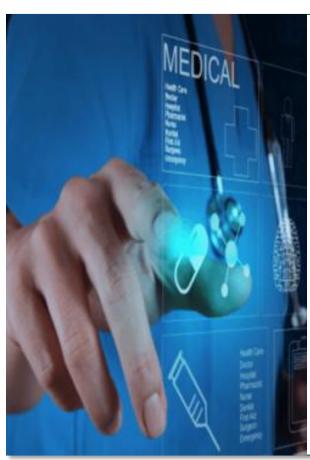


## This project assesses the SEA HealthTech landscape from a VC lens





What this report is:

#### High level trend analysis

- Regulatory scan
- Macro review of the healthcare and e-Health space and trends
- Which vertical is expected to grow the most? What are the key growth drivers?
- What are the key trends in the next 12 - 18 months?

#### List of companies by country and vertical

- An overview of numerous startups and VCs currently active in the region
- Within each vertical, what are some of the most promising startups for IFC to explore?
- Who are the major investors in the region?

### What this report is not:

#### **Detailed due diligence of startups**

- The research does not include a review of the startup valuation
- No interview has been conducted with the founding members to assess their ambition and skill
- The startup growth strategy's soundness has not been reviewed in detail

### Exhaustive list of HealthTech ventures active in the region with international headquarter

 The research was executed primarily with a focus on ventures based in SE Asia and with operations in a select 4 SE Asian countries

This report and the views presented within are solely the work of INSEAD's students for IFC's use, and do not represent IFC's views.



## **Executive Summary & Key Findings**

**Market Overview** 

Indonesia

**Vietnam** 

**Thailand** 

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### **Executive Summary**



#### Healthcare in SEA

- Healthcare Expenditure in SEA is on the rise, **growing even faster than GDP**. At the current pace, it is expected that by 2025, total healthcare spending could accelerate up to **~USD 740 bn** from the current **~USD 425 bn**.
- This growth is primarily driven by an ageing population (% of population above 60 will increase from 9.6% in 2016 to 21.1% in 2050, driven by the increased life expectancy of elders and reduced fertility rates of an increasingly wealthy population) and prevalence of non-communicable diseases (Smoking and Overweightness prevalent in at least 20% of the population in each of the target regions).

### Challenges and Opportunities

- The key challenges in SEA Healthcare are caused by **capacity shortages** and **fiscal constraints**, which are further compounded by country specific issues such as geographic dispersion. Despite the increasing demand, **government health expenditure as % of GDP has stayed stagnant** over the years.
- Rising income groups and an affluent population have fueled the demand for higher quality of care
- HealthTech is well positioned to solve these challenges as Technology can play a key role in delivering convenient, cost-effective, and high-quality treatment. Further, digital penetration is rising rapidly, supported by significant push from government to adopt technology.

#### **Investment Landscape**

- The HealthTech sector in SEA saw record breaking funding levels in 2019 as deal volume rose at a 63% CAGR
- 2 of the 5 largest SEA HealthTech deals in 2019 are based in Indonesia (Halodoc and Alodokter), while the others are based in Singapore
- Sequoia Capital, Monk's Hill Ventures, SG Innovate, Wavemaker, East Ventures are some of the funds who invested
  actively in SEA HealthTech in the last few years
- Corporates and HealthTech ventures are increasingly entering into partnerships to scale digital health

### Investment Recommendations

- Taking into account IFC's development goals, potentially investable start-ups identified through our research are: HaloDoc, Alodokter (Indonesia), Lifetrack Medical Systems, mClinica (Philippines), Medical Departures, Meticuly (Thailand), JioHealth, MyDoc, DoctorAnywhere (Vietnam)
- Further, **potentially investable VCs** that have been active in HealthTech are: East Ventures (Singapore, Indonesia, Tokyo), Intudo Ventures (Indonesia), Monk's Hill Ventures (Singapore, Indonesia, Vietnam), Wavemaker (Singapore, USA), Open Space Ventures (Singapore)

## Key Findings



#### Indonesia

- Between 2014 and 2019, Indonesia deployed its **universal health coverage** called Jaminan Kesehatan Nasional (JKN), thanks to which citizens are entitled to free healthcare or healthcare at very low cost.
- The **private sector represents 60% of healthcare overlays**. While widely available in first-tier cities; private hospital group see second-tier cities as promising opportunities for expansion. There is a **significant imbalance of supply and demand** at the moment.
- In Indonesia, there is still no general law on data protection. Patient rights however are guaranteed by several laws.

