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Regional health integration and cooperation in the Philippines

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DISCUSSION PAPER SERIES NO. 2021-16

Regional Health Integration and Cooperation in the Philippines

Valerie Gilbert T. Ulep and Lyle Daryll D. Casas



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Regional Health Integration and Cooperation in the Philippines

Valerie Gilbert T. Ulep and Lyle Daryll D. Casas

PHILIPPINE INSTITUTE FOR DEVELOPMENT STUDIES
UNITED NATIONS ECONOMIC AND SOCIAL COMMISSION
FOR ASIA AND THE PACIFIC

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Abstract

This paper has two objectives: (1) assess the health sector performance of the Philippines relative to other ASEAN member states, and (2) assess regional health integration and cooperation in the Philippines, and identify challenges and opportunities. The Philippines is lagging in critical health outcome and access indicators in the region. This is a reflection of the longstanding challenges in terms of health financing, health service delivery, governance, and health human resources. Health integration and cooperation could be instrumental in achieving health system goals. While the country has made significant stride in facilitating regional integration and cooperation in recent years, challenges related to regulations, infrastructure, and implementation remain.

Keywords: regional integration, cooperation, ASEAN, Philippines

TABLE OF CONTENTS

I.	Introduction	1
II.	Analytical Framework	2
III.	Performance assessment of the Philippine health system	3
A.	Health outcomes	3
1.	Continuing MDG efforts to achieve SDGs	3
2.	The burden of non-communicable diseases (NCDs)	7
B.	Healthcare access	9
C.	Health system building blocks	10
1.	Health facilities	10
2.	Health financing	11
3.	Health human resources	13
4.	Health information systems	14
5.	Resilience of health system during health emergencies	14
IV.	Health Integration and Cooperation	21
A.	The scale of trade in medical goods and services	22
1.	Trade in medical goods	22
2.	Cross-border supply of services (Mode 1)	27
3.	Medical tourism (Mode 2)	31
4.	Foreign Direct Investment in the health sector (Mode 3)	33
5.	Mobility of health workforce (Model 4)	36
B.	Challenges in the trade of health goods and services	39
1.	Challenges in the cross-border supply of services	39
2.	Challenges in the implementation of MRAs	42
3.	Challenges in the implementation of FDI in health	43
4.	Challenges in the implementation medical tourism	44
V.	Conclusion and moving forward	45
	Bibliography	49

LIST OF TABLES

Table 1. MDG performance of ASEAN	6
Table 2. Top burden of diseases by risk factor, Philippines, 1990, 2000, 2010,	9
Table 3. International Health Regulation score of ASEAN countries by core capability, 2019	20
Table 4. WTO's Modes of Supply and Examples in the Trade of Health Services	21
Table 5. Samples of telemedicine classification	27
Table 6. Different forms of telemedicine service	27
Table 7. Philippine IT-Business Process Management services revenue growth rate, 2019-2022	29
Table 8. Types of foreigner availing medical care/tourism	31
Table 9. Medical niches of MT key players in ASEAN	32
Table 10. Nurses in Singapore, by citizenship	36

Table 11. Advantages and Disadvantages of Foreign Investments (OECD, 2020).....	44
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LIST OF FIGURES

Figure 1. Health systems framework	2
Figure 2. Infant mortality rate and GNI, by ASEAN countries, 2018	4
Figure 3. Life expectancy at birth and GNI, by ASEAN countries, 2018.....	4
Figure 4. Infant mortality rate of ASEAN countries, 1960-2018	5
Figure 5. IMR of ASEAN and Philippine regions, 2018.....	7
Figure 6. Adjusted Life Years (DALYs) of ASEAN countries, 1990-2019	8
Figure 7. UHC Service Coverage Index of ASEAN countries, 2017	10
Figure 8. Availability of hospital beds of ASEAN states, 2018.....	11
Figure 9. Sources of health spending in ASEAN countries, 2017.....	12
Figure 10. Government spending on health per capita, 2018.....	13
Figure 11. Availability of physicians in ASEAN countries	14
Figure 12. Number of hazard events, ASEAN, 1960-2019	15
Figure 13. Number of hazard events, by ASEAN states, 2008-2019.....	16
Figure 14. Cumulative confirmed COVID-19 cases and deaths per million population in the ASEAN region, as of March 2021	17
Figure 15. Weekly confirmed COVID-19 cases (left) and deaths (right) in the ASEAN region	17
Figure 16. Daily COVID-19 positive rate in ASEAN countries, January 2020 – March 2021	18
Figure 17. COVID-19 Stringency Index, 2020 – March 2021	19
Figure 18. Philippine imports and exports of medical related products to selected regions, 2019	23
Figure 19. Applied Most Favored Nation Tariff on Health Products (2019)	24
Figure 20. Philippine imports and exports of medical related products to selected regions, 2020	25
Figure 21. Trade of medical related products and total, 2010-2019	26
Figure 22. Sales revenue and growth rate from IT-BPO category transcription, 2004-2013	28
Figure 23. Foreign direct investments and growth rate for transcriptions, 2004-2013.....	29
Figure 24. Share of medical interventions provided to total telemedicine consultations from DOH, March-December 2020	30
Figure 25. Distribution of health professional emigrants by profession, 2010-2017	32
Figure 26. Foreign investments for health sector.....	34
Figure 27. Annual inflow of doctors to specified country, 2002-2018	37
Figure 28. Annual inflow of nurses to specified country, 2002-2015	38
Figure 29. Distribution of health professional emigrants by profession, 2010-2017	38
Figure 30. Network readiness index score and global rank of ASEAN countries, 2020	41
Figure 31. Mobile and fixed broadband speeds, ASEAN countries, March 2021	42

LIST OF BOXES

Box I. Experience in Thailand	35
-------------------------------------	----

Regional health integration and cooperation in the Philippines

Valerie Gilbert T. Ulep, Lyle Daryll D. Casas¹

I. Introduction

In the past decade, ASEAN has experienced rapid economic growth. From 2008 to 2019, the region's gross domestic product (GDP) has grown about 5% annually – with the global economy experiencing growth below 4%. In 2019, the total GDP of all ASEAN countries amounted to about US \$ 3,100 billion or 3.6% of the global economy (World Bank, 2019). During the same period, the region recorded a large decline in extreme poverty.²

Despite progress, improvement in health outcomes in the region was rather slow if not stagnant (UN ESCAP, 2016). The Philippines is one of the member states lagging in most critical health outcome indicators. The country failed to achieve its Millennium Development Goals (MDG) targets in 2015 in advancing maternal health and in reducing burden of infectious diseases, particularly tuberculosis and malaria (ASEAN, 2017).

The ASEAN Community envisions improved health outcomes to all member states. To achieve this, the Post-2015 Health Agenda touches upon four critical domains: (1) promoting healthy lifestyle, (2) responding to all hazards and emerging threats, (3) strengthening health system and access to care, and (4) ensuring food safety (ASEAN Secretariat, 2018). The agenda tackles the continuation of health goals during the MDG era. Also, the current agenda now acknowledges the problem of non-communicable disease (NCDs); the importance of resilient health systems in managing of disasters; and the inclusion of universal health coverage (UHC) (ASEAN Secretariat, 2018). These goals are included in the Sustainable Development Goals (SDG).³

The collective goal to improve health outcomes and well-being is within the broader aspiration of ASEAN to facilitate economic integration in the region. In 2015, the ASEAN Economic Community (AEC) in 2015 was established, which aims to facilitate trade and create a single market and production base integrated into the global economy. AEC is expected to have profound effects on the socio-economic structures of countries, including their health systems. With this, a critical question remains: how economic integration and can be instrumental in achieving health systems goals?

This paper has two objectives: (1) assess the performance of the Philippine health system relative to other ASEAN member states; and (2) analyze regional health integration and in the Philippines and identify areas in which could be instrumental in improving the country's health system performance.

¹ VGT and LDC are Research Fellow and Research Analyst of the Philippine Institute for Development Studies (PIDS). This paper was funded by United Nations Economic and Social Commission for Asia and the Pacific (UN-ESCAP). Any mention of a firm, product, service, or licensed process does not imply endorsement or criticism by the United Nations or by the Philippine Institute for Development Studies.

² Extreme poverty is measured as the total number of people living on less than US \$ 1.90 per day, measured using the international poverty line, as defined by the World Bank. In the early 1990s, half of the region's population were living in extreme poverty. After three decades, the share of the population suffering from such level of poverty² has fallen from 50% to 12.5% (ASEAN, 2015).

³ Sustainable Development Goals #3 is about good health and wellbeing. Ensuring these at all ages is vital to sustainable development (United Nations, 2015).

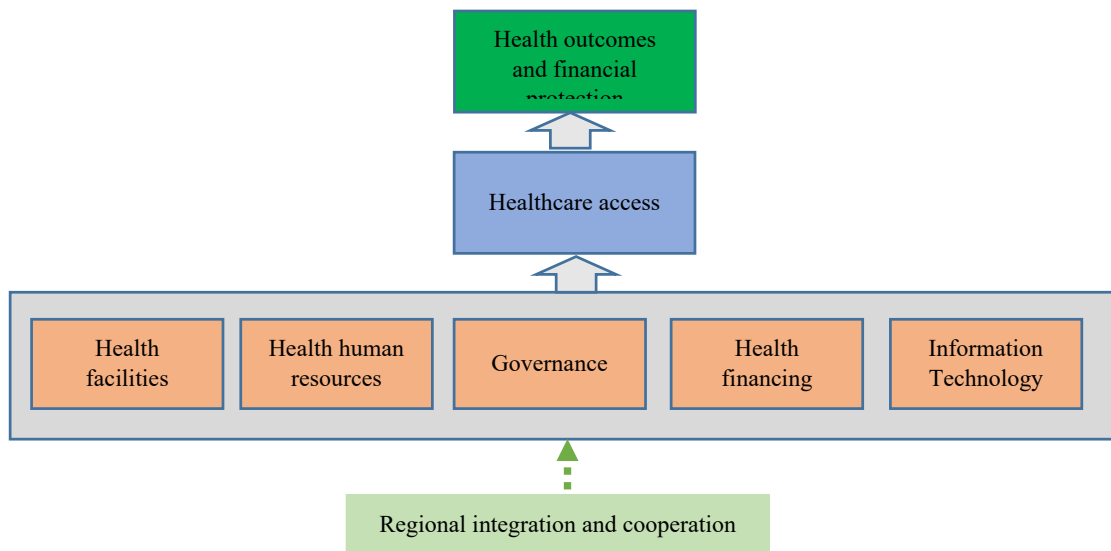
II. Analytical Framework

The primary goal of any health system improved health outcomes and financial protection. The former means people enjoy complete physical, mental and social well-being, while the latter means people are not impoverished because of healthcare expenses (WHO and World Bank, 2018).

Health outcomes are largely determined by access to essential and quality healthcare services. Access means having the timely use of personal health services to achieve the best health outcomes (Insititute of Medicine, 1993). Access is a reflection of the availability of inputs such as health facilities, health workers, medical goods, etc. In assessing health system performance, therefore all building blocks must be considered: (1) health facilities; (2) human resources; (3) governance; (4) financing; and (6) health information systems (WHO, 2010).

Also, in recent years, disasters have pushed countries to include resilience principles in health systems planning. Resilience simply means healthcare services must remain accessible even during public health emergencies (Thomas, et al., 2020). During pandemics, health systems must have sufficient health workers and health facilities. During typhoon, the physical structural and non-structural (e.g., electrical, water supply) components of health infrastructures should remain functional. As the world becomes more globalized, regional integration and cooperation are becoming instrumental in achieving health system goals. With appropriate policies in place, regional integration and cooperation could address scarcity of healthcare inputs through intra-regional mobility of people and labor, goods, services and investments. Figure 1 shows the entry point of regional economic integration and cooperation in the health system.

Figure 1.
Health systems framework



Source: Adapted from World Health Organization (2007)

III. Performance assessment of the Philippine health system

We assess the performance of the Philippine health system relative to ASEAN member states in terms of the following: (1) health outcomes; (2) healthcare access; (3) health system “*building blocks*”; (4) health system resilience during public health emergencies.

A. Health outcomes

Our assessment focuses on three areas as identified in the ASEAN Post-2015 Health Development Agenda and Sustainable Development Goals: (1) continuing MDG efforts to achieve SDGs; (2) growing threat of NCDs; and (3) growing exposure to disasters.

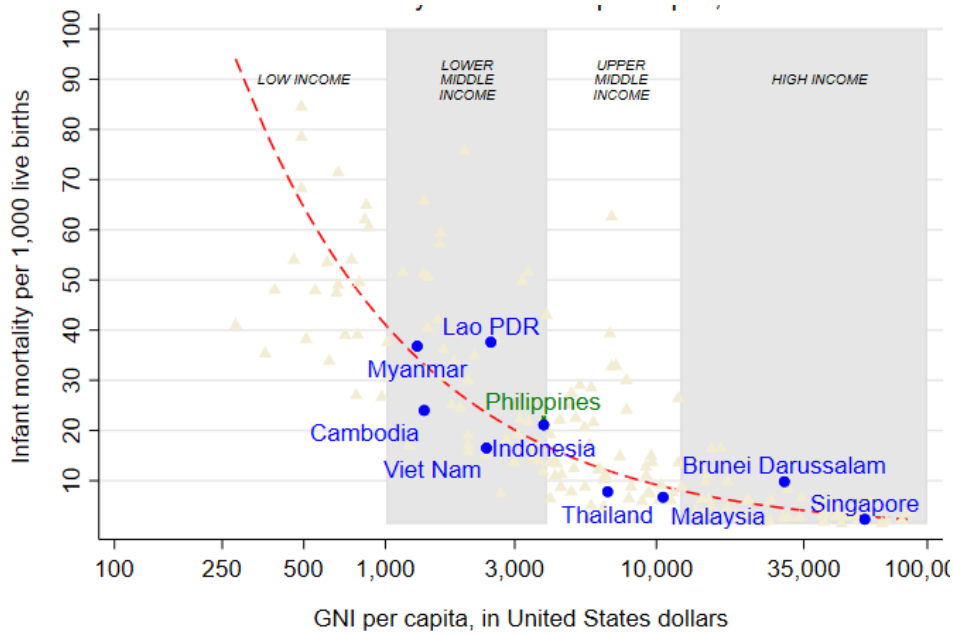
1. Continuing MDG efforts to achieve SDGs

Health outcomes in ASEAN countries are characterized by large disparity. Infant mortality rate (IMR) and life expectancy, both sensitive indicators of population health show large variation across ASEAN. Singapore has one of the best health outcomes in the world - even higher than most high-income countries. In contrast, health outcomes of other states are comparable with most middle-income countries. This large variation in health outcomes therefore makes ASEAN a microcosm of global health inequalities.

The IMR of the Philippines is considered high relative to its national income. In 2019, the IMR in the Philippines is approximately 22 infant deaths per 1,000 live births. While the average IMR for upper-middle-income countries (UMICs), which the country is projected to become by 2021 to 2022 was 11 infant deaths per 1,000 live births (NEDA, 2017; World Bank, 2019). Figure 2 shows the relationship of infant mortality rate and gross national income (GNI) per capita.

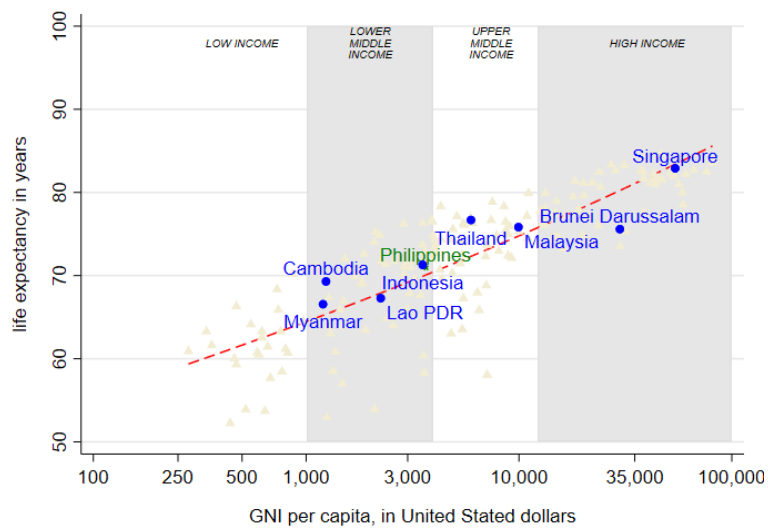
Figure 3 shows its relationship with life expectancy at birth. Both figures highlight the health outcome disparities among ASEAN member states.

Figure 2.
Infant mortality rate and GNI, by ASEAN countries, 2018



Source: World Development Indicators, World Bank (2018)

Figure 3.
Life expectancy at birth and GNI, by ASEAN countries, 2018

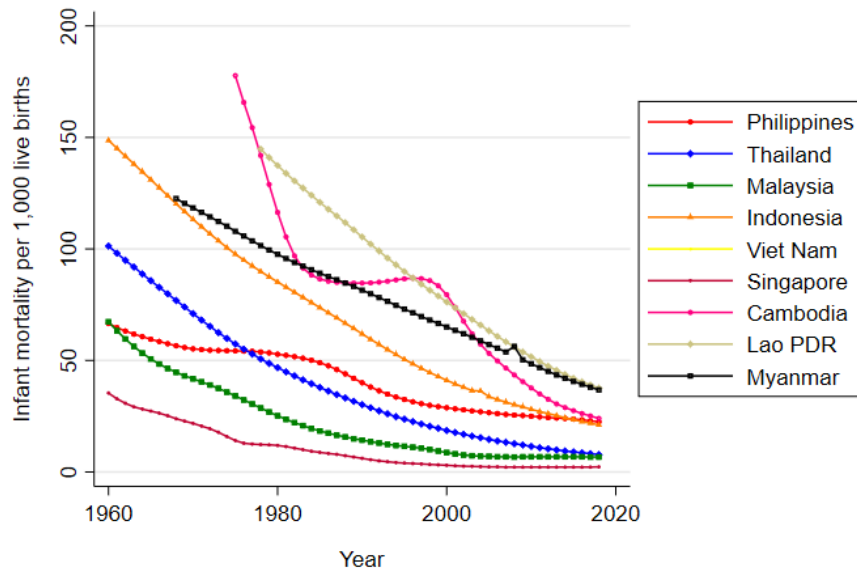


Source: World Development Indicators, World Bank (2018)

The level of improvement in health outcomes over the years vary across ASEAN countries. Over the last five decades (1970-2018), the decline in IMR was much faster in some countries. Cambodia, Myanmar, and Lao PDR albeit having the highest IMR in the region, have registered the fastest decline

in IMR over the last two decades. Among the ASEAN +5⁴, the Philippines appear to have the slowest decline. Figure 4 shows the slow decline in IMR in the Philippines relative to ASEAN countries.

Figure 4.
Infant mortality rate of ASEAN countries, 1960-2018



Source: World Development Indicators, World Bank (1960-2018)

The slow improvement in health outcomes failed the country from achieving development targets.

In 1990s, countries have committed to reduce infant, child, and maternal deaths, and child malnutrition by two-thirds by 2015 as part of the Millennium Development Goals (MDGs). The Philippines failed to achieve its targets for malnutrition and infant, child, and maternal deaths in 2015. Myanmar and the Philippines were the only countries in the region that failed to achieve all of the four child and maternal health MDG targets.⁵ The latest 2019 data suggest that the Philippines has yet to achieve these 2015 targets. Under-5 mortality and infant mortality rates were 27.3 and 21.6 deaths per 1,000 live births, respectively – both still below the 2015 targets (See Table 1).

⁴ ASEAN +5: Malaysia, Singapore, Thailand, Indonesia, and Philippines.

⁵ The four failed indicators were prevalence of underweight in children under-five, under-five mortality rate, infant mortality rate, and maternal mortality ratio.

