in 2002, the country covers the whole 66.3 million Thai population (Sumriddetchkajorn et al., 2019). Many factors together contribute to the success of public health care in Thailand. Community involvement in health, the collaboration between government and non-government organizations, integration of the PHC program, decentralization of planning and management, resource allocation in favor of PHC, management and continuous supervision of the PHC program from the national down to the district level are naming the few (Nitayarumphong.,1990). PHC in Thailand is becoming popular due to its coverage in health education, nutrition, child care and family planning, adequate and safe water & food supply, sanitation, immunization, prevention and treatment of locally endemic diseases, and the provision of essential drugs. (Nitayarumphong.,1990).

Malaria, tuberculosis, pneumonia, and gastrointestinal infections all reduced fivefold between 1958 and 1997, with yearly reductions of 32 fatalities per 100 000 population, owing to decreases in malaria, tuberculosis, pneumonia, and gastrointestinal infections (Tangcharoensathien et al., 2018). Although, Noncommunicable diseases (NCDs) accounted for 71,3 percent of global mortality in 2015, necessitating strong policy responses in primary prevention as well as the control of commercial determinants of health, such as cigarettes, alcohol, and unhealthy diets (Kickbusch et al.,2016).

## Singapore

Singapore's healthcare system is well-known for its efficiency and breadth of coverage (Yu et al.,2008). It is accomplished by combining government, people, and employers' health care system. As a result, the WHO ranked the healthcare system as the best in Asia (WHO, 2010). Three pillars form the foundation of Singapore's healthcare concept. The first is to develop a healthy population by emphasizing prevention and encouraging healthy behaviors. The second, is the "3M" (Medisave, Medishield, and Medifund) which encourages citizens to take responsibility for their health. Finally, the government manages the supply side of healthcare services. It gives substantial financial assistance to public health care institutions to keep healthcare costs down (Nizar and Chagani.,2017). Moreover, the government has an active role in controlling healthcare services supply and costs. Because the system is built on numerous unique qualities, Singapore is a model that is difficult to imitate in other nations (Yu et al.,2008). Singapore's healthcare outcomes are comparable to those of other industrialized countries, given that health-care spending accounts 4% of GDP, compared to 17.9% in the United States and 9.6% in the United Kingdom (WHO,2013). Singapore's life expectancy from birth in 2011 is 82 years for both men and women, compared to 75 years for the region and 68 years for the entire world. (WHO,2013).

Malaysia: - Malaysia's dual healthcare system that includes both public and private services. The government offers health care to the country's citizens through public hospitals and clinics around the country (Chai et al.,2008). It is observed that partnerships between the public and private sectors continue in the administration of health care, with traditional medicine complementing western medicine in medical therapy (Susan et al., 2011). However, apart from the size of the hospitals, there are differences in the services provided. For example, small district hospitals, which provide general medical and nursing care, are staffed by medical officials and other experts. On the other hand, larger district and regional hospitals, which offer a wide range of specialty treatments via referral systems, are easily accessible to the general population (Juni.,1996). However, despite Malaysia's efforts in socioeconomic development plans, there are still difficulties of equality and accessibility, particularly for indigenous peoples, rural residents, and the poorest of the poor (Liow.,2008). Quality in terms of health services, personnel, and equity in terms of geographical location, pricing, and tariff accessibility, demonstrate this. (Economic Planning Unit (EPU),2001-2005). The Infant Mortality Rate (IMR) in Malaysia is 11 per 1000 live births, while it is 48 per 1000 live births in Indonesia and 29 per 1000 live births in Thailand. When compared to the IMRs of Singapore (5/1000 live births), the United Kingdom (7/1000 live births), and the United States (7/1000 live births) (Merican et al.,.2002

Viet Nam: -The Vietnamese health care system is divided into four administrative levels: the central, provincial, district, and the commune level (Duc-Cuong et al.,2010). The Ministry of Health (MOH) is the highest government entity at the national level. Provincial hospitals, maternity and child healthcare/family planning centers, and secondary medical schools exist at the provincial level. Commune health centers provide a range of essential services, such as: mother and child health care, family planning, immunization and treatment of common



ailments (Duc-Cuong et al.,2010. There is a combination of public and private healthcare in the system. Although the number of private hospitals is growing, just 6% of all healthcare institutions were privately operated in 2014 (Ministry of Health, Vietnam. Health statistical yearbook 2014. Vietnam; 2016). Moreover, private hospitals provide more than 60% of outpatient treatments and have established themselves as an integral part of the national health system. (Oanh et al.,2017).