### **Vietnam**

- Vietnam's healthcare system functions as a mixture of public and private provision, with a **dominant public side**. 87% of citizens hold social health insurance and the government continues to finance hospital construction. In addition, **private healthcare popularity is increasing** and holds importance for 60%+ of outpatient services
- Lack of access to care, especially in rural areas, remains a major challenge, as do equipment and capacity shortages.
- Government incentives exist for investment in healthcare and tech. HealthTech will support digitalization of public and private healthcare and will help with the evolution of relatively new data and tech regulation.

#### **Thailand**

- Thailand's universal healthcare system (highly centralized) is **expensive** and will need changes in order to support its aging population, whether through decentralization of healthcare systems and/or tech innovations
- There's a **looming shortage of healthcare professionals**, and a rural-urban gap in terms of accessibility to high quality healthcare, providing an opportunity for technology to address some of these issues
- The government is set on a **goal to make Thailand the "#1 Medical Hub of Asia"** by pushing for support of its medical tourism industry, and providing incentives for R&D in technology and innovation

### **Philippines**

- Access to healthcare remains **highly inequal** across the Philippines, particularly in areas like Mindanao, despite gov't efforts to ensure universal healthcare.
- A key challenge is the **high levels of fragmentation** across both public and private health sectors, which has led to inefficiencies and high costs. Limitations in national social health insurance have also contributed to high **out-of-pocket healthcare expenditure**, **particularly on medicines**.
- The gov't is supportive of digital health efforts, but implementation is likely to remain challenging.



### **Executive Summary & Key Findings**

Market Overview

Indonesia

**Vietnam** 

**Thailand** 

**Philippines** 

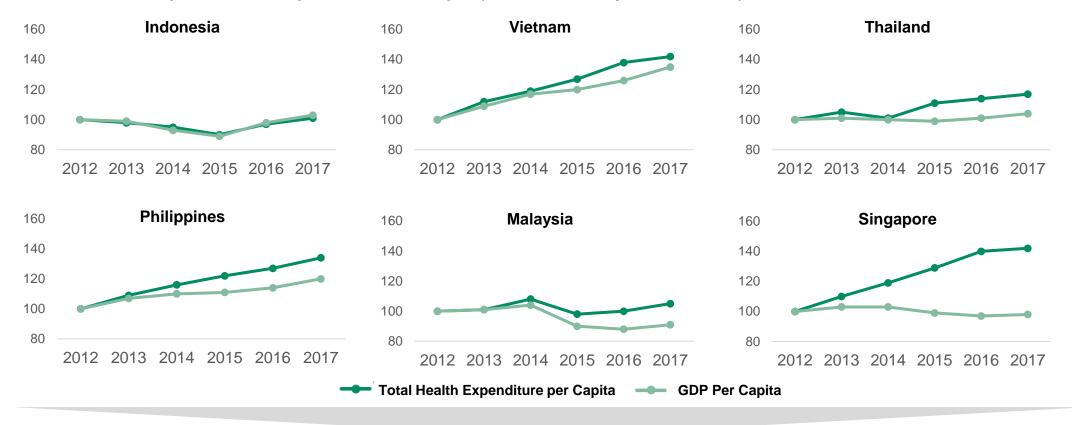


## Market Overview – Healthcare in Southeast Asia

## HealthCare Expenditure is on the rise, growing even faster than GDP



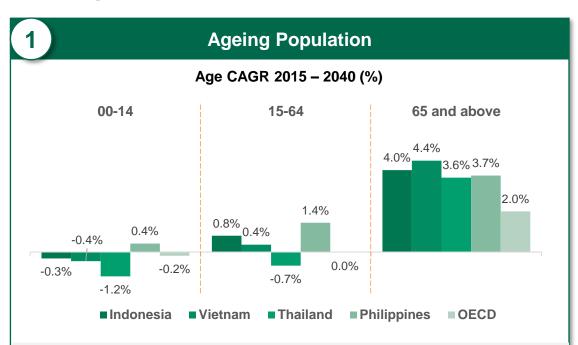
**Growth of Health Expenditure Per Capita vs. GDP Per Capita (Index chart base year: 2012 = 100)** 