Table 1.
MDG performance of ASEAN

Country or area	Prevalence of underweight children under-five years of age			Under-five mortality rate			Infant mortality rate			Maternal mortality ratio (per 100,000 live and still births)			Proportion of one-year old immunized against measles			Proportion of births attended by skilled health professional		
	2015	Target		2015	Target		2015	Target		2015	Target		2015	Target		2015	Target	
Brunei	9.6	..	..	10	3	●	9	2	●	60	0	●	96	100	●	100	100	●
Cambodia	24	35	●	35	60	●	27	47	●	170	92	●	70	100	●	89	100	●
Indonesia	20	16	●	26	32	●	22	23	●	305	98	●	82	100	●	92	100	●
Lao PDR	22	23	●	86	57	●	57	38	●	357	170	●	76	100	●	37**	100	●
Malaysia	3	13	●	8	6	●	7	4	●	24	5	●	93	100	●	99	100	●
Myanmar	31**	23	●	52	43	●	39	33	●	180	105	●	84	100	●	77	100	●
Philippines	22	18	●	31	27	●	23	19	●	221	41	●	77	100	●	87	100	●
Singapore^a	..	..	..	3	3	●	2	2	●	7	1	●	95	100	●	100	100	●
Thailand	9	18	●	9	4	●	6	3	●	25	6	●	100	100	●	100	100	●
Viet Nam	15	21	●	22	19	●	15	15	●	69	58	●	97	100	●	98	100	●
Total ASEAN	18	18	●	26	26	●	20	19	●	197	72	●	86	100	●	91	100	●

Source: ASEAN Statistical Report on Millennium Development Goals 2017

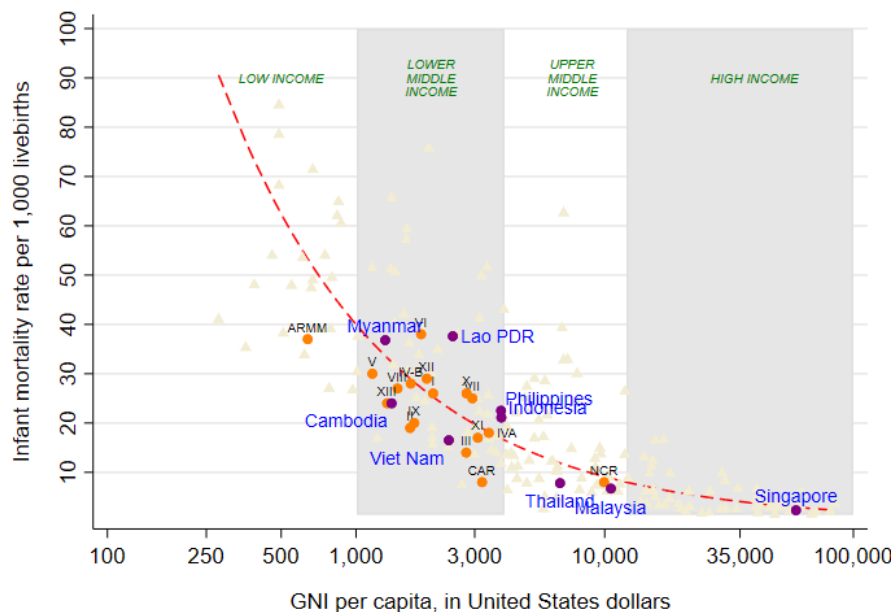
Note: ^a Singapore data refer to resident population

** Imputation

Green circle indicates that the target is met; whereas red circle indicates otherwise.

There is a large health disparity across Philippine regions. *Figure 5* shows the IMR of various regions in the Philippines vis-a-vis ASEAN countries. The health outcomes of relatively wealthier regions (e.g., National Capital Region) were similar to most upper-middle and high-income countries. In contrast, the Bangsamoro Autonomous Region in Muslim Mindanao (BARMM), located south of the country, is akin to the low-income countries in the world (Philippine Statistics Authority, 2018).⁶

Figure 5.
IMR of ASEAN and Philippine regions, 2018



Source: World Development Indicators, World Bank; Philippine Statistics Authority

2. The burden of non-communicable diseases (NCDs)

The Philippines is experiencing a rapid change in disease pattern.⁷ Figure 6 shows the rate of Disability Adjusted Life Years (DALYs),⁸ a measure of premature mortality and morbidity, across ASEAN states in the last 30 years. DALYs in the region has improved significantly over time. In the Philippines, DALYs has declined from 40,000 DALYs to 30,000 DALYs per 100,000 population. However, this improvement comes with fast-changing epidemiologic pattern. Disease burden has shifted from infectious diseases to NCDs. From 1990 to 2019, the contribution of NCDs to the total disease burden has increased from 39 per cent in 1990 to 64 per cent in 2019 in the Philippines. Unlike infectious diseases, NCDs, in general, are more difficult, more complex, and more expensive to treat.

⁶ The World Bank have a list of countries by income classification (low income, lower-middle income, upper-middle income, and high income) (World Bank, 2021).

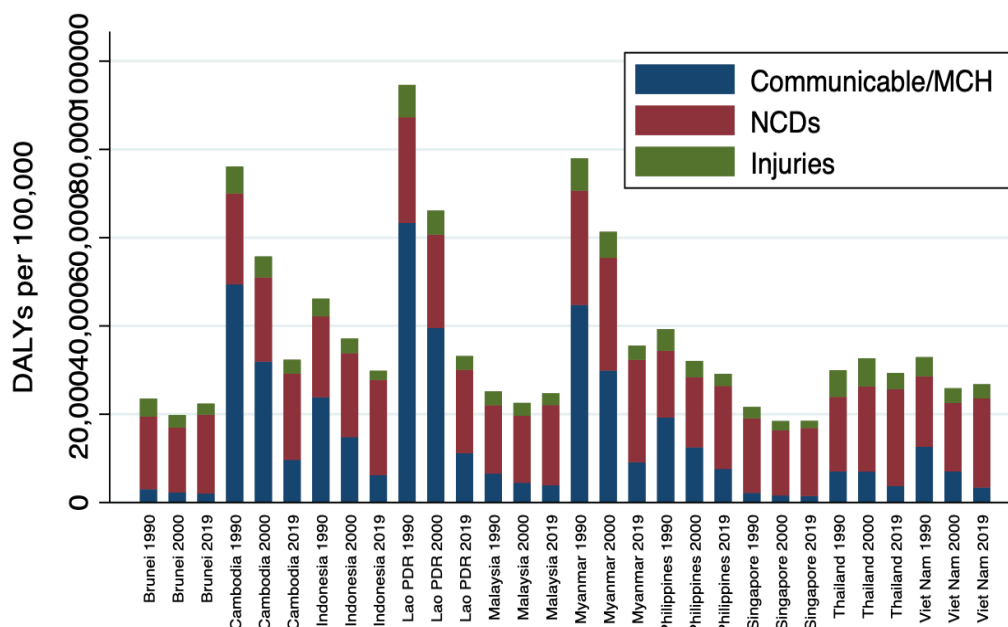
⁷ Epidemiologic transition is the change in disease patterns and causes of death. A baby born in the 1900s would have likely died due to an infectious disease but the babies born in the 20th century will most likely die due to chronic or non-communicable diseases (Britannica & Editors of Encyclopaedia, 2020).

⁸ The disability-adjusted life years or DALYs refers to a social measure of the burden (from disease or disability) in populations. It is expressed by combining measures of life expectancy and adjusted quality of life in the course of a burdensome disease or disability for a population (Joseph and Namboodiri, 2020; Prüss-Üstün, Mathers, Corvalán, & Woodward, 2003; WHO, 2020).

Metabolic and behavioral risk factors are the major determinants of NCDs in the Philippines. In 2019, high blood pressure, smoking, high fasting blood sugar, obesity were the major risk factors (Institute for Health Metrics and Evaluation (IHME), 2020) (See Table 2). Also, ageing is also accelerating the occurrence of NCDs.

The problem of NCDs prompted countries to include NCDs prevention and control in many regional and international health agenda. Under SDG Goal #3, countries aim to reduce premature mortality from NCDs through effective prevention and treatment interventions. The ASEAN 2015-Post Health Agenda also reinforces the promotion of a healthy lifestyle as critical element to reduce NCD burden in the region.

Figure 6.
Adjusted Life Years (DALYs) of ASEAN countries, 1990-2019



Source: Institute for Health Metrics and Evaluation, Global Burden of Disease (2019)

Table 2.
Top burden of diseases by risk factor, Philippines, 1990, 2000, 2010, 2019

Rank	Causes	Percentage Share of total DALYs			
		1990	2000	2010	2019
1	High systolic blood pressure	3.2%	6.1%	9.0%	10.3%
2	Smoking	5.2%	7.5%	9.0%	9.0%
3	High fasting blood glucose	3.3%	4.7%	5.9%	7.5%
4	High BMI	1.5%	3.2%	4.0%	7.1%
5	Low birthweight	11%	10.3%	8.1%	6.0%
6	Kidney dysfunction	1.9%	2.8%	4.5%	5.3%
7	Alcohol use	4.0%	4.3%	4.5%	5.0%
8	Short gestation	8.4%	8.0%	6.4%	4.8%
9	High LDL	1.1%	2.6%	4.0%	4.6%
10	Household air pollutant	5.7%	2.9%	3.0%	4.3%

Source: Institute for Health Metrics and Evaluation, Global Burden of disease (2019)

Note: Rank is based on the latest data (2019)

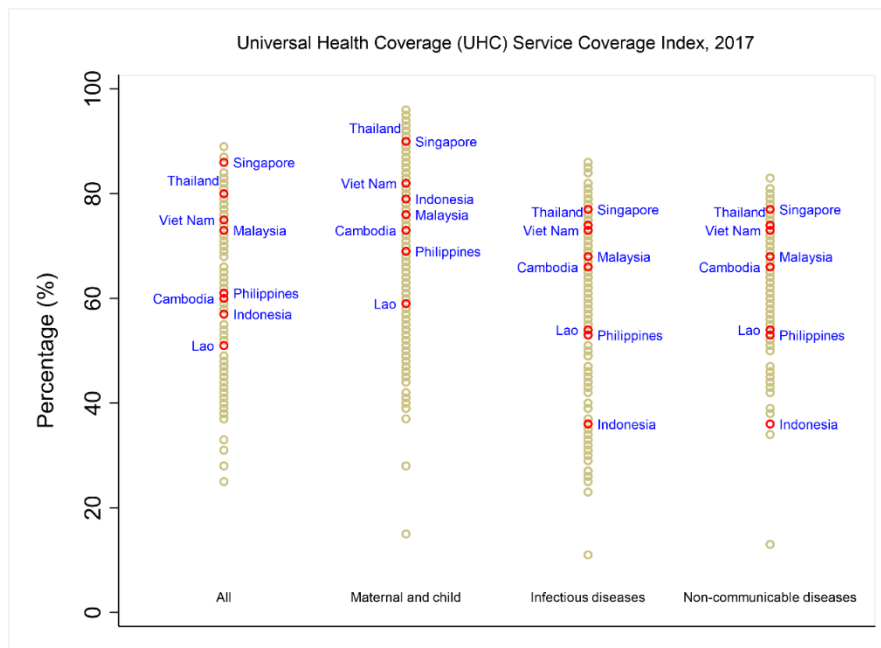
B. Healthcare access

To improve health outcomes, access to essential high-quality healthcare services is critical. Access to essential healthcare services is the primary objective of Universal Health Coverage (UHC). According to World Health Organization, universal health coverage (UHC) means that “people should have access to the health services they need, when and where they need them, without financial hardship” (WHO, 2020). Universal Health Coverage (UHC) is one of the global commitments of countries in the SDG and ASEAN post-2015 Health Agenda.⁹

Access to essential healthcare services remains a major challenge in the Philippines. The UHC Service Coverage Index (SCI), an SDG indicator to measure the countries progress towards UHC, shows progress of the Philippines relative to other countries. The country is lagging behind in terms of providing access to essential healthcare services (See Figure 7.).

⁹ SDG Target 3.8 is defined as “Achieve universal health coverage, including financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all” (WHO 2016, p.1).

Figure 7.
UHC Service Coverage Index of ASEAN countries, 2017



Source: World Health Organization

C. Health system building blocks

Poor access to healthcare services reflects the state of health system building blocks: health facilities, health financing, health human resource, and health information systems

1. Health facilities

Health systems must have adequate number of health facilities offering different types and levels of health services. Core facilities include primary healthcare facilities (e.g., clinics) and hospitals. Primary health care facilities serve as the frontline facilities, which should provide basic healthcare services. Patients are referred to hospitals or specialized facilities when they need an advanced level or more complex care.

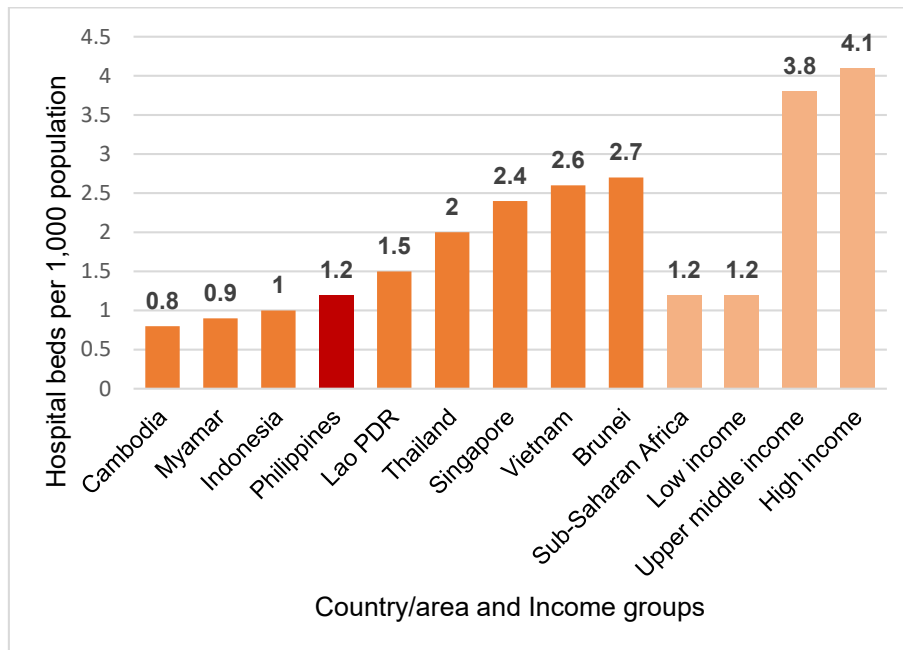
About half of Filipinos do not have timely access to primary healthcare facilities. The government targets that the population should have access to primary health care (PHC) within 30 minutes. Only 50% have access to PHC within this time frame (DOH, 2020). The three poorest regions in the country have the highest share of the population without timely access to health facilities.¹⁰

Hospital beds are limited. In 2019, there are 1,200 licensed hospitals in the country, of which 36% are publicly owned. The availability of hospital beds in 2018 is comparable to the low-income countries in

¹⁰ These regions are Bangsamoro Autonomous Region in Muslim Mindanao (BARMM), Bicol, and MIMAROPA (Mindoro, Marinduque, Romblon, Palawan).

the world (World Bank, 2019) (See Figure 8). According to DOH, the country needs additional 400,000 hospital beds to meet the population need for hospital care (or about 2.7 beds per 1,000 population) (DOH, 2020).

Figure 8.
Availability of hospital beds of ASEAN states, 2018
(Beds per 1,000 population)



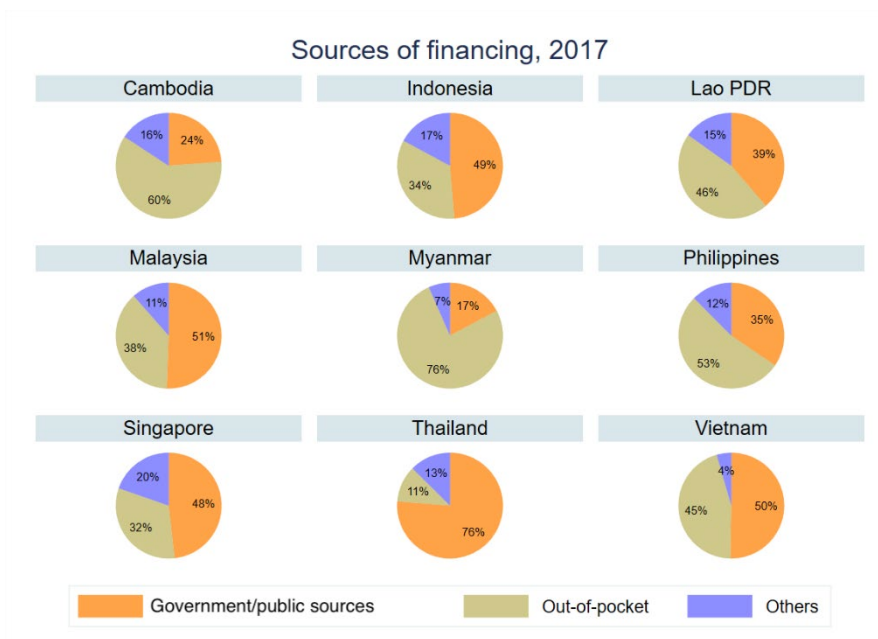
Source: World Health Organization

2. Health financing

Health financing examines the country’s level of health spending including sources. The source of spending can be categorized into three (3): public, private (e.g., household out of pocket, and other private sources), and other sources (e.g., external funding). To improve access healthcare services, public spending should be the major source, and out-of-pocket should be minimal (WHO, 2018).

More than half (52%) of out-of-pocket remains the major source of health spending. Public spending is critical in achieving the goals of UHC. Countries that have successfully implemented UHC have high share of public spending. In Thailand, 80% of health spending are accounted for public sources (See Figure 9).

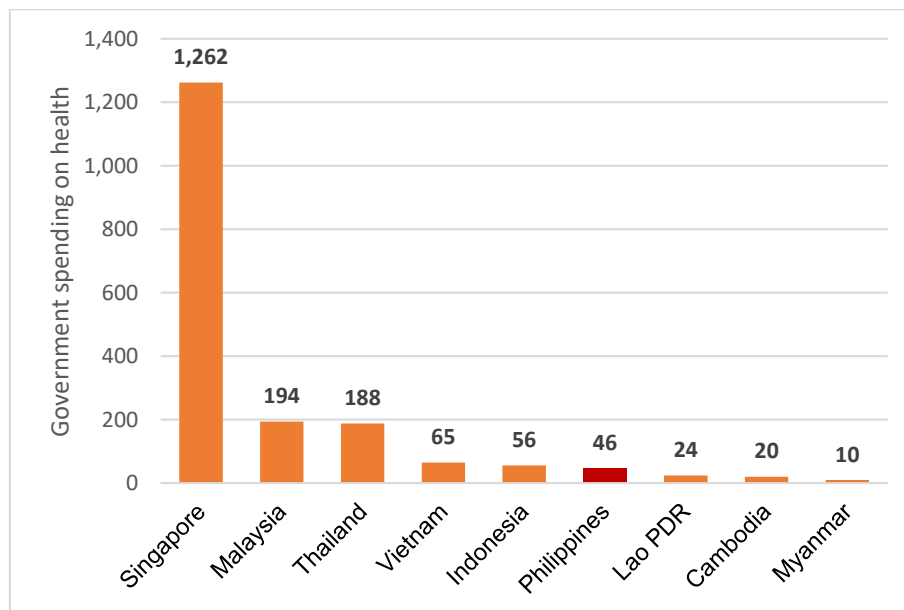
Figure 9.
Sources of health spending in ASEAN countries, 2017



Source: World Health Organization

Public spending on health in the Philippines is one of the lowest in the ASEAN region. In 2018, public spending on health was US\$ 46 per capita. This is considered low relative to other middle-income countries (Thailand, Viet Nam, Malaysia, and Indonesia) in the region. Thailand and Malaysia spent on health four times more than the Philippines (See Figure 10). The country's public spending on health was about 1.5% of GDP, significantly lower than Thailand, Viet Nam, Singapore, and Malaysia.

Figure 10.
Government spending on health per capita, 2018
(in United States dollars)



Source: World Development Indicators, World Bank

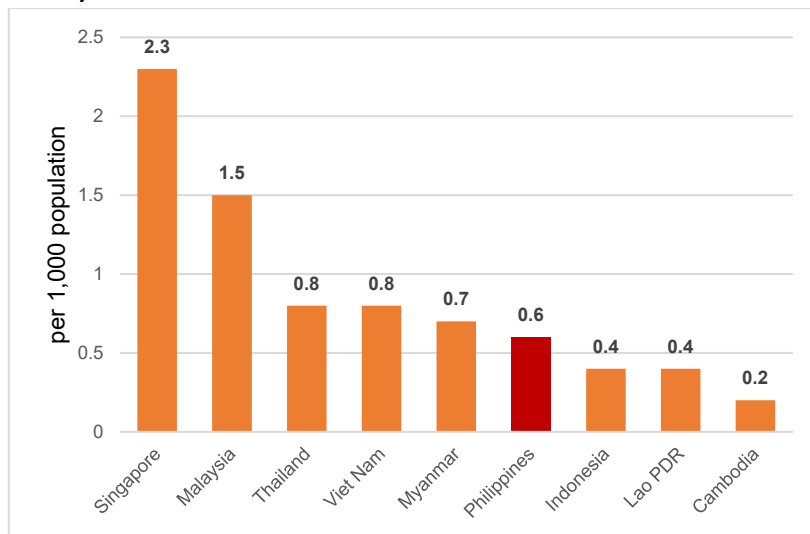
Note: Government spending includes domestic, social insurance, and on-budget external source

3. Health human resources

The improvement of a health system is dependent on the availability of human resources.