Healthcare reforms and annual economic growth of roughly 7%, have resulted in a slew of excellent health outcomes (Duc-Cuong et al.,2010). However, due to a lack of resources, specific system faults were reported in addition to those accomplishments. The micronutrient deficiencies, the low birth weight, vitamin A deficiency, and parasitic infections in children are common incidents reported in the country (Ministry of Health-Vietnam; (MoH) and the Health Partnership Group (HPG),2008).

Indonesia: - Indonesia, being one of the ten ASEAN members, contributes to the success of the ASEAN Economic Community (AEC), notably promoting cross-border free trade and services. As a result, preparing Indonesia's health-care system and services, as well as human resources for health (HRH), appears to be necessary (Joko and Yubin., 2015). Both public and private sectors offer health care services in Indonesia. The government funds hospitals and introductory health care clinics. In contrast, private hospitals and clinics are managed by private firms, individuals, Islamic and Christian groups. State hospitals occasionally construct private wings in order to earn revenue to fund public hospitals that provide health treatment to the poor (Linda Shields and Lucia Endang Hartati,2003). Notably, the private sector provided 62.1 % of health services, while the government provided 37.9% ( Suryanto et al., 2016). Noncommunicable diseases (NCDs), followed by communicable diseases, are becoming a serious concern and burden for Indonesia. This increased illness load is linked to high levels of life lost owing to early death and disability, indicating the need for additional progress ( Suryanto et al., 2016)

## **Myanmar**

Myanmar's healthcare system has changed dramatically due to recent political and administrative development (Latt et al., 2016). Despite the healthcare systems being a combination of public and private sectors, the Ministry of Health remains the primary supplier of healthcare services in Myanmar (Ministry of Health, Myanmar, 20014). Primary healthcare and essential health services, nutrition promotion, environmental sanitation, maternity and child health, school health, and health education are within the Department of Public Health (Latt et al., 2016). Beside this, many international organizations such as the WHO, the United Nations Children's Fund (UNICEF), the United Nations Development Program (UNDP), and the United Nations Population Fund (UNFPA) provide technical and financial assistance to improve the health status of Myanmar (Latt et al, 2016).

In addition to this foreign non-governmental organizations, Myanmar Women's Affairs Federation (MWAFF) and the Myanmar Red Cross Society also offer

healthcare services to the country (WHO Global Health Observatory (GHO) data, 2014). Laos: - Inadequate medical facilities that are often too far away from isolated village communities, as well as a lack of access to the most up-to-date drugs or disease therapies, make it difficult to treat some health disorders in Laos adequately (WHO, 1993; Country Strategy Note, 1996). Malaria, viral diseases, and a high newborn mortality rate are prevalent in the country (WHO, 1993; Chape, 1996; World Fact Book, 2005). However, in many Lao communities, traditional remedies have a long history and continue to be helpful instruments for treating ailments (Baird, 1995; Southavong., 1997 and Condominas., 1998).