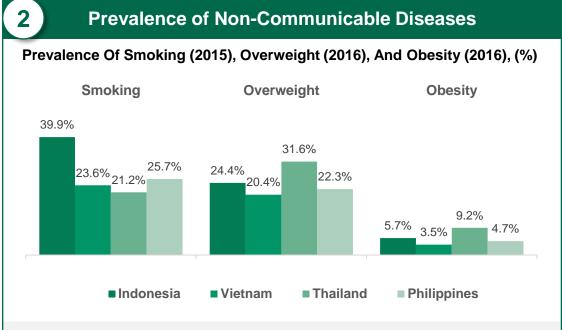
With healthcare cost outpacing economic growth in nearly all ASEAN nations, it is expected that by 2025, total healthcare spending could accelerate up to ~USD 740 billion from the current ~USD 425 billion.

## The growth is primarily driven by an ageing population and prevalence of non-communicable diseases





- Nearly all 6 ASEAN nations show either negative or close-to-zero growth for the youngest part of their population (age years 0-14). While the workforce age part of the population (age years 15-64) in most nations is still slowly growing, the retirement age population (age group 65-above) is outpacing them rapidly, with relative growth rates 3-10 times higher than the working age population.
- In SEA, **9.6%** of the total population was 60 and above in 2016 but is expected to more than double to **21.1%** by 2050, driven by the increased life expectancy of elders and reduced fertility rates of an increasingly wealthy population.



- Overweight and obesity (metabolic risk indicators) as well as smoking (typical risk behaviors) are highly prevalent in SEA and continue to increase.
- This will translate into a high prevalence of severe non-communicable diseases in the future.
- This trend will compound the effects of the increased population age in the ASEAN 6 nations.

### Market Comparison

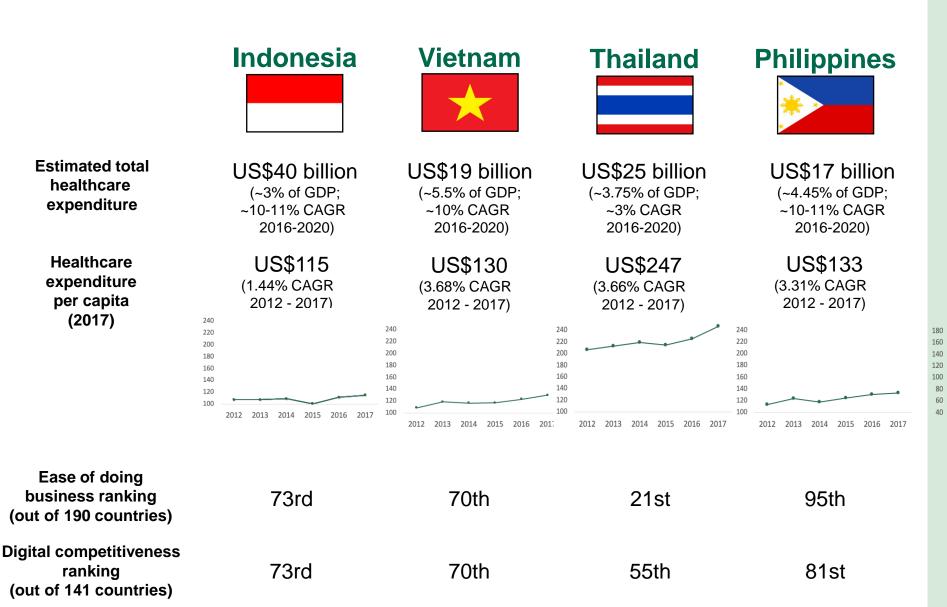
**Estimated total** healthcare expenditure