Figure 11 shows the availability of physicians compared to other ASEAN countries. Most of the health workers are situated in urban areas. In the latest health facility survey of the DOH in 2019, only 90% of rural health units or primary healthcare facilities in the country have at least one medical doctor; a significant number of primary healthcare facilities does not have a nurse or a midwife (Ulep, Uy, & Casas, 2020; DOH, 2019).

Figure 11.
Availability of physicians in ASEAN countries
(Per 1,000 population)



Source: World Health Organization

4. Health information systems

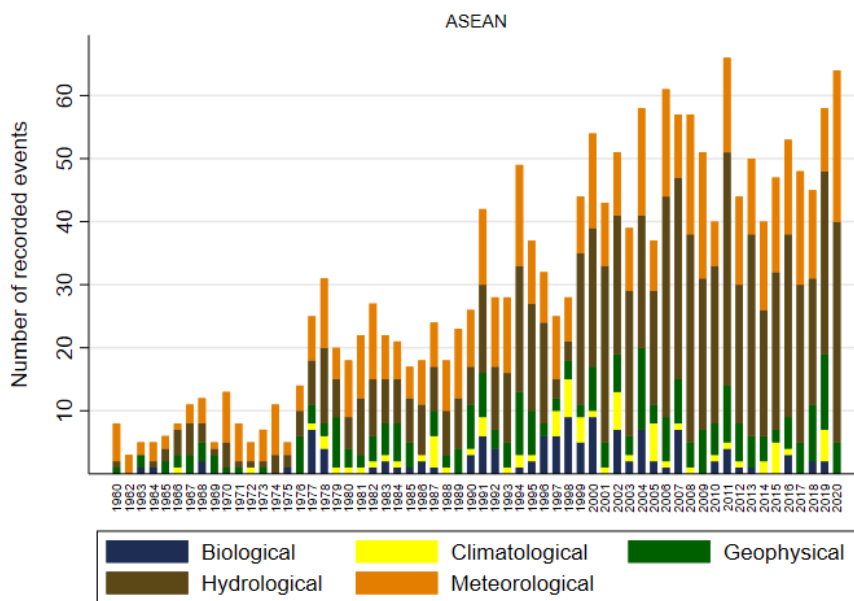
eHealth has two primary goals: (1) improve the operations of health facilities; and (2) improve healthcare access of the people through telehealth. eHealth solutions can be used to improve business operations of health facilities. A modern electronic health record (EHR) will improve surveillance and monitoring of disease patterns. eHealth also improves frontend functions using telemedicine. Telemedicine facilitates the interaction of patients and physicians using modern technology. It could potentially improve continuity of care and monitoring of patients especially those with chronic conditions.

While eHealth has been introduced a decade ago, it remains limited. The majority of primary care facilities are still using paper-based medical health record systems. Based on the health facility survey of the DOH in 2019, only 36% of RHUs have electronic medical records (EMR). While there has been some progress in the implementation of EMRs and telemedicine, the results have been inconsistent because of the large variation in priorities of local government units.

5. Resilience of health system during health emergencies

The growing number of disasters in recent years puts population health at risk. Disasters or hazards are classified into biological (e.g. pandemics), geophysical (e.g., earthquake, volcanic eruption), meteorological (e.g., storm), hydrological (e.g., flood), and climatological (e.g., drought) (IFRC, 2020). From 1960 to 2019, the number of recorded disaster events in ASEAN has increased (See Figure 12).

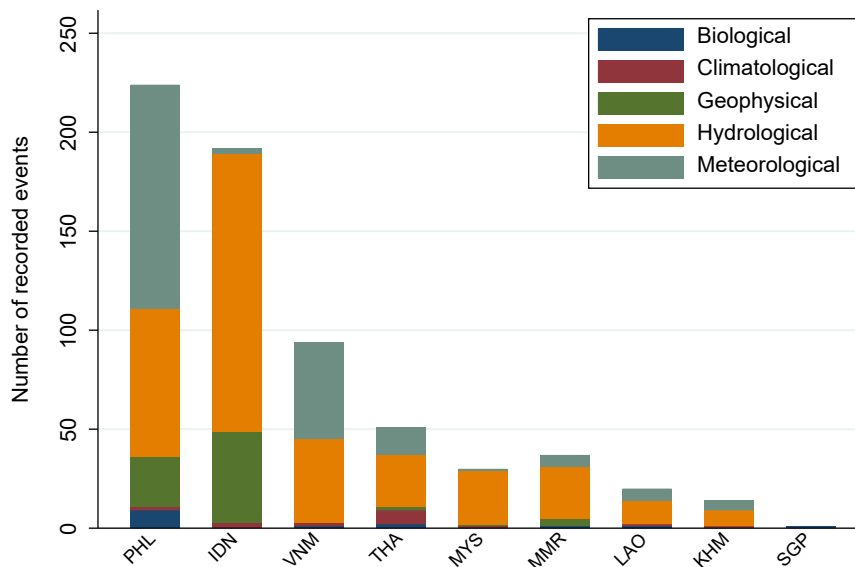
Figure 12.
Number of hazard events, ASEAN, 1960-2019



Source: Centre for Research on the Epidemiology of Disasters (CRED) - Emergency Events Database / Louvain, Brussels, Belgium (D. Guha-Sapir)

The Philippines recorded the greatest number of disasters in the region. ASEAN recorded around 663 natural disasters from 2008 to 2019, of which 34 per cent occurred in the Philippines (See Figure 13). Hydrological and meteorological were the main types of disasters. The high exposure to disasters among vulnerable populations increases the risk of casualties. The Philippines one of the riskiest countries in the world (Behlert, Diekjobst, Felgentref, & Manandhar, 2020).

Figure 13.
Number of hazard events, by ASEAN states, 2008-2019



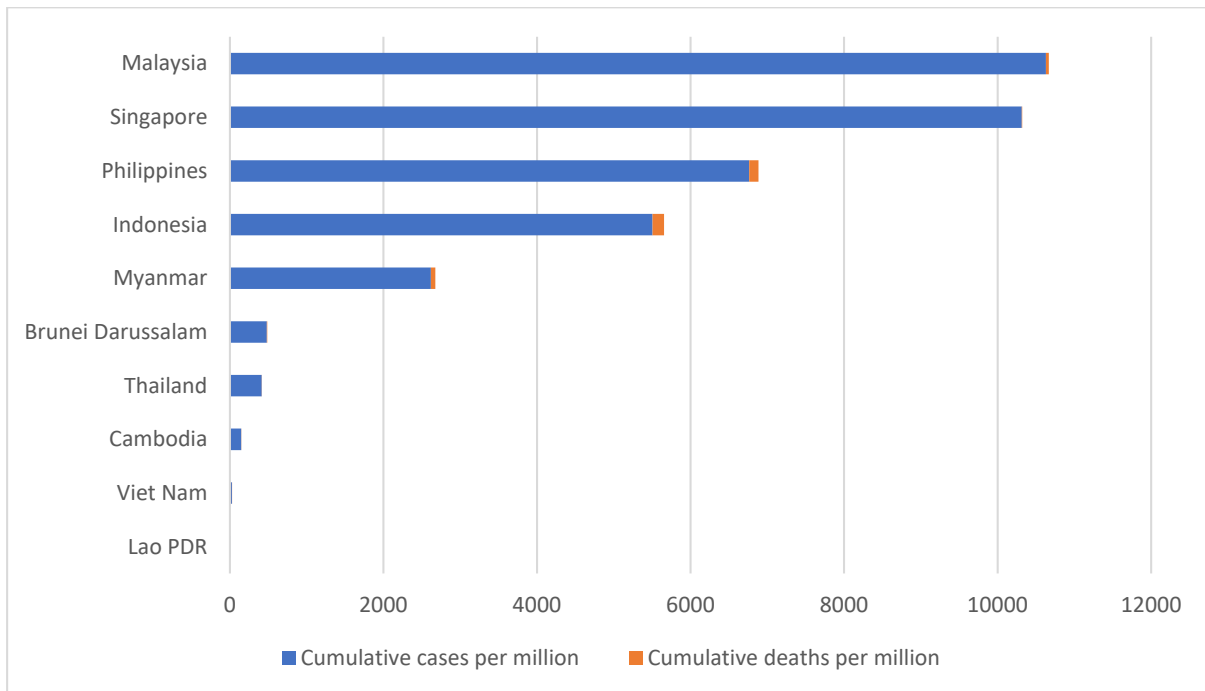
Source: Centre for Research on the Epidemiology of Disasters (CRED) - Emergency Events Database / Louvain, Brussels, Belgium (D. Guha-Sapir)

Notes: ASEAN states excluding Brunei (no data available)

PHL – Philippines; IDN – Indonesia; VNM – Viet Nam; THA – Thailand; MYS – Malaysia; MMR – Myanmar; LAO – Lao PDR; KHM – Cambodia ; SGP - Singapore

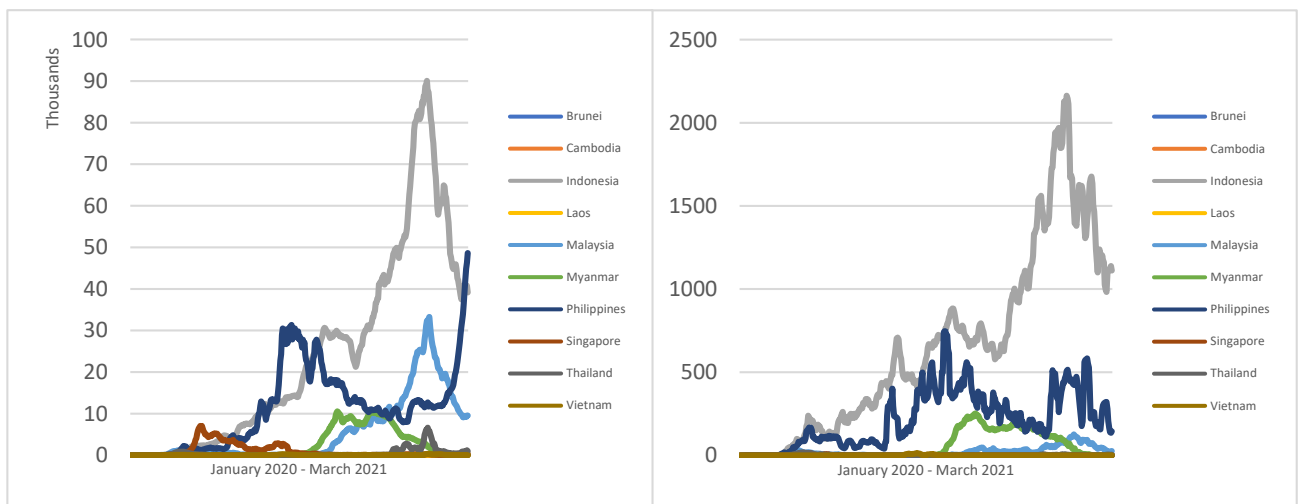
The on-going COVID-19 pandemic is testing the resilience of health system in the region. The COVID-19 pandemic is considered as one of the worst disasters in recent decades. The ASEAN region reported 2.7 million confirmed cases and 57,000 deaths (ASEAN, 2020a). As of March 21, 2021, Indonesia accounts for the largest number of confirmed COVID-19 cases (1.5 million) and deaths (40,000) followed by Philippines (660,000 confirmed cases and 13,000 deaths). On the other hand, Figure 14. shows the cumulative number of confirmed cases and deaths per million in the ASEAN region. Myanmar, Brunei, Thailand, Cambodia, Viet Nam, and Lao PDR performed well in controlling the pandemic.

Figure 14.
Cumulative confirmed COVID-19 cases and deaths per million population in the ASEAN region, as of March 2021



Source: Our World in Data

Figure 15.
Weekly confirmed COVID-19 cases (left) and deaths (right) in the ASEAN region



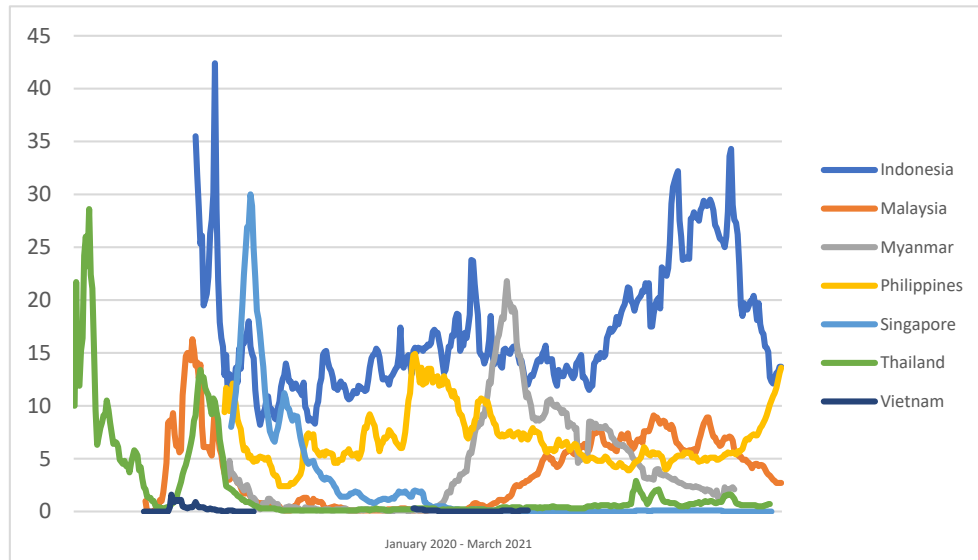
Source: Our World in Data

Philippines and Indonesia recorded high positive rates (share of confirmed cases to total tests), which indicates widespread transmission in the communities.

Figure 16 shows the daily positive rate over time. As of March 2021, Indonesia and Philippines have the highest positive rate of 15%, which is above the recommended positivity rate of 5% by the WHO.

Figure 16.

Daily COVID-19 positive rate in ASEAN countries, January 2020 – March 2021

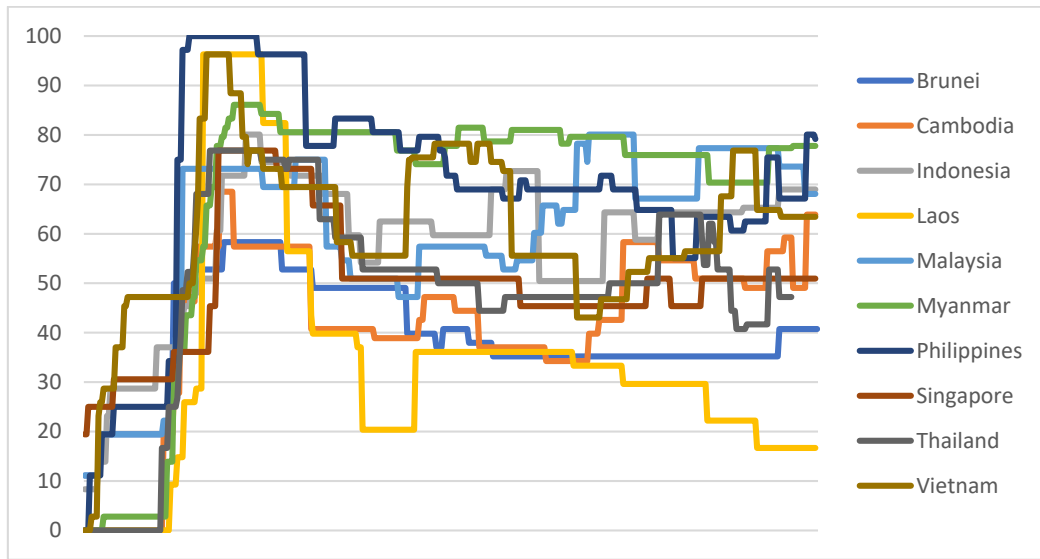


Source: Our World in Data

Governments imposed mobility restrictions to slowdown the spread of the infection. shows the stringency index¹¹ of ASEAN countries. Throughout the pandemic period, the Philippines has consistently recorded high stringency index. The Philippines recorded the highest stringency index of 100 in March 2020 and had the lowest in December 2020 (See Figure 17).

¹¹ Stringency index is a “composite measure based on nine response indicators including school closures, workplace closures, and travel bans, rescaled to a value from 0 to 100 (100 =strictest). If policies vary at the subnational level, the index is shown as the response level of the strictest sub-region” (Our World in Data, 2021; Hale et al. 2021)

Figure 17.
COVID-19 Stringency Index, 2020 – March 2021



Source: Our World in Data and Hale et al., 2021

Preparedness during public health emergencies varies across ASEAN member states. The International Health Regulations (IHR) of the WHO monitors the capabilities of the health system to detect, assess and notify public health risks and emergencies of national and international interest, including pandemics. The IHR identifies 13 core capabilities that countries need to be monitored. In 2019, The Philippines received an average score of 53% in IHR, one of the poorest performing countries next to Lao PDR and Cambodia (see Table 3).

Table 3.
International Health Regulation score of ASEAN countries by core capability, 2019¹²

Country or area	TOTAL SCORE	Legislation and financing	Coordination and National Focal Point Functions	Zoonotic events and the Human-Animal Health Interface	Food safety	Laboratory	Surveillance	Human Resource	National Health Emergency Framework	Health Service Provision	Risk Communication	Points of entry	Chemical event	Radiation emergencies
Philippines	53	40	40	80	40	53	50	40	53	60	60	70	60	40
Indonesia	73	80	60	80	80	100	80	80	67	67	80	80	40	60
Lao PDR	35	47	40	40	40	47	80	20	47	20	40	0	20	20
Myanmar	64	60	70	80	60	73	90	60	47	67	60	40	80	40
Cambodia	50	47	80	60	60	47	80	20	33	33	60	50	60	20
Malaysia	95	100	100	20	80	93	100	100	100	100	100	100	80	80
Singapore	92	100	100	80	80	100	100	100	80	100	100	100	80	80
Thailand	85	87	90	100	80	87	80	80	80	93	100	70	80	80
Viet Nam	66	87	70	60	80	67	60	60	60	67	60	50	80	60

Source: The Global Health Observatory, World Health Organization

Note: Data for ASEAN countries excluding Brunei (no available data)

Data for Malaysia (gray color) for the year 2018

¹² International Health Regulations (2005) provides an overarching framework that define every country's "rights and obligations in mitigating public health emergencies that have potential to cross borders. IHR are an element of international law, which is legally-binding on 196 countries (including the 194 WHO Member States). [They create rights and obligations for countries, and also it requires the state] to report public health events. It also outlines the standards to determine whether or not a particular event constitutes a public health emergency of international concern" (WHO, 2016)

As stated in the IHR (2005), all state parties are mandated to obtain or develop and maintain minimum core public health capacities to implement the IHR, and report the status of the implementation yearly (as stated in Art. 54 of the Regulations). This submission of data from the states is very important as the data will be used as basis for: reporting to the World Health Assembly (with regard to the status of implementations), informing the GPW 13 indicator on emergency preparedness; and informing UN SDG Goal 3 (IHR capacity and health emergency preparedness) (WHO, 2016).

The IHR (2005) have 13 core capacities namely: legislation and financing (C1), IHR coordination and national focal point (NFP) functions (C2), zoonotic events and the human-animal interface (C3), food safety (C4), laboratory (C5), surveillance (C6), human resources (C7), national health emergency framework (C8), health service provision (C9), risk communication (C10), points of entry (C11), chemical events (C12), and radiation emergencies (C13).