### **Cambodia**

Cambodians have one of the lowest health-care systems in South East Asia (ORC Macro 2000). Patients seek health treatment outside the house from a range of traditional healers, allopathic private and public health providers (Robert and Fred.,2003). Moreover, nearly two- thirds of the population use self-medication and other private services , despite these methods being of questionable quality (Ramage I.,2001). Most government health institutions in Cambodia malfunctioning. This malfunctioning is owing to the lack of funding, ineffective administration, inefficient resource allocation, and most importantly, low worker motivation (Robert and Fred.,2003). This construction of a healthcare system has taken less than a decade from a near-zero starting point. The Health Sector Strategic Plan 2008–2015 (Ministry of Health,2008) and the associated Health Sector Review (Ministry of Health,2007) acknowledge that healthcare usage has improved, but the progress came from a poor starting point. Maternal mortality rates have remained consistently high, demonstrating the poor usage, or capability of the health center and hospital referral services (John et al., 2009). The average life expectancy at birth is just 56.4 years, with men living 54.4 years and females living 58.3 years. In addition, the infant mortality rate is predicted to be 95 per 1,000 live births, while the under-five death rate is 124 per 1,000 live births, and the maternal mortality rate is 437 per 100,000 live births (NIS et al.,2001).

### **The Philippines**

The Philippines health care is supplied by the government, private, charitable, and self-help sources (David R. Phillips.,1986). The Philippine health system has severe problems in addressing inefficiencies and health disparities caused by unorganized administration, fragmented health finance, and decentralized and heterogeneous service delivery (The Philippines Health System Review,2018). The country is, however; like rural Malaysia and Indonesia has a long and varied herbal medicine tradition, as well as a large number of healers, many of whom are sensitive and experienced individual who, despite their lack of formal training, are respected for their abilities in treating general ailments (David R. Phillips.,1986).

### **Brunie**

All medical and health-related services are offered free of charge to Brunei nationals, according to the Ministry of Health. Brunei's public health system includes 15 health centers, 10 clinics, and 22 maternity and child health clinics.

In addition, there are two private hospitals provide good healthcare services (Elizabeth, 2014). Currently, according to the Brunei's Health Ministry website, the number of private hospitals remain same till now. Brunei's health indices are generally good. In Southeast Asia, life expectancy is the second highest and continues to climb. In 2011, the average life expectancy was 78.1 years, up from 62.3 years in 1960. In addition, the Infant Mortality Rate (IMR) in 2012 was 5.6 deaths per 1,000 live births, down from 42.3 deaths per 1,000 live births in 1966. (Health Ministry, 2013) (2013, Oxford Business Group).

Brunei, like many other wealthy countries, has made tremendous progress in eliminating infectious diseases like malaria, but it has witnessed an epidemiologic shift toward chronic disease, which requires health system design and budget allocation (Elizabeth, 2014). For instance, heart disease (15.7 %), diabetes mellitus (9.8 %), and cerebrovascular illnesses (9.2%) were the next three leading causes of death in Brunei, after cancer (19 %). However, Brunei has been successfully achieved universal health coverage (UHC) (Tangcharoensathien et al., 2011). In addition, Brunei's population is not evenly dispersed between its four districts; healthcare services are also unevenly distributed. For example, the flying medical service serves the rural district of Temburong, which has only one hospital (Ministry of Health, 2013). Therefore, Bruneian citizens residing in this district may have unequal access to healthcare services when compared to citizens residing in the capital district where numerous healthcare facilities are located (Elizabeth, 2014).

### **Data Analysis**

The tables and figure below show how many hospital beds are available in each country's health-care system, which is essential in highlighting the country's health-care system's deficiencies and availability of facilities. In addition, data on the number of health-care workers, such as doctors and nurses, was gathered to determine which countries have enough healthcare personnel and which countries have a shortage. The data collected from the World Health Organization (WHO) and World Bank website.

The foundation of each nation's healthcare system is the availability of hospital beds, a sufficient number of doctors, and qualified nurses. There should be equal distribution of the resources in order to meet people's health needs. Additionally, those elements are crucial in times of crises and epidemics to prevent workload and reduce the number of morbidities and fatalities. The more medical facilities and health professionals there are, the less casualties and fatalities there will be during pandemic.