Healthcare expenditure per capita (2017)

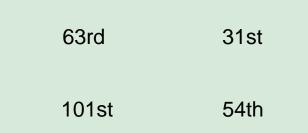
Ease of doing business ranking

(out of 190 countries)

ranking (out of 141 countries)







2012 2013 2014 2015 2016 2017

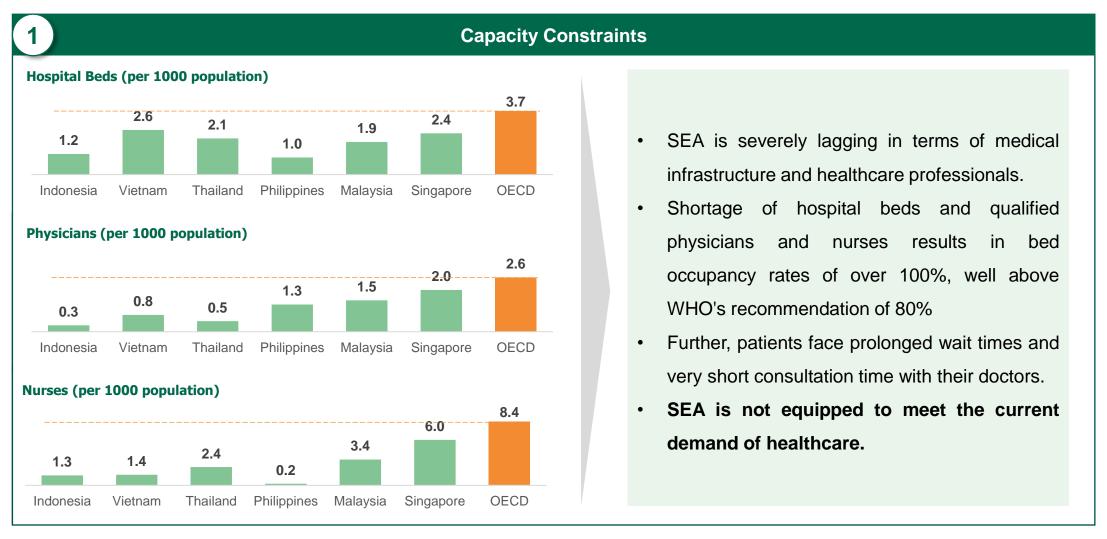
2012 2013 2014 2015 2016 2017



# Market Overview – Challenges and Opportunities

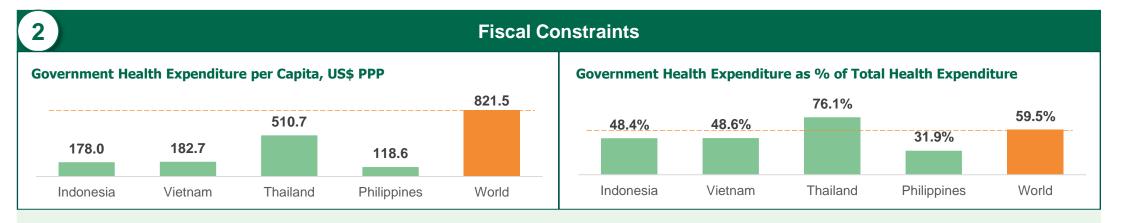
# The key challenges in SEA Healthcare are caused by capacity shortages and fiscal constraints (1/2)



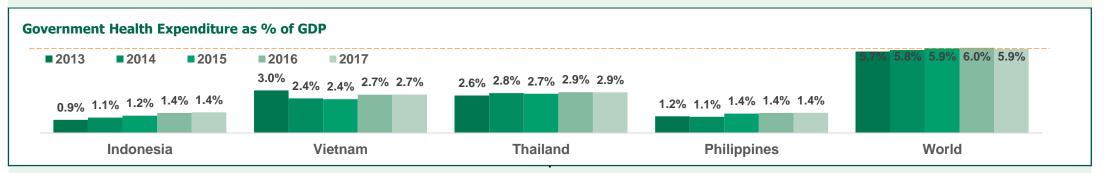


# The key challenges in SEA Healthcare are caused by capacity shortages and fiscal constraints (2/2)





Government health expenditure per capita, PPP is **substantially below the world average**Government health expenditure as % of total health expenditure is more than 10% below the world average in each country, other than Thailand.