IV. Health Integration and Cooperation

In the previous chapter, we described the performance of the Philippine health sector relative to other ASEAN member states. Also, we described the resilience of the health system in facing disasters such as pandemics. In summary, the country's poor performance in improving health outcomes is a manifestation of different health system challenges, which reinforces the need to implement health reforms in addressing limited health facilities and health workers, and health financing inefficiencies. ASEAN member states recognize the importance of resilient and effective health systems. Most member states including the Philippines have embraced Universal Health Coverage (UHC) as an important component of countries' political agenda. The goal of UHC is included in the SDG and post-2015 ASEAN health agenda.

In this section, we examine the intersection of economic integration and cooperation and the pursuit of UHC in the Philippines. The growing multilateral collaboration among ASEAN member states has led to the creation of the ASEAN Economic Community (AEC) in 2015, which aims to facilitate trade and create a single market and production base integrated into the global economy.

The AEC has profound impact on the economic and social structures of countries, including their health systems. It is therefore important to find the common ground between economic integration and cooperation with the overall health goals of health systems. The World Trade Organization (WTO) has identified four (4) modes through which health services and goods can be traded among countries (See Table 4).

Table 4.
WTO's Modes of Supply and Examples in the Trade of Health Services

Modes	Trade in services	Trade in ancillary services	Trade in goods
Mode 1 – Cross-border supply	Shipment of lab samples, diagnosis, and clinical consultation via mail or electronic delivery (e.g., telemedicine)	Distance medical training; medical transcription	Health and health care equipment, pharmaceuticals
Mode 2 Consumption abroad	(a) Medical tourism; (b) Educational services provided to foreign students (c) Medically assisted residence for retirees	Hotel, restaurant, paramedical services, etc. associated with medical tourism; training of foreign nationals; foreign owned or sponsored medical education or research facilities	
Mode 3 – Commercial presence	Foreign investment in the health services sector in another	Foreign owned or sponsored medical	

	country, establishment of hospitals, clinics, etc.	education or research facilities
Mode 4 – Presence of natural persons	Movement of health personnel, including both temporary and permanent flows, e.g., US hospital recruiting foreign nurses	Cross border movement of medical personnel for purposes such as training

Source: WTO, GATS Part I, Article I.2; Cattaneo (2009)

A. The scale of trade in medical goods and services

The following subsections highlights five (5) areas in which trade in services and goods could have profound effects on the provision of health services to the population: **(1) trade in medical goods, (2) cross-border supply of services, (3) consumption abroad (medical tourism), (4) commercial presence (foreign direct investments in the health sector), and (5) presence of natural persons (mobility of health workforce).**

1. Trade in medical goods

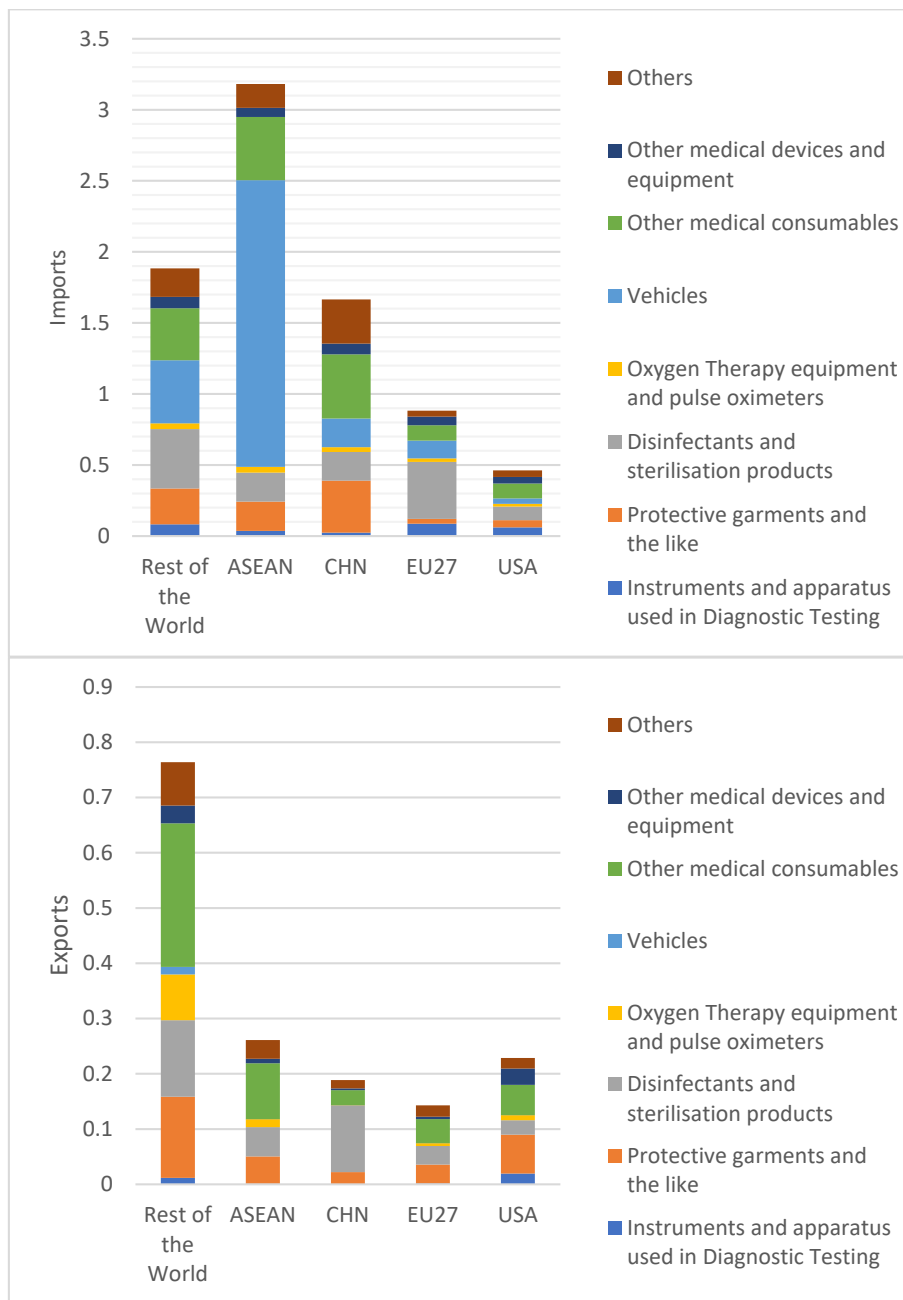
How does trade affects access to healthcare services? The most obvious linkage is on the consumption side. In many countries even in emerging ones, health expenditures around have been increasing rapidly. Open trade could facilitate the access to essential healthcare goods providers at competitive prices (Heible and Shepherd, 2017).

Majority of the Philippine imports of medical related products¹³ come from the ASEAN region, while most of its exports go to other countries. In 2019, value of imports from ASEAN to the Philippines was US\$3.1 billion and this is the highest compared to other regions. Among the medical related products, vehicles recorded the highest imports, which includes wheelchairs, ambulances, mobile clinic & radiologic vehicles. China and the rest of the world were the second highest importers at US\$ 1.6 and 1.8 billion, respectively, while the United States recorded the least imports at around 0.5 billion US\$.

In 2019, the Philippines exported medical products US\$ 0.3 billion to ASEAN and US\$ 0.7 billion were highest to the rest of the world. Most exported product were medical consumables, which includes oxygen, tape, soaps, syringes, and etc. The country receives most of medical related products from ASEAN, and it exports more to other countries (See Figure 18).

¹³ The definition of medical products was based on the list prepared by World Health Organization and World Customs Organization HS Classification Reference for COVID-19 supplies. http://www.wcoomd.org/-/media/wco/public/global/pdf/topics/nomenclature/covid_19/hs-classification-reference_edition-3_en.pdf?la=en&fbclid=IwAR0JzT1P6ipVIRmE91NSehNjoYeaCh1klfBih9zt72BDKMBxFh6th15_-KM

Figure 18.
Philippine imports and exports of medical related products to selected regions, 2019
(in billions United States dollars)

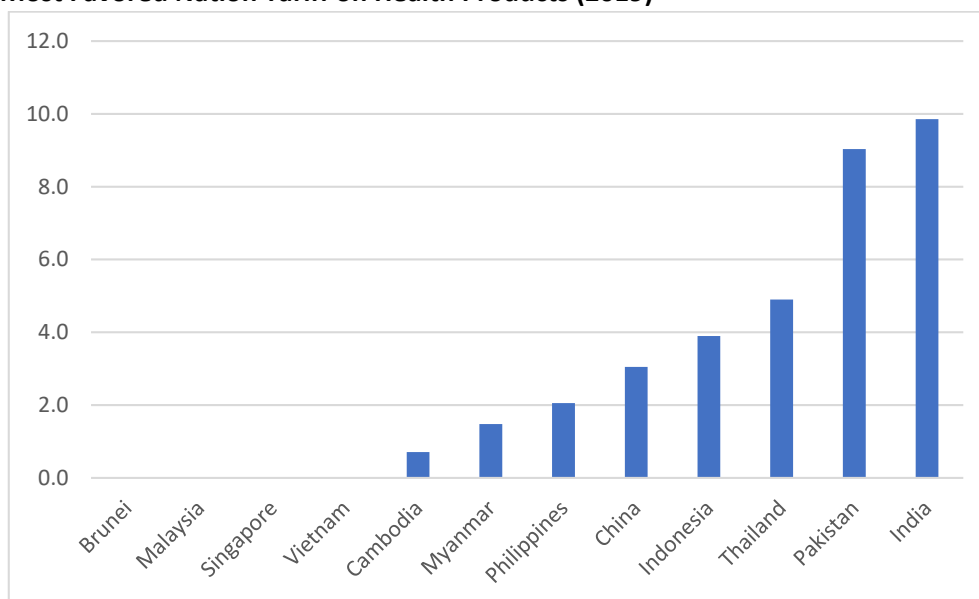


Source: UN COMTRADE, using WCO/WHO Classification

Tariffs and nontariff measures (NTMs) restrict trade in medical goods and products. To assess the barrier coming from tariffs, we examined the tariff for Most Favored Nation (MFN) of ASEAN members and selected South Asian countries (e.g., Pakistan and India). The simple averages of applied MFN tariff are presented in Figure 19. The average tariffs on health products was rather low in the Philippines at 2%. Countries like Brunei, Malaysia, Singapore, and Viet Nam bottomed at 0%.

Figure 19.

Applied Most Favored Nation Tariff on Health Products (2019)



Source: Analysis of WTO data

Also, the Philippine is a party of many Free Trade Agreements (FTA). The Philippines is part of the ASEAN Trade in Goods Agreement or ATIGA, in which the ASEAN member states commit to reduce tariff rates of almost all products to 0-5%. In 2017, the average tariff rate for all products covered by ATIGA was 0%. ASEAN also entered FTA with Australia, China, Japan, India, New Zealand, and The Republic of Korea. The Philippines has bilateral agreement with Japan (2008), and recently with European Union (2018).

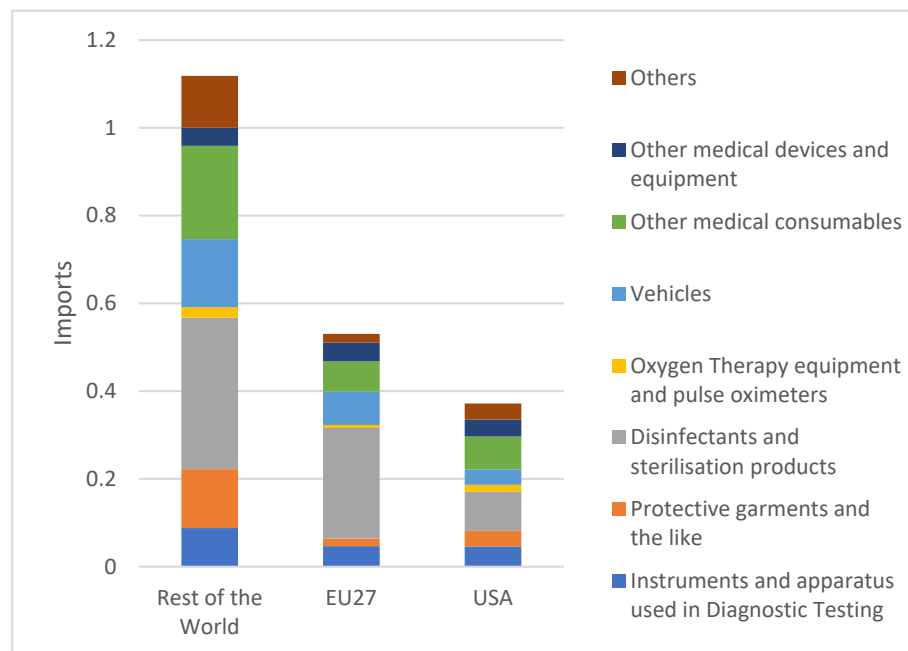
COVID-19 pandemic resulted to a shift in trade in medical goods. In 2020, imports to the country came from the rest of the world. Most imported products are the disinfectants and sterilization products (345 million US\$). Perhaps this is because of the rising demand for alcohols, sanitizers, UV lamps. The country's largest exports were medical consumables at around US\$ 200 million (See Figure 20).

In March 2020, under the Bayanihan Act (Republic Act No. 11469), the Philippine Government exempted the importation of certain medical equipment and supplies from all duties, taxes, and fees for 3 months to ensure supplies were adequate for COVID-19 response. Goods covered include personal protective equipment (PPE), laboratory equipment, medical equipment and devices, support and maintenance for laboratory and medical equipment, surgical equipment and supplies, medical supplies, COVID-19 testing kits, and other supplies as may be identified by the Department of Health.

Non-Tariff measures were imposed on essential goods related to COVID-19 in early 2020 in the APEC region. APEC countries implemented 86 non-tariff measures in 2020, and most of these measures are related to food and Personal Protective Equipment (PPE). Most economies also had cuts to tariff to facilitate trade of these important goods (APEC, 2020). Restrictive measures were more for exports than imports. Exports were prohibited almost entirely for PPE and other medical supplies such as facemasks and respirators, and quotas on exports were employed to increase the stock of domestically

produced PPEs retained. This may be because economies wanted to maintain supply of essential goods. NTMs related to imports, on the other hand, were facilitating rather than restrictive, and it may be related to the shift to modernization and digitalization of processes (APEC, 2020).

Figure 20.
Philippine imports and exports of medical related products to selected regions, 2020
(in billions United States dollars)

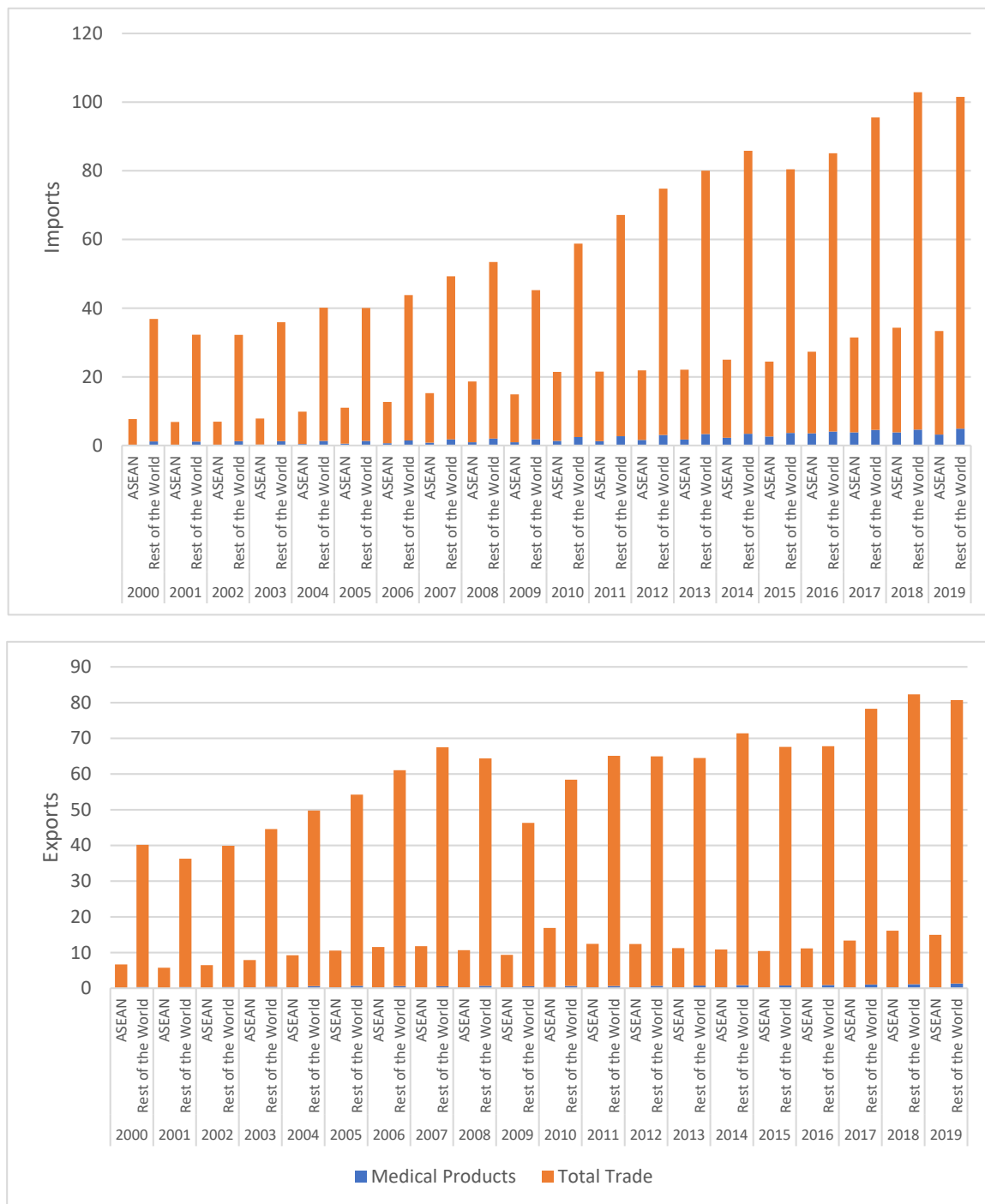


Source: UN COMTRADE, using WCO/WHO Classification

Note: No disaggregated data for ASEAN and China available for 2020. Not all countries have reported data already.

The total value of trade in the past decade is increasing. The share of trade in medical-related products remained stagnant. In 2019, the total value of imports from ASEAN was 30 billion US\$, a 25% increase in 2010; while imports from the rest of the world were 96 billion US\$ in 2019, 37% increase from 2010. However, imports of medical products from ASEAN only hovered from 0.2 billion in 2010 to 3.1 billion in 2019, and 1.2 billion to 5 billion for the rest of the world. This trend is also seen for the exports (See Figure 21).

Figure 21.
Trade of medical related products and total, 2010-2019
(in billions United States dollars)



Source: UN COMTRADE, using WCO/WHO Classification

2. Cross-border supply of services (Mode 1)

How does cross-border supply of services affect health care? Examples of cross-border supply of service are the emerging industry of telemedicine, and the increased outsourcing of healthcare service—medical transcription. The delivery of cross-border telemedicine can possibly improve healthcare access to cater the underserved populations and reach remote areas, which are the areas that usually are understaffed as well (Chanda, 2002). In addition, the quality of healthcare services given through this may also be improved as this enables more supply of providers in the network with various experiences and competencies.

Telemedicine, as defined by the World Health Organization, is the delivery of healthcare service where the health care provider is distant from the patients, and information and communication technology (ICT) is used to deliver exchange of information needed for diagnosis, treatment, and disease prevention, monitoring and evaluation, all for improving the health of individuals and their communities. Telemedicine has different classifications and forms (See Table 5 and Table 6). For each classification of telemedicine, different forms may be done. The most common form is teleconsultation, where a patient seeks healthcare consultation through various modes such as video conferencing, mobile messaging apps, through the use of the internet. The payment will also be done online through various available payment channels.