### **Hospital beds (per 10,000 population)**

Hospital bed capacity is an essential indicator of the health care system as it reflects a country's shortage or surplus of hospital services. In addition, the service is considered the first-line facility for providing treatment and services to people during emergencies. For a wide spectrum of patients with various diseases and treatment regimens, hospital beds are built and designed to offer safety, comfort, and mobility. The ratio of beds per 10,000 people is used as a generic

health infrastructure measure. Moreover, hospital bed usage is significant because it can reveal how efficiently a healthcare organization uses its resources and treats patients.

According to the latest update by the World Health Organization, the proportion of hospital beds in India is about 5.3 per 10000 population (WHO 2017). This number seemed to be the lowest compared to other countries in Table 1. However, this number doesn't link with people's demand for the health care system in the world's second-most populous country. Therefore, we believe that the supply side factor put India's health care system in crucial situation to cover all patients' facilities and services needs during emergencies. With its vast population, Indonesia has 10.4 hospital beds for each 10000, which is inefficient in covering people's demands. Variations in hospital bed capacity are also quite significant across ASEAN countries. Nations according to the last update like Thailand has 21:10000, Singapore has 24.86:10000 and Brunie has 25.8:10000 which shows the health care system responds positively to their citizen's health demands. In a few other countries, such as the Philippines has 9.9:10000, Cambodia has 9:10000 and Malaysia has 18.7:10000 which is less and don't cover people's needs for a good treatment and services.

The estimated value of hospital beds in Vietnam according to the last update in 2013 is 31.8:10000, the number either is decreased or increased is not available. Therefore, we can state that this number is still not enough to cover people's demands. However, Lao PDR (Laos) has the lowest number which is 15:10000 according to the last update by WHO in 2012. As a result, Thailand, Singapore and Brunie have the highest number of hospital beds comparing to other nations. In parallel, Laos, Cambodia, The Philippines and Myanmar are the lowest. Countries with huge population like India and Indonesia need to increase the number of hospital beds to cover people's demands of health care. In addition, Thailand, Singapore and Brunie are covering their people health's demands by increasing the number of bed hospitals yearly and improve capacity. As a result, a lack of hospital beds during emergencies or pandemics has a significant impact on people's lives and society's response, potentially leading to an increase in the number of deaths.

We observed that Singapore, Thailand, Brunie, and Viet Nam have the highest hospital bed numbers compared to India and other ASEAN countries according to the last update by WHO. However, the continuing pandemic has revealed how inadequate the healthcare systems are in several nations. India, regrettably, was one of them. Most states in India struggled in the initial days of the Covid-19 outbreak to provide patients with enough hospital beds and intensive care units (ICUs). Comparing the number of beds to the population, India has one of the worst records in the world. Therefore, increasing the number of hospital beds and medical facilities in such countries will aim to avoid bad consequences may occur in future.

Table 1: Hospital beds (per 10 000 population)

Country	2005	2012	2013	2014	2015	2016	2017
India	4.1	4.9	4.9	5.2	5.8	4.8	5.3

Indonesia	N/A	8.3	9.9	9.4	9.8	9.9	10.4
Thailand	21	N/A	N/A	N/A	N/A	N/A	N/A
Cambodia	N/A	N/A	7	N/A	8	9	N/A
Vietnam	N/A	N/A	31.8	N/A	N/A	N/A	N/A
Brunei	25.8	24.1	24.2	24.25	27.7	27.56	28.5
Malaysia	N/A	19	N/A	N/A	18.6	16.19	18.77
Myanmar	N/A	9	N/A	N/A	N/A	10.4	10.44
Philippines	N/A	10.5	9.9	9.9	N/A	N/A	N/A
Singapore	N/A	N/A	21.86	22.45	23.95	24.84	24.86
Laos	N/A	15	N/A	N/A	N/A	N/A	N/A

Sources: Data is obtained from the Global Health Observatory (GHO) and World Health Organization (WHO) k

N/A indicates the Unavailability of data.