Government health expenditure as % of GDP has stagnated over the years, suggesting an inability to spend more.

Overall, governments are unlikely to have sufficient means to meet the increased demand for healthcare with equal increases of healthcare spending.

## Rising income groups and an affluent population have fueled the demand for higher quality of care



## Existing healthcare systems are subpar in terms of quality

- Patients often do not have enough time with their doctor; The typical experience is three minutes of care after a three-hour wait
- Public Healthcare Centers often do not provide all the services they are supposed to
- Lack of sufficient equipment for surgery and intensive care units in public hospitals
- Significant variation in quality of medical equipment between national and provincial hospitals



## There is a marked rise in the size of the affluent and middle-class across SEA

- In 2017, the middle class and affluent customers made up **~60%** population in Thailand and **~44%** in Indonesia
- 50 million new consumers will join the ranks of the middle class in Indonesia, the Philippines, Thailand, Vietnam and Malaysia by 2022, contributing to the region's \$300 billion middle-class disposable income

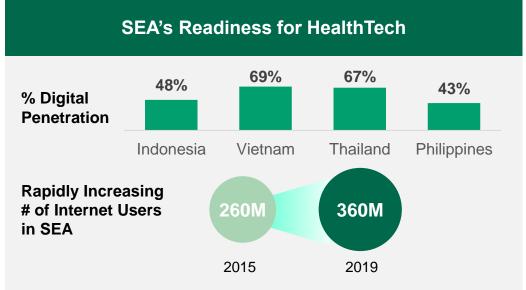
There is growing demand for access to better healthcare facilities and higher quality of healthcare

## HealthTech is well positioned to solve these challenges



## Technology can play a key role in delivering convenient, cost-effective, and high-quality treatment

- Convenience & Access: Technology and data can deliver
  the same convenience and cost savings found in other parts
  of the online economy, such as e-commerce. With telehealth,
  people in rural and other remote areas are now be able to
  receive an online diagnosis and access digital resources to
  address their needs.
- Cost Effective: Instead of visiting a clinic, a patient can talk to their doctor via a smartphone app, thus saving cost of travel and a day of paid work, which many travelling from remote areas must forego.
- High Quality: Technology can give access to higher and more standardized quality of healthcare. People often travelled for hours instead of visiting their local doctors because of the inadequacy of professional level and medical equipment available locally.



- **Digital Penetration:** Just over a decade ago, four in five Southeast Asians had limited to no Internet connectivity. Today, there are 360+ million Internet users in the region, with 100M users added in the last 4 years.
- Receptiveness of Healthcare Professionals: According to a PwC Health Research Institute survey, 85% of clinicians in Southeast Asia said they would use data from apps, wearables and some form of technology in future treatments
- Signs of governmental push to adopt technology: Both the Philippines and Thailand gov'ts, for example, have introduced measures to incorporate technology into their healthcare system

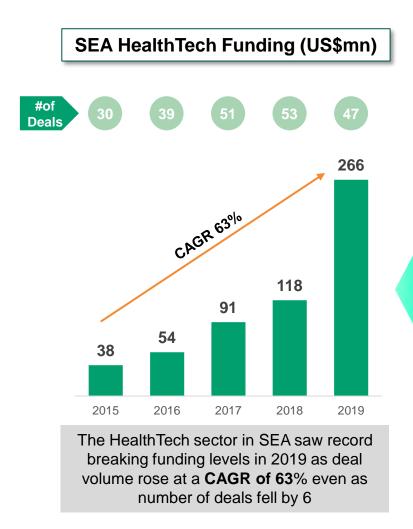
Sources: Monk's Hill ("How will tech meet evolving healthcare need in Southeast Asia"), Google & Temasek / Bain, e-Conomy SEA 2019 ("Southeast Asia's \$100 billion Internet economy"), World Bank