Table 5.
Samples of telemedicine classification

Classification	Definition
<i>Tele radiology</i>	Use of ICT to transmit digital radiological images (e.g. X-ray images) from one location to another for the purpose of interpretation and/or consultation
<i>Telepathology</i>	Use of ICT to transmit digitized pathological results (e.g. microscopic images of cells) for the purpose of interpretation and/or consultation
<i>Teledermatology</i>	Use of ICT to transmit medical information concerning skin conditions for the purpose of interpretation and/or consultation.
<i>Telepsychiatry</i>	Use of ICT for psychiatric evaluations and/or consultation via video and telephone

Source: World Health Organization, 2010

Table 6.
Different forms of telemedicine service

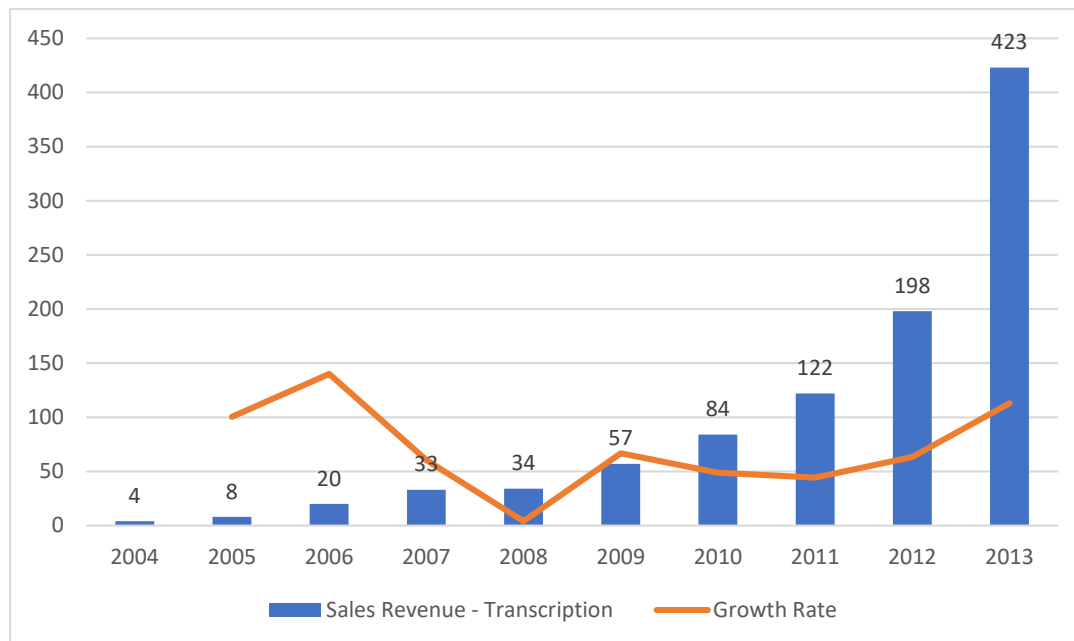
Forms	Definition
<i>Teleconsultation</i>	Medical act carried out within a distance, and occurs between a health professional and a patient.
<i>Tele-expertise</i>	This includes diagnosing and gathering second opinion from other professional. It occurs between two or more healthcare provider, and usually the output will be a diagnosis.
<i>Telemonitoring</i>	This happens when health care providers follow-up on the patient and monitor the data of the patient remotely. This can be done outside the hospital setting and data reported may be from the patient themselves, or automatically through a device.
<i>Tele-assistance</i>	This is a practice when a physician guides another physician, or healthcare provider in doing a medical act, for instance a surgery or imaging procedure.

Source: Bensemmane & Baeten, 2019

Another example is the cross-border supply of service is the outsourcing of medical transcription service. Usually, the main driver of healthcare institutions in outsourcing medical transcription is its cost-effectiveness. In addition, this removes the burden of HR training and administration and investments in specialized infrastructure. This results in the institution being more focused in giving other services that can only be done on-site, without compromising the quality of care and service they provide, since services are devolved with other parties (offshoring institution) (Dholakia & Kshetri, 2005; Flatworld Solutions, 2021).

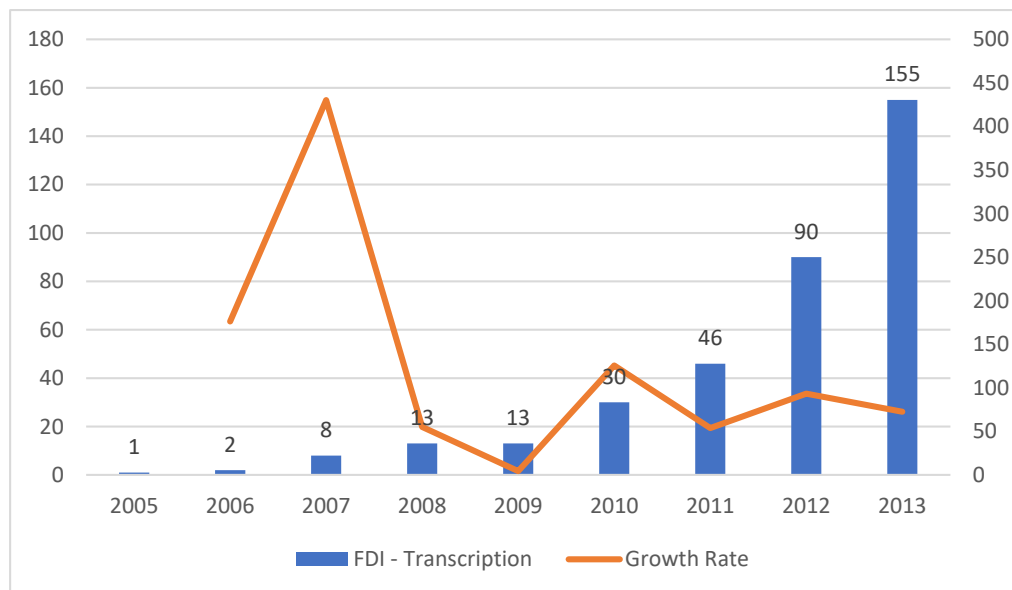
Revenue from healthcare information management (including medical transcription) services in the BPO industry is increasing in the country. In 2013, the industry revenue was 423 million US\$, a 113% increase in the past year, and increased significantly since the past decade (2004) (See Figure 22). Foreign direct investments to the same sector show the same trend (See Figure 23). The IT and Business Process Association of the Philippines projected the growth of IT-BPM sectors come 2019-2022 and the healthcare information management is projected to increase with the rate of around 7.3-10.8% in 2019-2022 (See Table 7). This is high compared to the projected growth of other outsourced sectors in the industry. The increased revenue from these outsourced healthcare services is promising in enabling the regional economic integration in the region and may potentially improve healthcare services provided in the outsourcing country.

Figure 22.
Sales revenue and growth rate from IT-BPO category transcription, 2004-2013
(in US\$ millions)



Source: Bangko Sentral ng Pilipinas, 2013 Survey of Information Technology Business Process Outsourcing (IT-BPO) Services

Figure 23.
Foreign direct investments and growth rate for transcriptions, 2004-2013
(in US\$ millions)



Source: Bangko Sentral ng Pilipinas, 2013 Survey of Information Technology Business Process Outsourcing (IT-BPO) Services

Table 7.
Philippine IT-Business Process Management services revenue growth rate, 2019-2022

Sector	Projected Growth Range (2019-2022)
Contact Center	3.3-7.4%
IT	3.2-6.7%
Global In-house Center (GIC) (telecommunications, insurance, and pharmaceuticals)	3.2-5.2%
Healthcare (remote healthcare management, preventive health, provider services)	7.3-10.8%
Animation & Game Development	7.3-12.3%

Source: IT and Business Process Association of the Philippines

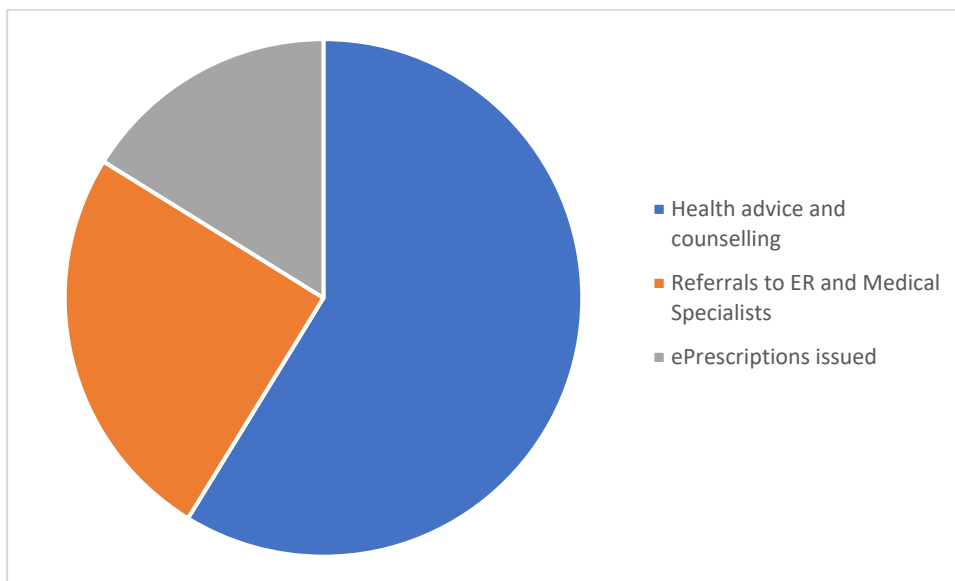
In the Philippines, the current state of telemedicine domestically is still in its infancy. Until now, the practice and conduct of telemedicine is not yet institutionalized despite initiatives over the past decade, and no rapid increase in the use of telemedicine is observed as well. It is incorporated in the Philippine eHealth Strategic Framework established in 2014, but few to little initiatives from the health sector was done since then. Until now, the Philippine eHealth Systems and Services Act is still in the senate since 2017. If passed into a law, this will regulate the practice of eHealth in the country as a whole – in which telemedicine is lodged in to.

Domestically, the COVID-19 pandemic accelerated efforts to further establish and improve the environment for telemedicine. Given the restrictions on mobility, cross-border travel, and the overwhelmed healthcare system, some people needing healthcare services weren't able to avail such.

Hence, seeking healthcare through available telemedicine channels became the means to which people gain access to these services. The adoption of telemedicine has been optional rather than a usual form of healthcare delivery pre-pandemic, but now its importance and potential to cater the population, especially in developing countries and underserved areas was realized (Sabrina & Defi, 2021; Yuan, 2020).

In 2020, the Department of Health issued policies regarding the guidelines on the use of telemedicine for COVID-19 response¹⁴. These included practice guidelines, privacy guidelines, and monitoring and evaluation framework. These policies served as a guide of the temporary establishment of a national telemedicine hotline, and other telemedicine companies in the private sector. The implementation of telemedicine focused on teleconsultations and issuance of referrals and ePrescriptions, because most of the patients are cannot visit a health facility because most were full and because of the COVID-19 scare. According to the data from the Department of Health – Knowledge Management and Information Technology Service, among the total telemedicine consultations the national hotline has received, 59% were for health advice and counselling, 25% for referral to ER or medical specialists, and 16% were for ePrescription issuance (See Figure 24).

Figure 24.
Share of medical interventions provided to total telemedicine consultations from DOH, March-December 2020



Source: Department of Health – Knowledge Management and Information Technology Service

Note: These data are from a single source only and does not include data from other telemedicine providers

¹⁴ DOH-NPC Joint Memorandum Circular No. 2020-0016: Guidelines on the use of Telemedicine for COVID-19 Response; DOH-UPM JMC No. 2020-0001 Telemedicine Practice Guidelines; DOH-DOH JMC No. 2020-0002 Privacy Guidelines on the Processing of Disclosure of COVID-19 Related Data for Disease Surveillance and Response; DOH-DOH-NPC JMC No. 2020-0024 Monitoring and Evaluation (M&E) of Telemedicine for COVID-19 Response;

3. Medical tourism (Mode 2)

How does medical tourism affect health services? The effects of medical tourism on health systems are contentious. Concerns include medical inflation and private and public sector brain drain (Pachanee & Wibulpolprasert, 2006; Wibulpolprasert Pengpaibon, 2003). However, with appropriate regulatory policies, medical tourism could provide economic benefits, including additional resources for health investment. Thailand for instance have used medical tourism as mechanism to retain and recruit health specialists, which increases the overall stock of health workers in the country (Pocock & Phua, 2011).

There is no standard definition of ‘medical tourism’. A major industry weakness is the lack of agreed upon definition and classification of medical tourists (Picazo, 2013). The Medical Tourism Association (2021) defines medical tourism as “where people who live in one country travel to another country to receive medical, dental and surgical care while at the same time receiving equal to or greater care than they would have in their own country, and are traveling for medical care because of affordability, better access to care or a higher level of quality of care.” Cormany (2008) distinguishes six types of medical tourists according to services provided: major surgery (e.g. orthopedic, heart surgery), minor surgery (e.g. dental surgeries), cosmetic surgery (e.g., rhinoplasty), diagnostics (e.g., annual checkups), alternative therapy (e.g., Ayurveda), and well-being and lifestyle (e.g., yoga).

In the Philippines, the Department of Health, based from DOH Administrative Order (AO) No. 2016-0023 provided working definitions of the type of foreigners visiting the country for medical care (i.e., medical tourism). This definition only applies to the Philippines, and there is no standard definition that is adopted in the region (See Table 8).

Table 8.
Types of foreigner availing medical care/tourism

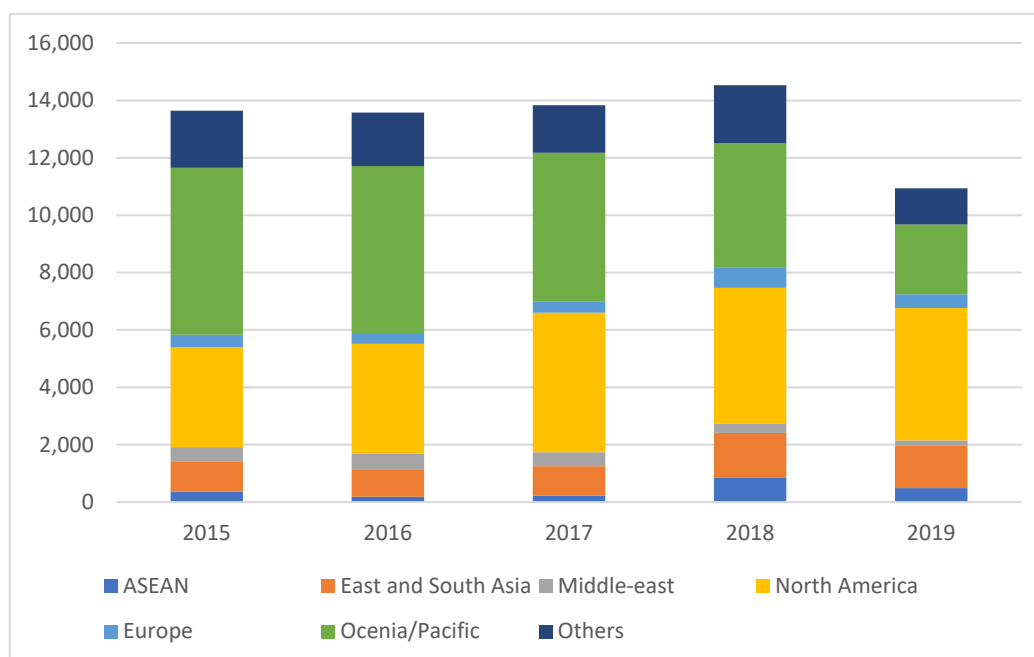
Type	Definition
Medical traveler	Individual who travels to a country to avail medical care
Medical tourist	Individual who travels to a country for tourism purposes and suddenly has to seek medical care (e.g., got injured, developed an illness, etc.)
International patient	Individual who is a non-national residing in the Philippines who will be receiving or requiring healthcare or wellness services during their stay in the country

Source: DOH-AO 2016-0023

The lack of a commonly accepted definition makes it challenging to measure the size of the market. Data from Department of Tourism (DOT, 2019) suggests that in 2019 there were 10,000 tourists visited the Philippines for medical reasons, of which only 5% came from ASEAN member states. North America, and Oceania and Pacific countries accounts for the majority of medical tourist. The data from DOT were obtained from arrival cards from Bureau of Immigration (BOI) hence might not capture the scale of medical tourists. Picazo (2013) suggests that the Philippines have received approximately 80,000 tourism in 2010, which is way below the numbers from the DOT.

Medical tourism in the Philippines revolves around ten (10) hospitals accredited by DOT under the Philippine Medical Tourism Program (PMTTP). Also, the DOT accredited hindered of clinics, spas and wellness centers (DOT, 2020). Joint Commission International (JCI) is the most established medical tourist industry accreditor worldwide. JCI accreditation is an important quality signal to attract medical tourists (Pocock and Phua, 2011). In the Philippines, five (5) private hospitals are JCI accredited.

Figure 25.
Distribution of health professional emigrants by profession, 2010-2017



Source: Department of Tourism

Thailand, Singapore and Malaysia receive large number of medical tourists annually - Thailand (1.2. million), Singapore (571,000), and Malaysia (340,000). These ASEAN member states are included in the top destination countries for medical tourism. Thailand has established a niche for cosmetic surgery, while Singapore is offering services to high end of the market for advanced treatments - mostly major surgeries.

Table 9 shows medical niches of key players in ASEAN.

Table 9.
Medical niches of MT key players in ASEAN

Countries	Niche	Top medical tourists
Thailand	Cosmetic surgery, sex change surgery, stem-cell therapy	Middle East, Indochina-Myanmar, Cambodia, Laos and Viet Nam, China, Japan, US, UK
Malaysia	Cardiac surgery	Indonesia, Singapore, Middle East
Singapore	Cardiac and neurosurgery, liver transplant, cancer	Indonesia, Philippines, Australia
Viet Nam	In-vitro fertilization, kidney transplant	Cambodia

Source: (Globalization and Health, 2011; Wallibhodome, Meepien, Pattaranukul, Suratin, & Saikrajang, 2019)

In the Philippines, establishing the country’s niche in medical tourism is still in the process. This will be vital in order to start building our market and to join the key players in medical tourism in the

region. Currently, the DOH is considering to build our niche in aesthetics, dental service, and wellness services. However, the competition in these areas are tight in the region.

4. Foreign Direct Investment in the health sector (Mode 3)

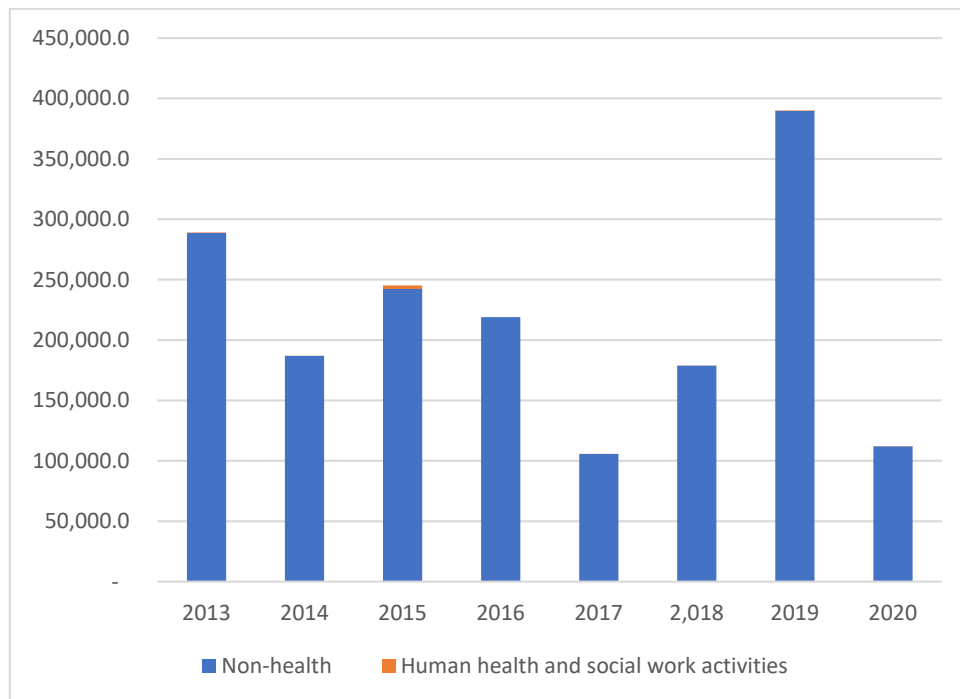
How does FDI affect health services? FDIs are an essential source of capital which will complement private investments domestically, and can aid in technology transfer and economic development. This availability of private capital may help the burden of public resources be reduced, especially those with fiscal constraints (Outreville, 2007)

Commercial presence in health services could generate resources for expanding and upgrading of health care infrastructure and technologies (Outreville, 2007). In health systems with huge health infrastructure needs (e.g., hospital beds) such as the Philippines, FDI through the private sector could be instrumental in reducing health infrastructure gaps.