### **Medical Doctors (per 10,000 population)**

The number of medical doctors per 10000 population in each selected countries is another indicator of development. It is one of the most effective indicators for evaluating a country's health-care system. The source of health personnel is a critical component of any country's health care system. They are the system's backbone because of their role in delivering medical care to people in emergencies. The number of medical doctors and creating a balance in their distribution across rural and urban areas are critical to the quality of health care services. Table 2 shows the estimated number of medical physicians per 10,000 people in ASEAN nations and India.

In comparison to Singapore, Malaysia and Thailand. India has the lowest number of medical doctors, affecting the efficiency of health care system in the country. The lack of medical doctors, nurses or paramedical is one essential problem of health care system in India. However, India had successfully achieved WHO recommended doctor population ration in the year of 2018 as the ratio reached to 6.86:10000. On the other hand, Indonesia with its huge population shows an increasing in the number of medical doctors per year. According to the last update by WHO in 2020, the number of medical doctors per 10000 reached 6.23. Variations in medical doctors' numbers are also quite significant across different countries, Nations like Thailand, Singapore and Malaysia have more medical doctors than any other ASEAN countries and India. Whereas, Vietnam, Myanmar and Cambodia show less number of doctors per ten thousand population.

The estimated value of medical doctors per 10000 in Philippines is 7.73 in 2020 which shows the weakness of health care system in this country. Also, Indonesia has the lowest number of medical doctors. The number reached 6.23:10000 which does not link with its huge population and people's demands. In addition, Laos has 3.54:10000 according to WHO data in 2020. As a result, Malaysia, Singapore and Thailand have the highest number of medical doctors per 10,000 comparing to India, Laos, The Philippines and Indonesia which are the lowest countries in number of medical doctors per 10,000.

Table 2: Medical Doctors (per 10 000 population)

Country	2014	2015	2016	2017	2018	2019	2020
Brunei	15.11	17.81	N/A	16.09	N/A	N/A	N/A
Cambodia	1.93	N/A	N/A	N/A	N/A	N/A	N/A
India	N/A	N/A	N/A	N/A	6.86	N/A	7.35
Indonesia	N/A	2.74		3.77	4.24	4.65	6.23
Malaysia	15.26	15.36	16.32	18.59	19.1	21.15	22.86
Myanmar	N/A	N/A	6.2	8.64	6.77	7.37	N/A
Philippines	N/A	N/A	N/A	6	N/A	N/A	7.73
Singapore	21.23	22.28	22.94	23.45	23.91	24.6	N/A
Thailand	N/A	4.65	4.45	8.08	8.05	9.19	9.5
Vietnam	7.83	7.96	8.28	N/A	N/A	N/A	N/A
Laos	4.95	N/A	N/A	3.73	N/A	N/A	3.54

Sources: Data is obtained from the Global Health Observatory (GHO) and World Health Organization (WHO) k

N/A indicates the Unavailability of data

### Number of Nurses

Today's nurses are vital members of society due to their significant role in promoting health, educate the public and their patients on how to avoid illnesses and injuries, take part in rehabilitation, and offer care and support. The modern definition and functions of nurses can only be understood via experience, observation, and the perspectives of people. As advocates for patients, the public, and health promotion in addition to meeting the needs of the current COVID-19 patient population, nurses currently play a significant role throughout the world. The health of patients is continuously evaluated by nurses. Doctors can offer better diagnosis and treatments because of their constant presence, observational abilities, and attention. Because a watchful nurse recognized the early warning signals of an impending crisis, such as cardiac arrest or respiratory failure, many lives have been spared.