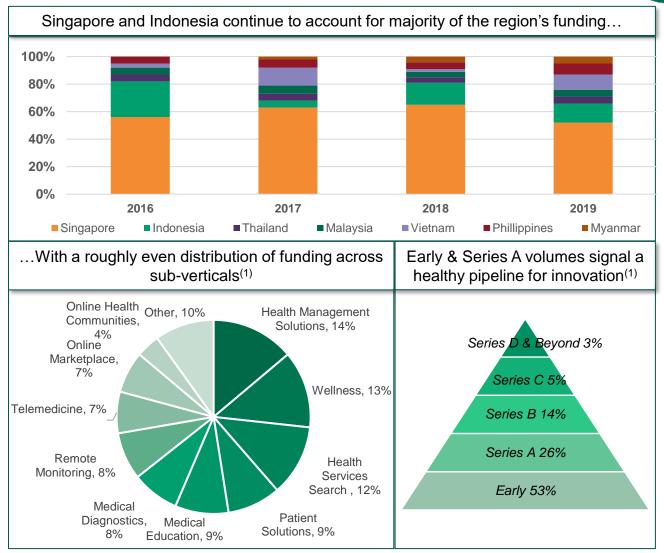


## Market Overview – Investment Landscape

### Overview of SEA HealthTech Investment Landscape







## 2 of the 5 largest SEA HealthTech deals in 2019 are based in our target region



### US\$65mn

### **U** halodoc

**Sector:** Health Management Solutions

**Description:** Health-tech platform that connects patients with doctors, insurance, labs, and pharmacies in one simple mobile application

Location: Indonesia Stage: Series B # of Investors: 4

**Key Investors: UOB Venture Management**, Singtel Innov8, Korea Investment Partners, WuXi AppTec, Prudential Financial, Bill & Melinda Gates

Foundation, Allianz X

#### US\$35mn



**Sector:** Patient Solutions

**Description:** Patient Solution systems that augment Personalized Care and Therapies using

Digital Therapeutics Location: Singapore Stage: Series B # of Investors: 7

Key Investors: Sequoia Capital India, MassMutual Ventures, Singapore Economic Development Board, Jianke, Openspace Ventures(E), Aviva Ventures(E), SGInnovate(E)

#### US\$33mn

### **ALODOKTER**

Sector: TeleHealth, InsurTech

**Description:** Health portal that provides high quality content and interaction with qualified

Indonesian doctors
Location: Indonesia
Stage: Series C
# of Investors: 7

**Key Investors: Sequis Life**, Softbank (E), Golden Gate (E), Philips, Heritas Capital, Hera

Capital, Dayli Partners

#### US\$25mn



**Sector:** Health Management Solutions

**Description:** Al-powered platform that provides personalized health & wellness offerings based on the individual's health data.

Location: Singapore Stage: Series C

# of Investors: 12

**Key Investors:** HSBC, Singtel Innov8, Telkom Indonesia MDI Ventures, Sumitomo Corporation Equity Asia, Muang Thai Fuchsia Ventures,

Humanica, Heritas Venture Fund

### US\$20mn



**Sector:** Medical Diagnostics

**Description:** Diagnostics Technology Platform that develops advanced liquid biopsy blood tests that guiding cancer care by molecular profiling

Location: Singapore Stage: Series A # of Investors: 5

**Key Investors: IHH Healthcare Berhad**, SGInnovate, Heliconia Capital (subsidiary of Temasek), Lim Kaling, Boon Hwee Koh



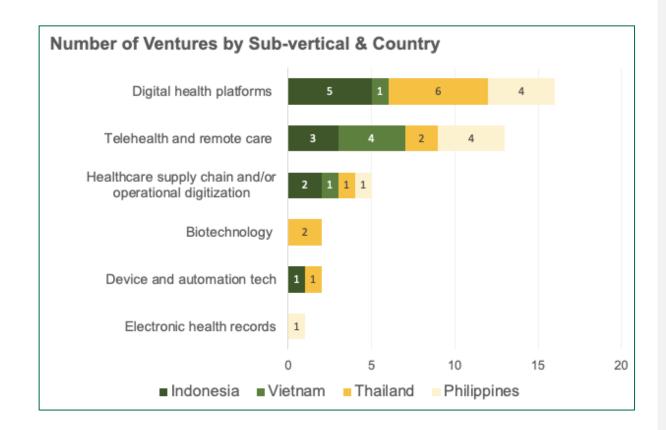
## Some of the active investors in SEA HealthTech include...