The health sector is of minor importance for statistics on FDI. Examining foreign investments data from the Philippine Statistical Authority (PSA) suggests negligible foreign investments related **‘human health’ activities, which only accounts for less than 1% of the total foreign investments. In 2019, 10% of investments in the health sector are foreign in origin and the rest are domestic.**

Domestic and foreign investments in ‘human health’ have sharply declined in 2020, which could be attributed to the pandemic. Investment in health sector investments have declined from Philippine Pesos 3, 200 million in 2019 to PhP 2,500 million in 2020, a 21% annual decline. Most of the investments in 2020 were domestic sources. No recorded foreign investments in 2020. To supplement this data, it could be informative to assess the role of multinational and transnational companies operating in hospital management, laboratory services, and medical equipment.

Figure 26.
Foreign investments for health sector
(in PhP millions)



Source: Analysis of data from Philippine Statistics Authority

Expansion of hospital services is one of the areas in which FDI could directly affect the provision of healthcare services. Box 1 provides case studies on hospital FDIs Thailand and India. The Philippines have also similar examples, such as the investment of Bumrungrad International Hospital on Asian Hospital in Manila in 2010. Recently, KKR and GIC have completed their investments in

Box 1. Experience in Thailand

The Bumrungrad International Hospital in Thailand is an example of a foreign-owned hospital in Asia. The hospital was known for its medical tourism offering lower-cost and state-of-the-art medical care. Although a majority of their patients still cater to the people of Thailand, the hospital provides service to people from the United States, Europe, and Middle East, who have problems with access and prefer lower medical fees. Important features of the hospital include a very strong quality system following Total Quality Management approach supported by an enterprise solution Information and Communication Technology system.

However, with foreign investors offering higher wages with better equipment, the impact of these foreign-owned hospitals is to attract human resources of health away from the public sector. With around 100,000 increase of foreign patients in private hospitals in Thailand, there was an internal brain drain of 240-700 medical doctors away from the public health system (Arunanondchai and Fink, 2007; OECD, 2020).

FDI share in India

Starting 2000, India allowed up to 100% foreign equity for the hospital sector. In addition, the country implemented the following: relaxed import duties on medical equipment and technology, long-term and cheaper loans for private healthcare institutions, and social health insurance for accessing private healthcare services. With those measures, private investments for the health sector grew. In 2015, the International Finance Corporation and the World Bank recognized the Indian private healthcare industry as the second most popular destination for global investments in healthcare.

Most of the foreign companies/individuals entered India through joint ventures with a local company. Analysis showed that the majority of foreign investments were spent on providing allopathic services while expenditures on clinical research, drug development and diagnostic services were minimal. Multi-specialty and super-specialty hospitals attracted the maximum private investments. Moreover, a larger percentage of the investments have been made in hospitals having more than 100 beds compared to fewer beds.

When the share of international investments (FDI) in the hospital sector is compared to government spending, it is observed that international investments remain marginal. In 2013, government expenditure on healthcare in India is around 1.04 percent of GDP (about ₹957 per capita), while the cumulative amount of total FDI inflow from 2000 to 2013 is only around ₹92.7 per capita. The cumulative FDI is only 10% of total government spending in India. Foreign investments in the hospital sector constitute only a relatively small share compared to government spending on healthcare (Hooda, 2017).

Metro Pacific Hospital Holdings Inc, one of the largest private hospital and healthcare network in the Philippines with 14 hospitals and 3,200 beds.

5. Mobility of health workforce (Model 4)

How does mobility of health workforce affect health services? In theory, intra-regional mobility of health workers contributes to the efficient and productive use of health labor force and facilitates transfer of technical expertise knowledge. Labor mobility is an integral part of the AEC and includes policies that ease the movement of students, tourists, skilled professionals, among others.

The Philippines is recognized to be one of the highest exporters of workforce. According to the Philippine Statistics Authority (PSA), there are 2.2 million Overseas Filipino Workers (OFW) in 2019. This number excludes Filipinos emigrating to other countries as permanent residents. About 81% of OFWs goes to Asia, particularly Hong Kong. Among the 81%, about 21% went to East Asia (e.g. Hongkong), 51% went to Middle-East, 8% went to ASEAN countries (e.g., Singapore and Malaysia) (PSA, 2020), and the rest went to OECD countries. Most OFWs in East Asia works in elementary occupation, while most health professionals are deployed in West Asia.

The lack of available data makes it challenging to assess the scale of migration among health workers within ASEAN. Patching available data shows health workers only represent a small portion of the overall intra-ASEAN migration. Within the ASEAN, Singapore receives a large number of Filipino health workers. Data from the Singapore Nursing Board (SNB) show increasing number of health professionals migrating to Singapore from other ASEAN countries in recent years (See Table 10).

Table 10.
Nurses in Singapore, by citizenship

	2003	2010	2017	2019
Singapore citizens	12,434	18,176	23,063	24,746
Malaysians	335	468	2,237	2,351
Filipinos	1012	1,760	5,115	5,245
Myanmar	131	165	793	877
Chinese (PRC)	601	578	654	542
Indian	171	220	573	574
Others	147	208	237	274

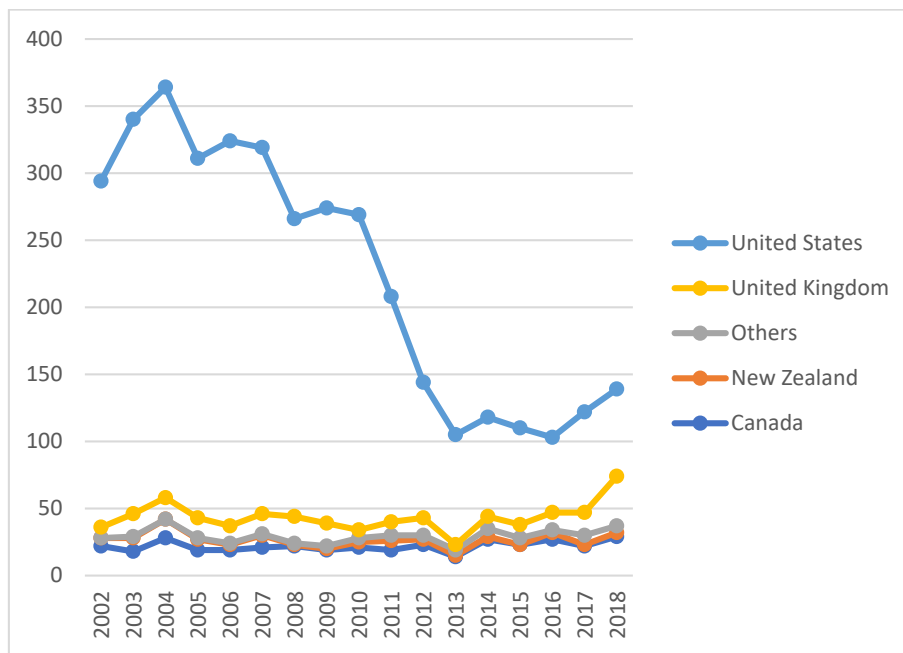
Source: Singapore Nursing Board annual reports

High-income countries remain the main destination countries of Filipino health professionals as permanent residents. Compare to other ASEAN countries, the Philippines supplies the highest stock of foreign trained doctors and nurses¹⁵ in major OECD countries. The Philippines ranked 6th in the share of migrant doctors.

¹⁵ Stock of foreign-trained nurses and doctors are the “number of professionals who have obtained their first qualification in another country and are entitled to practice in receiving country” (OECD 2020, p. 1).

Filipino doctor and nurses seek authorizations to practice in major OECD countries. The annual inflow¹⁶ of doctors from the Philippines to major OECD countries fluctuated from 2002 to 2018. Highest inflow to the United States was seen in the past decade, but shows a sharp decline from 2010 to 2013. While inflow of doctors to other major OECD countries including the United Kingdom, New Zealand, and Canada showed a stagnant trend (See Figure 27). The same pattern is also seen for the nurses.

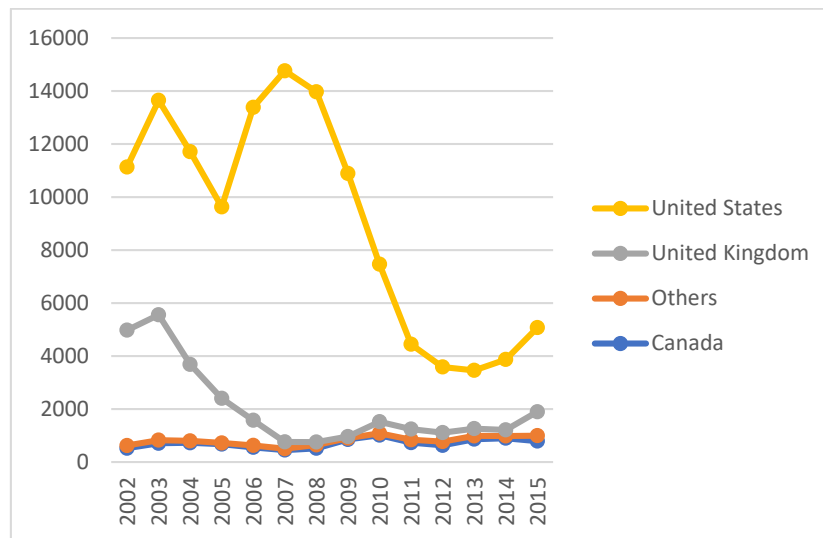
Figure 27.
Annual inflow of doctors to specified country, 2002-2018



Source: OECD Statistics

¹⁶ Annual inflow is the “number of professionals who have obtained their first qualification in another country and are receiving new authorization in a given year to practice in the receiving country” (OECD 2020, p.1).

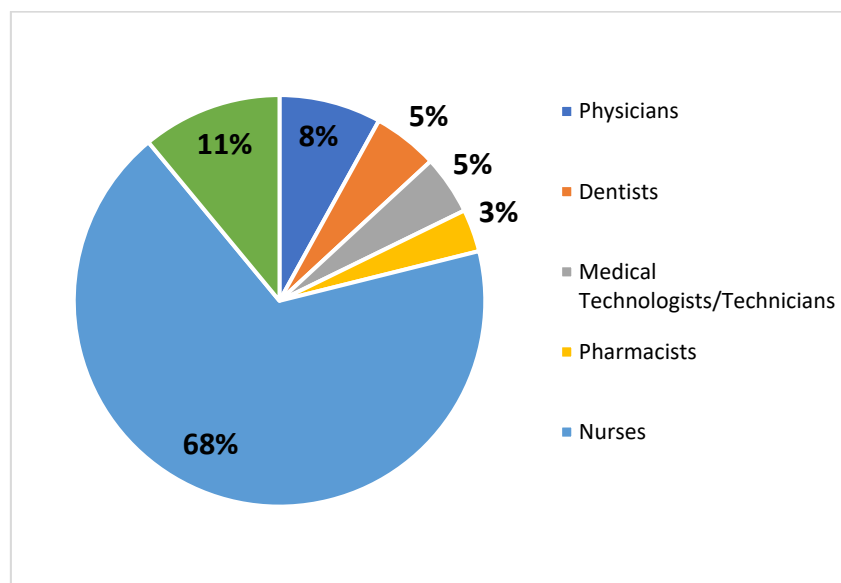
Figure 28.
Annual inflow of nurses to specified country, 2002-2015



Source: OECD Statistics

Professional nurses accounts for the majority of emigrants. Among the cadres, 68% of them are nurses followed by allied health professionals¹⁷ and physicians at 11% and 8%, respectively (See Figure 29).

Figure 29.
Distribution of health professional emigrants by profession, 2010-2017



Source: Commission on Filipino Overseas

¹⁷ Other allied health workers include Nutritionist-Dietitians, Chiropractors, Physical and Occupational Therapists, Midwives, Veterinarian, and other related workers.

The Philippine government restricted international movement of health workers as part of its effort to control COVID-19 pandemic. The Department of Labor and Employment (DOLE) issued a circular order in April 2020, which the temporary overseas deployment ban are medical doctors, nurses, medical technicians, and scientists. The deployment ban provided power for the government to tap more health workers as additional manpower as the country combats the novel coronavirus outbreak. The ban was lifted in September 2020.

B. Challenges in the trade of health goods and services

1. Challenges in the cross-border supply of services

Cross-border supply of services (e.g., telemedicine) is faced with a lot of barriers that would require domestic reforms on key areas of the health system (governance, human resource, financing, and service delivery (e.g., infrastructure)). Reforms in the medium to long-term should revolve around adoption of digital health within the country's health system strengthened by regional and global collaboration.

(a) Governance

- **Telemedicine in the region is faced with several regulatory bottlenecks.** A scoping review of telemedicine guidelines in Southeast Asia done by Sabrina and Defi in 2021 revealed that although most of the SEA countries have existing guidelines, its depth and content vary. Only Singapore has the most comprehensive guideline in the region, and is comparable to guidelines of other countries around the world. Common challenges of countries in adopting telemedicine include issues in human resource, health financing, lack of ICT infrastructure and high-speed internet, among others (Sabrina & Defi, 2021). These requirements relating to ICT and internet is also an important domain in medical transcription services.
- **In the Philippines, there is no specific regulatory framework for telemedicine.** The current practice of telemedicine (especially during the COVID-19 pandemic) tiptoed with current regulations from different agencies. The lack of specific regulation for the practice of telemedicine makes the domestic implementation vague and thus limiting cross-border conduct of telemedicine activities.
- **Electronic medical records domestically are not interoperable.** Despite having an existing Philippine Health Information Exchange, it is not adopted as the overarching framework for the interoperability of health information across facilities.
- **Cross-border data privacy and sharing regulations are also unclear.** The country is bound by the Data Privacy Act of 2012 (Republic Act 10173) which safeguards the sensitive information (e.g., medical records) of Filipinos. It states that the consent of the concerned parties should be gathered prior to sharing sensitive personal information. The law also limits off-site access to just 1,000 records at a time¹⁸. Without clear specific guidelines for the conduct

¹⁸ Based on the Implementing Rules and Regulations of the Data Privacy Act of 2012

of telemedicine, this might become a barrier because of different interpretations during implementation.

(b) **Human resources**

- The existing law (i.e., Medical Act of 1959) is ambiguous and does not explicitly stipulates the practice of medicine at a distance. Section 10 (a) of the law states that the practice of medicine should be done physically, and this might impede telemedicine until the law is revised (Veloso, Mitra-Ventanillal, Navarro, Rovero, & Tan, 2019). It was only during the COVID-19 pandemic when temporary guidelines were released in order to cater telemedicine services; thereby allowing any physician in the country with valid license to practice medicine can engage in telemedicine (RP, 2020).
- **Currently, our laws are restrictive on the practice of healthcare providers not present in the country to Filipino residents.** Although three (3) mutual recognition arrangements for health professionals (e.g., physicians, nurses, and dentists) are in place, these were designed at a time where foreign practitioners need to travel physically to another country to acquire certification, defeating the purpose of MRAs, which is to harmonize practice across the region. The lack of specific guidelines or national legislation regarding the practice of Foreign practitioners on Filipino residents assumes that we may not be very liberalized on the mobility of physicians.

(c) **Financing**

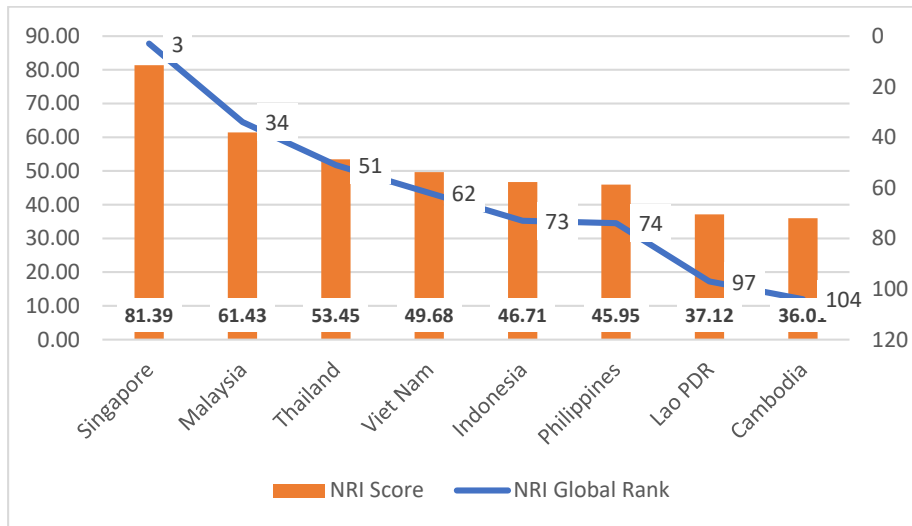
- **Not much investments are poured into telemedicine.** This may stem out from the lack of institutionalized framework; hence, it is not seen as a priority for budget allotment. Significant investment from the Department of Health were in response to the COVID-19 pandemic, and most of these resources were allocated for infrastructure bases in the Local Government Units. Even after the COVID-19, the government should also allocate financial resources in order to strengthen the implementation of telemedicine domestically.
- **There is no clear mechanism on how eHealth services (e.g., telemedicine) is financed.** Telemedicine is currently financed through out-of-pocket spending. Some private health insurance reimburses telemedicine, but practice remains variable across healthcare providers.

(d) **Service Delivery**

- **Implementation in health facilities are fragmented and lacks seamless integration and coordination.** Health facilities (i.e., primary care facilities, hospitals, laboratories, pharmacy, ancillary facilities) are operating in silos. Even among publicly-owned health facilities remain fragmented in terms of administrative, technical and clinical capacity. The lack of integration amongst health facilities impedes referral systems and inter-facility sharing of digital health data.
- **In terms of infrastructure, the Philippines may not be ready yet to keep up with its ASEAN neighbors.** Network readiness index is a key metric of the use of ICT for development and competitiveness (NRI, 2020). It may be used to quantify and to benchmark readiness of countries in providing cross-border supply of services (e.g., telemedicine, medical transcription) (Sabrina & Defi, 2021). According to the NRI data in 2020, Singapore have the

highest score of 81.39 followed by Malaysia and Thailand, while the Philippines lags behind at sixth rank with a score of 45.95. Competing globally, Philippines ranks 74th and while Singapore ranks 3rd (See Figure 30).

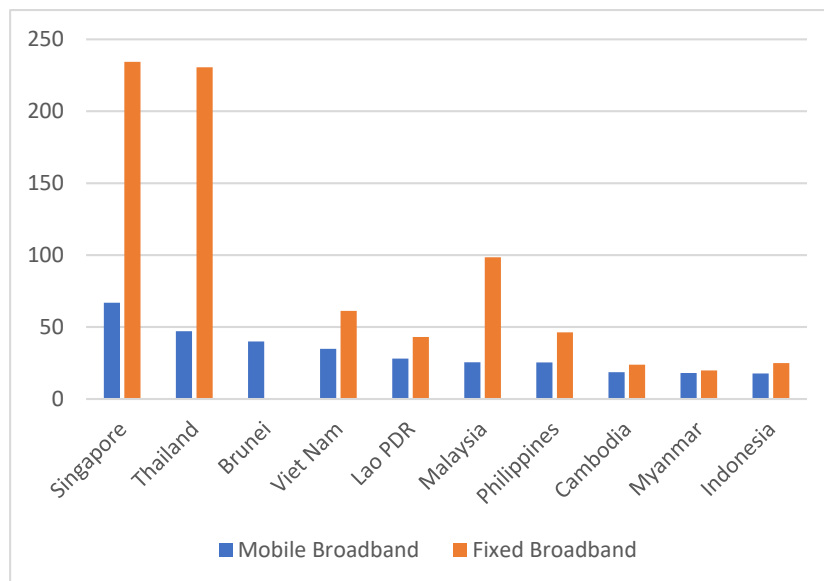
Figure 30.
Network readiness index score and global rank of ASEAN countries, 2020



Source: NRI 2020

Figure 31 shows the average mobile and broadband speeds of ASEAN countries. Philippines also lags behind at 7th rank while Singapore ranks 1st, consistent with their NRI score. This implies that Philippines, together with other countries in the ASEAN region, should make efforts to improve their ICT infrastructure and internet speeds in order to be ready for these services and to harness regional integration.