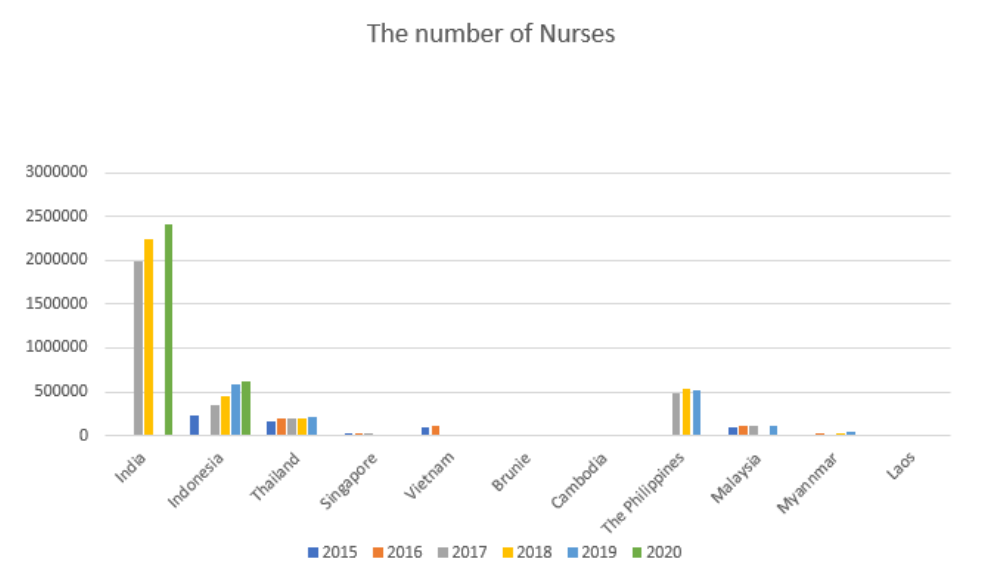
The number of Nurses increases yearly for each country, except Cambodia. The number of nurses has decreased since the last update. India has been showing a few enhancements and increasement regarding the nurse's number, reaching 2,412,621 in 2020. The number of nurses has reduced due to the spread of COVID-19 as a result of their response and first-line patient care during the epidemic. Therefore, the lack of a health workforce will dramatically effect on performances of health care system in India. However, India needs to empower and increase the number of nurses to avoid the shortage and to cover health care system needs in response to any kind of emergencies in future.

The coverage of nurses' numbers is useful as an indicator to highlight the sufficient needs of health workforce for each country and their distribution. For instance, in some countries like Indonesia showed 615,829 of nurses. Most of health care workers in Indonesia intend to work abroad which create put the country in critical position to avoid the shortage and meet people's health care services demands. On the other hand, most of health care workers intend to work

in urban areas which can lead to a tremendous problem to the health care system due to misdistribution of health workforce in each country.

Because of their numbers (191,218 nurses in 2016), credentials, geographical distribution, and wide-ranging contributions to public health, patient care, and clinical services, nurses are critical to Thailand's health system. In 2019, the number of nurses in Malaysia was 111,324. The Minister of Health in Malaysia employs and deploys doctors, nurses, pharmacists, dentists, and other allied healthcare personnel to different healthcare facilities around the nation, ranging from rural clinics to district hospitals to tertiary specialized hospitals (Dr. David K. L. Quek.2014). On the other hand, the Philippines witnessed low number of Nurses in 2019 compared with other countries. In general, health services in the Philippines are inaccessible due to a lack of or insufficiency of workers and inadequate health facilities, particularly in Rural Health Units. Cambodia has 9,483 nurses in 2019, the lowest number compared to any other country. Brunei had 2,530 nurses in 2018 and Laos had 6,981 in 2020 according to WHO data base.

Figure 1: Number of Nurses



Source: The Global Health Observatory (GHO)- World Health Organization (WHO)- 2022. N/A: (Not available).

## Findings

Improving the quality of health care at system level in any country requires a focus on governance issues, including improving public sector and subsidized it by adequate instruments, building institutional capacity to cover patient loads during emergencies and achieve a sustainable distribution of medical services between urban and rural areas. In order to improve the reality of health care services and create a sustainable healthy life and longevity for the population, each selected country must have a suitable number of health care personnel. In

addition, to create a healthy and safe society and increase the quality of people's health care, there must be justice in the allocation of health workers and health care units between rural and urban areas.