Figure 31.
Mobile and fixed broadband speeds, ASEAN countries, March 2021
(in Mbps)



Source: Speedtest Global Index

Note: Brunei have no data for fixed broadband speeds

Given these limitations at the domestic front, it is surmised that it is much challenging to facilitate cross-border supply of these services in the region. There should be harmonization of telemedicine guidelines in the region so that it could be applied by countries domestically. Most countries had policy improvements due to the COVID-19 pandemic and resulted to reduced barriers to telemedicine (MMC, 2020; Sabrina & Defi, 2021). However, this should still be strengthened and harmonized. Moreover, a robust telecommunications infrastructure is indeed vital in enabling the emergence of telemedicine (Sabrina & Defi, 2021; Ministry of Health, 2017). If a country is lacking with such strong infrastructure background, telemedicine may not be cost-effective (Chanda, 2002).

2. Challenges in the implementation of MRAs

To facilitate mobility of health workers in the region, ASEAN member have earlier adopted Mutual Recognition Arrangements (MRAs). MRAs allow skills accreditation to be recognized across ASEAN and permit professionals to work outside their country. MRAs do not harmonize the technical requirements of ASEAN. It only recognizes the equivalence and the results of conformity assessment procedures (ASEAN, 2014). MRAs aims to address the shortage and surplus of health workers in the region, and improve the quality of professions and the services they provide (Te, Griffiths, Law, Hill, & Aneer, 2018).

The Philippines concluded eight MRA and three of these are related to the health workforce: ¹⁹ nursing services (2006), dental practitioners (2009), and medical practitioners (2009). While MRAs are in place,

¹⁹ ASEAN MRA on Engineering Services (2005), ASEAN MRA on Nursing Services (2006), ASEAN MRA on Architectural Services (2007), ASEAN Framework Arrangement on Mutual Recognition of Surveying Qualification (2007), ASEAN MRA on Dental

intra-regional mobility of health workers negligible. In practice, actual implementation was rather difficult because of the following challenges:

- **Inequality concerns:** MRA is perceived to exacerbate inequalities within region as health workers move from poorer member states to richer states (Sriratanaban, 2015; Van Mihn, Pocock, Chaiyakunapruk, & Chhorvann, 2014). Also, a vast majority of intra-ASEAN migration is from the low-skilled workforce. Hence, this may leave migration between high-skilled and low-skilled workers unbalanced (Orbeta, 2013). Hence, putting MRAs in the domestic and political agenda becomes tremendously challenging.
- **Occupational protectionism:** This barrier occurs when health professional groups ‘safeguard the home market’ by preventing the foreign health labor force to practice in the country. In the Philippines, the constitution appears to be the biggest hurdle, which prohibits foreign doctors to fill up professional posts (Aldaba, 2013; Te, Griffiths, Law, Hill, & Aneer, 2018).
- **Variable recognition of health professionals across ASEAN states:** A nurse in the Philippines or Thailand, who must hold a 4-year bachelor’s degree to practice the nursing profession is different from a nurse in Indonesia who must hold only a 3-year diploma after senior high school. This appears to be a problem in other health professionals (Gunawan & Aunguroch, 2015; Te, Griffiths, Law, Hill, & Aneer, 2018).
- **Weak institutional capacity of government agencies to implement MRAs:** This is a result of scarce funding in government agencies, lack of legislative frameworks, and limited technical capacity of staff to leverage MRAs to different stakeholders (Mendoza & Sugiyarto, 2017)
- **Low incentive to move:** Low mobility rate in other regional blocs is hindered by factors, taxation and social protection problems, language differences, and other non-monetary costs (i.e., psychological cost of leaving the family). **The large socio-economic and cultural diversity in ASEAN, these barriers could explain the low mobility rates in the ASEAN** (Te, Griffiths, Law, Hill, & Aneer, 2018; ADB, 2019).

3. Challenges in the implementation of FDI in health

- **Foreign ownership restriction is a major challenge in promoting foreign investments particularly in the hospital sector:** The RA No. 7042 and RA 8179 known as Foreign Investments Act which stipulates that foreign investments in the health facilities, which has public health implications, is under the Negative List B. This means that foreign ownership in health facilities is limited to a maximum of 40% of the equity capital. Some local policies support foreign investments particularly in special PEZA-registered medical tourism zones. These zones allow 100% equity across the health sector for foreign investors. **However, the capital equity threshold for manufacturing and distribution of medical goods, devices, and pharmaceuticals are 100%.**
- **Inequality concerns:** Policymakers typically raise concerns on the negative impact of FDI on health systems, and FDI could be perceived as counterproductive of UHC because it exacerbates dual health system (public-private split), brain drain in public hospital systems, and cream skinning. These perceived threats weakens political support not only among decision makers but also health advocates (Mantovani & Wermelinger, 2020).

Practitioners (2009), ASEAN MRA on Medical Practitioners (2009), ASEAN MRA on Tourism Professionals (2012), and ASEAN MRA on Accountancy Services (2014).

Table 11.**Advantages and Disadvantages of Foreign Investments**

Advantages	Potential threat
Alleviates pressures on government for capital investment (Debt-free investment in the health sector) Brings medical technologies and innovations Increases capacity for health goods and services Reallocation of government expenditure to the public sector Reduction of international brain drain Reduction of imports of health services	Worsens inequality – drawing away resource from public health services Can generate or aggravate two-tier system (i.e. high-quality care for the rich and low-quality for the poor) Generation of internal brain drain by attracting better quality HR away from domestic public and private sector It may influence the government to over-invest in technology at the expense of other social and public health needs.

Source: Organisation for Economic Co-operation and Development, 2020

4. Challenges in the implementation medical tourism

- **Inequality concerns:** Medical tourism is perceived by health advocates to exacerbate inequality as it promotes dual health system (e.g. public and private split), brain drain in public health systems, and medical inflation (Pocock and Phua, 2011). It could be highly regressive because payments are usually out of pocket; patients' health insurance are not typically portable.
- **Regulatory ambiguity and limited capacity:** Based on the experience of countries with advanced medical tourism industry, strong government role in regulating and promoting medical tourism is critical. In the Philippines, the regulatory functions of Department of Health (DOH) and Department of Tourism (DOT) must be clear and properly delineated. A small technical office in DOH handle medical tourism, but a stronger technical capacity is needed to set the framework, policies/direction, and standards of the industry (e.g., stringent malpractice law, promotion of price transparency and predictability).
- **Lack of data to measure the scale of medical tourism industry.** Lack of statistics on this matter will make it hard for the policymakers and program implementers on how to proceed on improving or establishing strategies for medical tourism in the country to mature.

V. Conclusion and moving forward

In this paper, we first outlined the performance of the Philippine health sector relative to other ASEAN member states in terms of health outcomes and access indicators. The assessment reinforces the need to implement critical health reforms in addressing poor access to health facilities, health workers, and medical goods. Then, this is followed by discussion of regional economic integration and cooperation, and how it nexus in improving health system performance.

While in principle, openness to trade in medical goods and services reduces inefficiencies, and improves quality of healthcare services, decision makers and advocates have perceived concerns on its negative repercussion, which restrict the adoption and implementation of critical trade and health reforms.

In this section, we identify common ground, and recognize that economic integration and cooperation is beneficial with proper policies and regulations in place. We identify our recommendation under each mode:

(1) Strengthen implementation of digital health strategies and health governance structure domestically (both national and local level) first and then strengthen intra-regional collaboration of digital health efforts including digital trade

The Philippines have existing digital health strategic frameworks since the past decade. The Department of Health (DOH) has adopted the eHealth Strategic Framework (2014-2020), which articulates the vision of the country in terms of digital health. Also, eHealth efforts are included in the Updated Philippine Development Plan 2017-2022. However, specific actions concerning service delivery, financing, human resource, and legislative requirements of digital health have yet to be articulated. Moreover, the country has embarked in a major health reform through the passage of the UHC Act, in which digital health plays a major role. Any digital health reforms therefore must be aligned with the goals of the Act.

- The eHealth Systems and Services Bill should be supported by the Congress to serve as the regulatory framework and to institutionalize telemedicine domestically. This should be supported by comprehensive clinical practice guidelines especially in practice of teleconsultations. This will steer further efforts for telemedicine because having it institutionalized will provide the necessary regulatory environment for the conduct and practice of eHealth solutions.
- **Service delivery reforms should be explored to facilitate integration and coordination across health facilities.** The *UHC Act* (2019) addresses this long-standing challenge and provides the legal basis and incentives through the creation of provincial healthcare provider networks (or HCPNs), but critical provisions of the law have yet to be fully implemented. The national government should design effective grant and incentive schemes to local governments to facilitate the adoption of digital health. These grants could be used by local governments to finance infrastructure gaps in IT hardware, internet connectivity, human capacity, and other needed enabling investments.
- **Interoperability of electronic medical records (EMRs) domestically should be enabled.** The Philippine Health Information Exchange should be adopted as the overarching framework for the interoperability of health information across facilities (e.g., hospitals, clinics,

laboratories, pharmacies). This will facilitate harmonized data sharing among healthcare providers regardless of EMR system. Also, broad-based adoption of EMR facilitates efficient, accurate, and standard submission of surveillance health data to the DOH. The national government should include interoperability of EMR as an integral component of licensing requirements and quality of care improvement efforts of health facilities.

- **Health financing reforms for telemedicine should be facilitated.** Benefit coverage of the national health insurance program (e.g., PhilHealth) and private insurance should cover outpatient services, including telemedicine. The expansion of the benefit package however requires clear and specific operational guidelines from PhilHealth, Department of Health (DOH), and Food and Drug Administration (FDA), which identifies the bounds of telemedicine practice in the country.
- **Making telemedicine and EMR a norm among healthcare providers.** The conventional practice of medicine is done with face-to-face interaction between patients and providers. However, the changing landscape brought by the COVID-19 pandemic should encourage providers to deliver healthcare services using digital health. But this requires substantial changes in clinical practice and norms. Mainstreaming digital health can be facilitated by offering capacity-building activities to current medical workers (including the administrative staff of doctors and nurses), incorporating telemedicine in medical education and training curricula, and adding certifications for telemedicine practice in continuing professional development (CPD). These action points are needed not only to improve telemedicine skills, but assure quality of care.
- **Privacy laws should be revisited.** The lack of incentives of health facilities to coordinate and integrate reflects the widespread perception that health facilities must not be shared because of possible violation of existing privacy laws. While privacy and security must remain utmost priorities, the government should examine any unnecessary interpretation of the law that impedes coordination and integration. The government should adopt legal and ethical frameworks and guidelines that facilitate data sharing amongst health facilities but assuring patient safety, data security, appropriate use of health data, privacy data recoverability, as well as protection of intellectual property rights.

After the implementation and the governance of digital health is strengthened on the domestic front, collaboration and integration across the region should be flourished to improve healthcare access, accelerate efforts for universal health coverage, and to encourage collective efforts of different countries in establishing regional standards on health information systems and eHealth regulations, health professional qualifications, by sharing of knowledge and best practices.

- The country should establish specific and clear guidelines on regional standards and interoperability of eHealth systems and regulations. This includes standards for health/medical records, data privacy, and cross-border data sharing. Interoperable eHealth systems will greatly improve quality and safety of care due to intensified coordination, and less labor-intensive both for patients and providers since the user need not to input all information again across different facilities/platforms. On the other hand, with harmonized policies on cross-border data sharing, patients will be at ease that their sensitive information is safe and kept private.
- **Establish a system in sharing best practices and knowledge on new and modern digital health implementation methods.** The current COVID-19 pandemic showed the importance of high-level coordination and knowledge sharing across the region as it helped mitigate and lower

the risk of cross-border transmission of virus. Moreover, regional efforts to manage emerging health risks like this will help countries on their national strategies in responding to threats. It is then noted that for digital health integration to prosper in the region, countries should also build a knowledge-sharing mechanism in order to harmonize systems and regulations, share exemplary practices, and support each country for eHealth efforts.

(2) Facilitate FDI especially in the hospital sector

Currently, the Philippines has one (1) bed per 1,000 population - rate similar to most low-income countries in the world. According to the 2020-2040 Health Facility Development Plan (HFDP) of the Department of Health, the Philippines need to double the number of beds in the next 20-40 years to meet the health infrastructure gap. The large health infrastructure gap cannot be financed by the government alone. The PHFDP therefore identifies the immense role of the private sector to complement scarce public resources. **Here, the government needs to attract both domestic and foreign investments to help the government in closing health infrastructure gaps in the medium to long-term.** For this to materialize, the government should consider the following:

- **Increase equity threshold for hospital foreign investments to 100%.** The government may want to impose this especially in provinces where there is dire need.
- **The government may want to impose additional tax breaks for hospital investments (both local and foreign),** the government may consider imposing these perks in provinces where there is dire need of health facilities.
- **Accelerated investment approvals** (health infrastructure, services and medical equipment)

FDI is perceived to could exacerbate inequalities. This could be addressed through genuine health financing reforms. PhilHealth should be the main source of financing for both private and public health facilities. Access to health facility should not be based on capacity to pay.

FDI is perceived to draw resources from the public resources. This could be addressed again by health financing and HR remuneration reforms.

(3) Develop and implement a well-thought medical tourism program.

- **Update and amend regulations and framework for medical tourism.** There should be regulations clearly delineating the roles of the Department of Health and the Department of Tourism in medical tourism programs.
- **Identify a niche in the medical the medical tourism that complements UHC.** For instance, this include wellness center, aging and retirement homes as this create communities and ecosystem that promotes health communities
- **Use tax revenues from medical tourism to finance UHC.** This will provide avenue where we can increase the financing sources in order to sustain our endeavors in achieving Universal Health Care.

(4) Strengthen cross-border mobility of health human resource

Currently, there are established three (3) mutual recognition arrangements (MRAs) for mobility of health professionals in the ASEAN region. However, this has to be strengthened and complemented with our existing regulations in order for regional integration to prosper.

The country should explore liberalizing the practice of foreign professionals. Currently, our laws are restrictive on the practice of healthcare providers not present in the country to Filipino residents. Although three (3) mutual recognition arrangements for health professionals (e.g., physicians, nurses, and dentists) are in place, these were designed at a time where foreign practitioners need to travel physically to another country to acquire certification, defeating the purpose of MRAs, which is to harmonize practice across the region. Expert discussions regarding this matter should be initiated, as this could help augment the country's health system, while establishing regulations to safeguard the public's safety, which is of utmost importance.

The country's poor performance in improving health outcomes brought by a lot of barriers in the different elements of the health systems infers the need for robust domestic reforms in order to liberalize the country for cross-border health integration. Pushing for regional health integration will be relevant to the country's pursuit of universal health care, and openness to regional integration may be a way for the domestic system to be resilient in facing disasters (e.g., pandemics), and to foster effective health-crisis management and achieve Sustainable Development Goal 3 – which is to ensure healthy lives and promote wellbeing for all and at all ages.

Bibliography

Aldaba, Rafaelita (2013). ASEAN Economic Community 2015: Labour Mobility and Mutual Recognition Arrangements on Professional Services. Discussion Paper Series, No. 2013-04. Makati: Philippine Institute for Development Studies.

Allen, Luke, and others (2016). Poverty and risk factors for non-communicable diseases in developing countries: a systematic review. *The Lancet*, Volume 388, Supplement 2, S17, ISSN 0140-6736, [https://doi.org/10.1016/S0140-6736\(16\)32253-X](https://doi.org/10.1016/S0140-6736(16)32253-X).

Asia-Pacific Economic Cooperation (2020). Non-Tariff Measures (NTMs) on Essential Goods during COVID-19 in the APEC Region. Committee on Trade and Investment (CTI). Available at <https://www.apec.org/Publications/2021/04/Non-Tariff-Measures-on-Essential-Goods-during-COVID-19-in-the-APEC-Region>. Accessed April 2021.

Asian Development Bank (2019). Skilled Labor Mobility and Migration. Available at <https://www.adb.org/sites/default/files/publication/517601/skilled-labor-mobility-migration-asean.pdf>. Accessed on December 2020.

_____ (2020). How countries in Asia and the Pacific are working toward universal health coverage and controlling COVID-19. Available at <https://www.adb.org/news/features/how-countries-asia-and-pacific-are-working-toward-universal-health-coverage-and>. Accessed on December 2020.

Association of Southeast Asian Nations (2012). ASEAN+3 Field Epidemiology Training Network. Available at http://www.aseanplus3fetr.net/read_more_pdf/FETNP1-10.pdf. Accessed December 2020.

Association of Southeast Asian Nations (2014). Guidelines for the Development of Mutual Recognition Arrangements. Jakarta: ASEAN. Available at <https://asean.org/storage/2012/05/Guidelines-for-the-Development-of-Mutual-Recognition-Arrangements.pdf>. Accessed December 2020.

_____ (2015). Report of the ASEAN Regional Assessment of MDG Achievement and Post-2015. Jakarta: ASEAN. Available at <https://www.asean.org/wp-content/uploads/images/2015/November/asean-publication/10.%20October%202015%20-%20Report%20of%20the%20ASEAN%20Regional%20Assessment%20of%20MDG%20Achievement%20and%20Post-2015%20Development%20Priorities.pdf>. Accessed December 2020.

_____ (2017). ASEAN Health Cluster 3: Strengthening Health System and Access to Care. Available at https://asean.org/wp-content/uploads/2017/02/Agd-8.3_3.-ASEAN-Health-Cluster-3-Work-Programme_Endorsed-SOMHD.pdf. Accessed December 2020.

_____ (2017). ASEAN Statistical Report on Millenium Development Goals. Jakarta: ASEAN. Available at https://asean.org/storage/2012/05/ASEAN_MDG_2017.pdf. Accessed March 2021.

_____ (2020). ASEAN seals roadmap for future-ready human resources. Available at <https://asean.org/asean-seals-roadmap-future-ready-human-resources/>. Accessed December 2020.

_____ (2021). Risk Assessment for International Dissemination of COVID-19 to the ASEAN Region. Available at https://asean.org/storage/COVID-19_Report-of-ASEAN-BioDiaspora-Regional-Virtual-Center_1Mar2021.pdf. Accessed December 2020

_____ (2018). ASEAN Post-2015 Health Development Agenda. Jakarta: ASEAN. Available at https://asean.org/?static_post=asean-post-2015-health-development-agenda-2016-2020. Accessed March 2021.

_____ (2019). ASEAN Integration Report. Jakarta: ASEAN. Available at <https://asean.org/storage/2019/11/ASEAN-integration-report-2019.pdf>. Accessed March 2021

Association of Southeast Asian Secretariat (2020). The ASEAN Stronger Health Systems: Our Lifeline in a Pandemic. Association of Southeast Asian Nations. Available at <https://asean.org/storage/The-ASEAN-Special-Edition-Nov-Dev-2020.pdf>. Accessed March 2021.

Bazyar, Mohammad, and others, (2020). Supply-and-demand projections for the health workforce at a provincial level from 2015 to 2025 in Ilam, Iran. *Proceedings of Singapore Healthcare*, <https://doi.org/10.1177/2010105820943239>.

Benedikt Behlert and others (2020). World Risk Report 2020. Bündnis Entwicklung Hilft and Ruhr University Bochum – Institute for International Law of Peace and Armed Conflict (IFHV). Available at <https://reliefweb.int/sites/reliefweb.int/files/resources/WorldRiskReport-2020.pdf>. Accessed March 2021

Britannica, T., & Editors of Encyclopaedia. (2020). Epidemiologic transition. Available at <https://www.britannica.com/topic/epidemiologic-transition>. Accessed January 2021.

Chanda, Rupa (2002). Trade in health services. *Bulletin of the World Health Organization*. Available at [https://www.who.int/bulletin/archives/en/80\(2\)158.pdf](https://www.who.int/bulletin/archives/en/80(2)158.pdf). Accessed January 2021.

Cometto, Giorgio, and Campbell, James (2016). Investing in human resources for health: beyond health outcomes. *Hum Resour Health*, 14, 51 (2016). <https://doi.org/10.1186/s12960-016-0147-2>.

Daniel Kramer, Shuai Xu, and Aaron Kesselheim (2012). Regulation of medical devices in the United States and European Union. *New England Journal of Medicine*, 366(9):848–855.

European Medicine Agency (2020). Mutual recognition agreements (MRA). Available at <https://www.ema.europa.eu/en/human-regulatory/research-development/compliance/good-manufacturing-practice/mutual-recognition-agreements-mra>. Accessed December 2020.

European Union (2014). *Investments in Health: Policy Guide for the European Structural and Investment Funds (ESIF) 2014-2020*. European Commission.

_____ (2020). Food Safety. Available at https://ec.europa.eu/food/overview_en. Accessed December 2020.

Flatworld Solutions. (2021). Benefits Of Outsourcing Medical Transcription. Available at <https://www.outsource2india.com/Healthcare/articles/benefits-of-medical-transcription-outsourcing.asp>. Accessed April 2021.

Flavia Jurje and Sandra Lavenex (2015). ASEAN Economic Community: what model for labour mobility? NCCR Trade Regulation: Swiss National Centre of Competence in Research. Available at

https://www.wti.org/media/filer_public/24/f2/24f2c553-c4cc-4cc2-b670-6144e31d453c/nccr_working_paper_asean_jurje_lavenex_.pdf. Accessed March 2021.

Flores, Gabriela and O'Donnell, Owen (2016). Catastrophic medical expenditure risk. *J Health Econ*, 46:1–15. doi:10.1016/j.jhealeco.2016.01.004.

Footman, Katharine, and others (2014). Policy Sumamry 14: Cross-border health care in Europe. United Kingdom: World Health Organization and European Observatory on Health Systems and Policies. Available at https://www.euro.who.int/_data/assets/pdf_file/0009/263538/Cross-border-health-care-in-Europe-Eng.pdf. Accessed December 2020.

Frederic De Wispelaere and Jozef Pacolet (2016). *Cross-border healthcare*. Brussels: European Commission.

Glinos, Irene, and others (2010). A Typology of Cross-border Patient Mobility. *Health & place*, 16. 1145-55. 10.1016/j.healthplace.2010.08.001.

Greer, Scott, and others (2014). Everything you always wanted to know about European Union health policies but were afraid to ask. United Kingdom: European Observatory on Health Systems and Policies and World Health Organization. Available at <https://www.euro.who.int/en/publications/abstracts/everything-you-always-wanted-to-know-about-european-union-health-policies-but-were-afraid-to-ask-2019>. March 2021.

Guinto, R. L., Curran, U. Z., Suphanchaimat, R., & Pocock, N. S. (2015). Universal health coverage in 'One ASEAN': are migrants included? *Global health action*, 8, 25749. <https://doi.org/10.3402/gha.v8.25749>.

Gunawan, Joko and Aunguroch, Yupin (2015). ASEAN mutual recognition arrangement for Indonesian nurses: is it a promise? *International Journal of Community Medicine and Public Health*, 77-80. Available at <https://belitungraya.org/english/data/ijcmph1.pdf>. Accessed March 2021

Hui Sin Teo, and Christina Foerg-Wimmer (2016). *Medicines Regulatory Systems and Scope for Regulatory Harmonization in Southeast Asia*. Available at <https://openknowledge.worldbank.org/bitstream/handle/10986/26801/106526.pdf?sequence=2>. Accessed March 2021.

Institute of Medicine. (1993). *Access to Health Care in America*. Washington D.C.: National Academy Press. Available at <https://www.ncbi.nlm.nih.gov/books/NBK235885/>. Accessed December 2020

Institute for Health Metrics and Evaluation (IHME). (2020). *GBD Compare*. Seattle: IHME. Available at <https://vizhub.healthdata.org/gbd-compare/>. Accessed November 2020.

International Federation of Red Cross and Red Crescent Societies (2020). Types of disasters: Definition of hazard. Available at [https://www.ifrc.org/en/what-we-do/disaster-management/about-disasters/definition-of-hazard/#:~:text=Natural%20hazards%20are%20naturally%20occurring,wildfires\)%%2C%20meteorological%20\(cyclones%20and](https://www.ifrc.org/en/what-we-do/disaster-management/about-disasters/definition-of-hazard/#:~:text=Natural%20hazards%20are%20naturally%20occurring,wildfires)%%2C%20meteorological%20(cyclones%20and). Accessed January 2021.

Joseph Siny & Namboodiri Vinod (2020). Assessment of Economic Value of Assistive Technologies Through Quality-Adjusted Work-Life Years (QAWLY). In: Miesenberger K., Manduchi R., Covarrubias Rodriguez M., Peñáz P. (eds) Computers Helping People with Special Needs. ICCHP 2020. Lecture Notes in Computer Science, vol 12377. Springer, Cham. https://doi.org/10.1007/978-3-030-58805-2_57

Kahanec, M. (2012). Skilled Labor Flows: Lessons from the European Union. IZA. Available at <https://openknowledge.worldbank.org/handle/10986/13566>. Accessed March 2021.

Kirstensen, F. B. (2012). Development of European HTA: from Vision to EUnetHTA. *Michael*, 9: 147–156. <https://www.michaeljournal.no/i/2012/03/Development-of-European-HTA-from-Vision-to-EUnetHTA>.

Malaysia, Malaysian Medical Council (2020). Malaysian Medical Council Advisory on Virtual Consultation (During The Covid19 Pandemic). Available at https://mmc.gov.my/wp-content/uploads/2020/04/MMC_virtualconsultationADVISORY.pdf. Accessed April 2021.

Matthias Wismar and others (2011). Health professional mobility and health systems evidence from 17 European countries. Copenhagen, WHO Regional Office for Europe: European Observatory on Health Systems and Policies and World Health Organization. Available at <https://www.euro.who.int/en/publications/abstracts/health-professional-mobility-and-health-systems.-evidence-from-17-european-countries-2011>. Accessed March 2021

Measure Evaluation. (2020). Total Fertility Rate. Family Planning and Reproductive Health Indicators Database. Available at https://www.measureevaluation.org/prh/rh_indicators/family-planning/fertility/total-fertility-rate. Accessed November 2020.

Mendoza, Dovelyn and Sugiyarto, Guntur (2017). The Long Road Ahead: Status Report on the Implementation of the ASEAN Mutual Recognition Arrangements on Professional Services. Manila: ADB. Available at <https://www.adb.org/publications/implementation-asean-mra-professional-services>. Accessed March 2021.

Network Readiness Index. (2020). Network Readiness Index 2020. Available at <https://networkreadinessindex.org/>. Accessed March 2021.

Nguyen, QT, and other (2012). An analysis of the healthcare informatics and systems in Southeast Asia: a current perspective from seven countries. *CURVE*. DOI: 10.1504/IJEH.2008.019792

Nicola Pocock and Kai Hong Phua (2011). Medical tourism and policy implications for health systems: A conceptual framework from a comparative study of Thailand, Singapore and Malaysia. *Globalization and Health*. <https://doi.org/10.1186/1744-8603-7-12>

Nikhilesh Dholakia and Nir Kshetri (2005). Global Outsourcing of Electronically Traded White Collar Services: Medical Transcription in India. Kingston, RI: College of Business Administration University of Rhode Island. Available at <http://www.cba.uri.edu/research/workingpapers/documents/2006/GlobalOutsourcingofElectronicallyTradedWhiteCollarServicesMedicalTranscriptioninIndia.pdf>. Accessed March 2021.

Omran, Abdel (2005). The epidemiologic transition: a theory of the epidemiology of population change. *The Milbank Quarterly*, 83(4), 731–757. <https://doi.org/10.1111/j.1468-0009.2005.00398.x>.

Orbeta, Aniceto Jr. (2013). Enhancing Labor Mobility in ASEAN: Focus on Lower-skilled workers. Discussion Paper Series No. 2013-17. Philippine Institute for Development Studies. Available at <https://www.econstor.eu/bitstream/10419/126934/1/pidsdps1317.pdf>. Accessed December 2020.

Organisation for Economic Co-operation and Development (2020). Health Statistics Definitions, Sources and Methods: Foreign-trained doctors. Available at <http://stats.oecd.org/wbos/fileview2.aspx?IDFile=0b10c60d-8a48-4b5f-900a-8f0f6c05f115>. Accessed March 2021.

_____ (2020). Health Statistics Definitions, Sources and Methods: Foreign-trained nurses. Available at <http://stats.oecd.org/wbos/fileview2.aspx?IDFile=fd7d0186-fef4-446b-80a4-b600872cfd5f>. Accessed March 2021.

Our World in Data (2021). COVID-19 Stringency index. Available at <https://ourworldindata.org/policy-responses-covid>. Accessed March 2021.

Outreville, J. Francois. Foreign direct investment in the health care sector and most-favoured locations in developing countries. *Eur J Health Econ* 8, 305–312 (2007). <https://doi.org/10.1007/s10198-006-0010-9>

Pagaiya, Nonglak and Noree, Thinakorn (2009). Thailand's Health Workforce: A Review of Challenges and Experiences. *PLOS ONE*. Available at <https://openknowledge.worldbank.org/handle/10986/13666>. Accessed December 2020

Petra Knaup and others (2007). Electronic patient records: moving from islands and bridges towards electronic health records for continuity of care. *Yearbook of Medical Informatics*, 34–46. PubMed PMID: 17700902.

Philippines (1974). Labor Code of the Philippines. Presidential Decree No. 442. Manila, Philippines: Republic of the Philippines. Available at https://www.dole.gov.ph/php_assets/uploads/2017/11/LaborCodeofthePhilippines20171.pdf. Accessed March 2021.

_____ (1996). An Act To Further Liberalize Foreign Investments, Amending For The Purpose Republic Act No. 7042, And For Other Purposes. Republic Act No. 8179. Available at https://www.dti.gov.ph/sdm_downloads/republic-act-no-8179/. Accessed March 2021.

_____ (2012). Data Privacy Act of 2012. Republic Act No. 1017. Available at <https://www.privacy.gov.ph/data-privacy-act/>. Accessed March 2020.

_____ (2018). Promulgating the 11th Foreign Investments Negative List. Executive Order No. 65: Available at <https://www.officialgazette.gov.ph/downloads/2018/10oct/20181029-EO-65-RRD.pdf>. Accessed March 2021.

_____ (2019). An Act Instituting Universal Health Care for All Filipinos, Prescribing Reforms In The Health Care System, And Appropriating Funds Therefore. Republic Act No. 11223. Available at <https://www.officialgazette.gov.ph/2019/02/20/republic-act-no-11223/>. Accessed December 2020

_____ (2020). Department of Health and National Privacy Commission Joint Memorandum Circular 2020-0001: Guidelines on the Use of Telemedicine in COVID-19 Response. Manila, Philippines: Republic of the Philippines. Available at <https://www.privacy.gov.ph/wp-content/uploads/2020/10/DOH-mc2020-0016.pdf>. Accessed April 2021.

Philippines, Board of Investments (2010). INVESTMENT IN HEALTH AND WELLNESS SERVICES. Available at <http://invest.cfo.gov.ph/pdf/part1/investment-in-health-and-wellness-services.pdf>. Accessed March 2021.

Philippines, Department of Health (2019). Health Facility Survey. Manila: Department of Health. Philippines, Department of Health (2020). Human Resource for Health Network. Available at <https://doh.gov.ph/Health-Program/human-resource-for-health-network>. Accessed March 2021.

_____ (2020). Philippine Health Facility Development Plan 2020-2040. Manila, Philippines: Department of Health.

_____ (2014). Philippine eHealth Strategic Framework Plan. Available at http://ehealth.doh.gov.ph/index.php?option=com_content&view=category&layout=blog&id=73. Accessed April 2021.

Philippines, Food and Drug Administration (2019). Food and Drug Administration Included in the ASEAN Mutual Recognition Arrangement (MRA) Available at <http://www.fda.gov.ph/food-and-drug-administration-included-in-the-asean-mutual-recognition-arrangement-mra/>. Accessed November 2020.

Philippines, National Economic Development Authority (2017). Philippine Development Plan 2017-2022. National Economic Development Authority. Available at <http://pdp.neda.gov.ph/>. Accessed November 2020.

Philippines, National Economic Development Authority (2020). Updated Philippine Development Plan 2017-2022. National Economic Development Authority. Available at <http://pdp.neda.gov.ph/>. Accessed April 2021.

Philippines, Philippine Regulation Commission (2020). ASEAN Mutual Recognition Arrangements. Available at <https://www.prc.gov.ph/asean-mra>. Accessed on December 2020

Pocock, Nicola & Phua, Kai Hong (2011). Medical tourism and policy implications for health systems: a conceptual framework from a comparative study of Thailand, Singapore and Malaysia. *Global Health* 7, 12 (2011). <https://doi.org/10.1186/1744-8603-7-12>

Prüss-Üstün, A., Mathers, C., Corvalán, C., & Woodward, A. (2003). The Global Burden of Disease concept: Introduction and methods: Assessing the environmental burden of disease at national and local levels. . Environmental burden of disease - World Health Organization, ISBN 978-9241546201.

Sabrina, Mohamad, and Defi, Irma (2021). Telemedicine Guidelines in South East Asia—A Scoping Review. *Frontiers in Neurology*. DOI: 10.3389/fneur.2020.581649

Sharma, Manusi and others (2021). A landscape analysis of health technology assessment capacity in the Association of South-East Asian Nations region. *Health Res Policy Sys*, 19, 19 (2021). <https://doi.org/10.1186/s12961-020-00647-0>.

Singapore, Economic Development Board (2020). Singapore a gateway to southeast Asia's digital healthcare mark. Available at <https://www.edb.gov.sg/en/news-and-events/insights/innovation/singapore-a-gateway-to-southeast-asias-digital-healthcare-mark.html>. Accessed March 2021.

SingHealth. (2007). Highlights. Available at www.singhealth.com.sg. Accessed December 2020.

Sriratanaban, Jiruth (2015). ASEAN integration and health services. *Global Health Action*, DOI: 10.3402/gha.v8.27199.

Sudo Kyoko, Kazuko Naruse, and Boonyanurak Puangrat (2020). Does the mutual recognition agreement on nursing services accelerate nurse migration in member countries of the Association of Southeast Asian Nations? *Nursing Open*, 7: 1187– 1196. <https://doi.org/10.1002/nop2.50>

Surachat Ngorsuraches and others (2017). Is It Time for Joint Health Technology Assessment in Asia? Opportunities and Challenges. *VALUE IN HEALTH REGIONAL ISSUES* 12C, 99-100. <http://dx.doi.org/10.1016/j.vhri.2017.04.002>.

Tan, Isip-isp and others (2020) Telemedicine: Guidance For Physicians In The Philippines. University of the Philippines Manila - Medical Informatics Unit. Available at <https://www.philippinemedicalassociation.org/wp-content/uploads/2020/05/1-Telemedicine-for-Health-Professionals.pdf>. Accessed April 2021.

Tangcharoensathien, Viroj, and others (2013). Health workforce contributions to health system development: a platform for universal health coverage. Available at <https://www.who.int/bulletin/volumes/91/11/13-120774/en/>. Accessed November 2020.

Tay-Yap, Joanne, and Hawamdeh, Suliman. (2006). The Impact of the Internet on Healthcare in Singapore. *Journal of Computer-Mediated Communication*, <https://doi.org/10.1111/j.1083-6101.2001.tb00131.x>.

Te, Vannarath and others (2018). The impact of ASEAN economic integration on health worker mobility: a scoping review of the literature. *Health Policy and Planning*, 957–965. <https://doi.org/10.1093/heapol/czy071>

Thailand, Ministry of Health. (2013). Collaborative Project to Increase Production of Rural Doctors (CPIRD) [Internet]. List of affiliated teaching centers. Available at <http://cpird.in.th/main/node/10>. Accessed March 2021.

Thomas, Steve and others (2020). Strengthening health systems resilience: Key concepts and strategies. World Health Organization. Available at <https://apps.who.int/iris/handle/10665/332441>. Accessed December 2020.

Thomas Hale, and others (2021). "A global panel database of pandemic policies (Oxford COVID-19 Government Response Tracker)." *Nature Human Behaviour*. <https://doi.org/10.1038/s41562-021-01079-8>

Ulep, Valerie, Uy, Jhanna, and Casas, Lyle. (2020). Primary Healthcare for Non-communicable Diseases in the Philippines. Discussion Paper Series No. 2020-0039 Quezon City: Philippine Institute for Development Studies. Available at <https://pidswebs.pids.gov.ph/CDN/PUBLICATIONS/pidsdps2039.pdf>. Accessed December 2020.

United Nations (2015). Sustainable Development Goals Goal 3: Ensure healthy lives and promote well-being for all at all ages. Available at <https://www.un.org/sustainabledevelopment/health/>. Accessed December 2020.

_____ (2016). PRESS RELEASE: Secretary-General Appoints Commission on Health Employment and Economic Growth. Available at <https://www.un.org/press/en/2016/sga1639.doc.htm>. Accessed November 2020

United Nations, Economic and Social Commission for Asia and the Pacific. (2016). ASEAN SDG Baseline. Bangkok: UN ESCAP. Available at https://www.unescap.org/sites/default/files/publications/ASEAN_SDG_Baseline_0.pdf. Accessed December 2020

Van Mihn, Hoang, and others (2014). Progress toward universal health coverage in ASEAN. *Global Health Action*. <https://doi.org/10.3402/gha.v7.25856>

Veloso, Allan, and others (2019). Mobile Digital Health in the Philippines: A White Paper. PRU Life UK. Available at <https://www.prulifeuk.com.ph/en/explore-pulse/health-financial-wellness/mobile-digital-health-philippines/>. Accessed April 2021.

Viet Nam, Ministry of Health. (2017). Regulating the Management of Distant Medicine (Circular 49) Circular No. 49/2017/TT-BYT. Viet Nam: Ministry of Health, Vietnam.

Wallibhodome, Sompeeti, and others. (2019). Enhancing Competitiveness of ASEAN SMEs in Health Tourism through Cluster Development and International Quality Standard Adherence. ASEAN & Kenan Institute Asia. DOI:10.13140/RG.2.2.22557.26089

Wismar, Matthias, and others (2011). Cross-border Health Care in the European Union: Mapping and analysing practices and policies. United Kingdom: World Health Organization on behalf of the European Observatory on Health Systems and Policies. Available at <https://www.euro.who.int/en/publications/abstracts/cross-border-health-care-in-the-european-union.-mapping-and-analysing-practices-and-policies-2011>. Accessed March 2021.

World Bank (2019). World Development Indicators - DataBank. Available at <https://databank.worldbank.org/home.aspx>. Accessed December 2020.

World Bank (2021). World Bank Country and Lending Groups. Available at <https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups>. Accessed November 2020.

Wikipedia. (2020). Disability Adjusted Life Years. Available at https://en.wikipedia.org/wiki/Disability-adjusted_life_year. Accessed December 2020

World Health Organization (2007). Strengthening Health Systems to Improve Health Outcomes: WHO Framework for Action. Geneva: WHO. Available at https://www.who.int/healthsystems/strategy/everybodys_business.pdf. Accessed November 2020.

_____ (2010). Monitoring the Building Blocks of Health System: A Handbook of Indicators and Strategies. Geneva: WHO. Available at https://www.who.int/healthinfo/systems/WHO_MBHSS_2010_full_web.pdf. Accessed November 2020.

_____ (2020). Health Financing: Financial protection. Available at https://www.who.int/health_financing/topics/financial-protection/en/. Accessed November 2020.

_____ (2020). Hospital bed density. Available at <https://www.who.int/data/gho/data/themes/topics/indicator-groups/indicator-group-details/GHO/hospital-bed-density>. Accessed November 2020.

_____ (2020). Universal health coverage. Available at https://www.who.int/health-topics/universal-health-coverage#tab=tab_1. Accessed November 2020.

_____ (2016). International Health Regulations. Available at https://www.who.int/health-topics/international-health-regulations#tab=tab_1. Accessed December 2020

_____ (2016). Strengthening health security by implementing the International Health Regulations (2005): IHR Monitoring. Available at <https://www.who.int/ihr/procedures/monitoring/en/>. Accessed December 2020

_____ (2016) Sustainable development goals (SDGs) : Goal 3. Target 3.8 : Achieve universal health coverage, including financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all [poster]. Manila : WHO Regional Office for the Western Available at <https://apps.who.int/iris/handle/10665/208286>. Accessed December 2020

_____ (2020) The Global Health Observatory Indicator Metadata Registry List: Disability Adjusted Life Years (DALYs). Available at <https://www.who.int/data/gho/indicator-metadata-registry/imr-details/158>. Accessed December 2020

World Health Organization and World Bank (2018). Tracking Universal Health Coverage: 2017 Global Monitoring Report. Geneva: WHO. Available at <https://apps.who.int/iris/bitstream/handle/10665/259817/9789241513555-eng.pdf?sequence=1>. Accessed November 2020.

Yeates, Nicola, & Pillinger, Jane (2018). International healthcare worker migration in Asia Pacific: International policy responses. *Asia Pacific Viewpoint*, 59: 92-106. <https://doi.org/10.1111/apv.12180>.