Our research shows that the quality of health care services in Thailand and Singapore is higher than in other countries, owing to their governments' significant efforts to reduce infectious diseases by increasing funding to public health care sectors, raising public awareness and making health insurance mandatory for all citizens, as well as providing good training to health workforce to deal with emergencies and reinforcing health workers' ability to work in rural areas by providing them with appropriate and sophisticated medical equipment. However, most ASEAN nations and India, are experiencing a significant problem due to a shortage of health workers and hospital beds, putting their health-care systems in jeopardy while dealing with pandemics. Furthermore, due to the availability of resources, infrastructure, and a fair wage, the majority of health care providers prefer to work in urban rather than rural areas. Rural areas, on the other hand, are far away and lack equipment. According to the Poverty and Access to Health Care study (2008), poor people cannot access health services in Developing Countries. Therefore, many innovative pro-poor financing schemes have been implemented throughout the region, including Thailand's Health Card, Vietnam's Health Fund for the Poor, Cambodia and Laos' Health Equity Funds, and even affluent Singapore's Medi-fund, a means-tested hospital fee subsidy scheme for indigent Patients. In Malaysia and Singapore, the healthcare systems are shifting away from government-run to more private-sector. Attempts to privatize public hospitals result in many hybrid forms of corporatized enterprises regulated or funded by governments. Some of the most innovative and advanced public-private health care types have emerged within the area. Such as Singapore's restructuring public hospitals beginning in 1985 and Indonesia's subsequent Swadana (Self-financing) hospitals.

Universal health coverage is critical to ensuring that people in the community have access to high-quality health care when and where they need it without facing financial hardship. Many individuals especially the poorest in Southeast Asia and India do not have access to the preventive services, treatment, and care to which they are entitled as a basic human right. ASEAN countries has begun to reform their healthcare finance to achieve universal health coverage. However, some of these nations confront several challenges in achieving it due to the financial and human resources shortage to deliver health care. Singapore, Thailand, and Brunei, on the other hand, have effectively achieved universal health coverage by combining financial systems and boosting the diversity of health care insurance, both public and private, to ensure that everyone has access to the services they require. Furthermore, reforming the public health sector and improving services by increasing inputs and necessary medical equipment to meet public demand. In contrast, India has yet to achieve universal health coverage, despite significant disparities in the quality and coverage of medical treatment. Inadequate public healthcare budget and a scarcity of competent human resources may be the main obstacles to establishing UHC in India. Another difficulty for India's health-care system is a lack of hospital beds and medical physicians and nurses to meet people's needs in both rural and urban locations. In the event of a shortage of facilities and health workers, emergencies and pandemics could be a huge



calamity for India in the future. However, India is working hard to achieve universal health care by 2030, and there are numerous attempts to overhaul the public health sector by increasing funding and establishing proper balance among medical facilities and health care workers across the country. Cambodia, Laos, and the Philippines, among the poorest Southeast Asian countries, must make greater efforts to improve their medical services to meet all people's needs and expand the number of institutions such as hospitals, health care units, and dispensaries. Vietnam and Indonesia are aiming to establish universal health coverage and enhance their health-care systems in order to meet the needs of their populations by encouraging individuals to use health insurance and increasing financing for public health, particularly hospitals. However, all ASEAN countries and India face several common obstacles in their health care system including 1) financial constraints, such as low overall and government health spending; 2) insufficient numbers and densities of health workers, facilities; and 3) the ongoing epidemiological transition, which is characterized by increasing burdens of noncommunicable diseases.

Nowadays, health care is shifting toward wellness services rather than disease treatments. This service includes a lifelong health plan aimed at keeping the kid and his or her family healthy. In addition, this places a significant emphasis on preventative concerns and encourages people to live healthy lifestyles by making risk-avoidance decisions. We believe that sharing experiences and learning lessons between India and ASEAN countries from reforming public health care sectors, increasing funding allocations, and creating a suitable distribution of health care workers by increasing the number of health workforces and their salaries will have a significant impact on improving people's lives and increasing longevity. Experiences should be drawn from nations like Singapore, Thailand, and Brunei that have effectively achieved universal health coverage and created robust health care services that offer their citizens easy access to their resources.

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