# Digital health platforms and telehealth were the sub-verticals with most venture activity





- Most ventures were found in sub-verticals focused on making basic healthcare more accessible and costeffective - the major challenge across the SEA countries analyzed.
- We saw significantly fewer ventures in spaces where tech sophistication would be the fundamental differentiator (e.g. AR/VR, AI or biotech), although there were some in Thailand (the most developed healthcare market of the four).
- The telehealth subvertical in particular tended to be crowded with ventures with relatively similar technology, products and business models.
- In B2B space, there is a large potential opportunity for ventures offering healthcare digitization/electronic health record management capabilities, given rudimentary levels of digitization in most health organizations (particularly in the public sector). However, it's unclear where local ventures' competitive advantage over established foreign players lies in this space.

# A key differentiator in ventures' ability to scale is likely to be the quality of their partnerships



### Government Entities

In Singapore, RingMD entered into a regulatory sandbox with the Health Ministry to better integrate telemedicine into the healthcare ecosystem





የ j halodoc



### **Insurance Providers**

MyDoc's telemedicine services are integrated into Prudential's customer app for holistic health management



Halodoc's teleconsultation services have been made available free-of-charge to AXA customers



## Healthtech Ventures







## Established Healthcare Providers



In Vietnam, JioHealth
established referral
partnerships with certain
hospitals to ensure smooth
transition of patient care

## Other Corporate Partners



Doctor Anywhere partnered GoJek to provide its driverpartners convenient access to medical consultation services



Grab and Ping An Good Doctor entered a JV to provide access to online medical consultations & medicine delivery in SEA



## Market Overview – Investment Recommendations

## Top Potential HealthTech Company Targets



Based on assessment criteria from IFC and data collected on more than 35 HealthTech startups in Southeast Asia, the following companies stood out for potential investments opportunities.

Expert interviews highlighted that few players will likely "take it all" and that HealthTech players will end up joining large healthcare players or large tech companies. Rising international players should be monitored regularly.

Company	Founding Year	Primary Country of Operation	Last Funding Round	Vertical
୯ halodoc	2016	Indonesia	Series B - \$65mn in 2019	Telehealth
ALODOKTER	2014	Indonesia	Series C - \$33mn in 2019	Digital health
- Ufetrack - Medical Systems	2012	Philippines	Series A - \$5.7mn in 2019	Telehealth
**mClinica	2012	Philippines	Series A - \$6.3mn in 2017	Supply chain digitalization
MEDICAL DEPARTURES	2014	Thailand	Series A - \$2.5mn in 2016	Digital health - medical tourism
METICULY	2017	Thailand	Series A - \$2.7mn in 2019	Device and automation tech – 3D printed prosthetics
∞ Jio Health	2014	Vietnam	Series A - \$5mn in 2019	Telehealth
mydoci)	2012	Vietnam	Series A - \$5.2mn in 2017	Telehealth
DOCTOR ANYWHERE	2015	Vietnam	Series B - \$27mn in 2020	Telehealth

## Future Targets to Watch Out For



We've identified the following companies as interesting and a candidate for future investments, but are too early for IFC's investing criteria:

Company	Founded	HQ	Latest Funding	Description	Reason
Health at Home	2015	Thailand	Seed Round Undisclosed	Health at Home tailors and connects the right caregivers to patients with various ailments and conditions. In addition, Health at Home provides digital consultations and care management.	Thailand and other SEA countries having an aging population with low/no growth of the younger population. This startup's services will be in demand as the aging population requires more in-home care.
bπt	2018	Vietnam	Seed Round April 2020	BuyMed offers a platform to centralize the pharmaceutical distribution network in Vietnam, matching supply and demand of pharmaceuticals and commercial health items.	BuyMed is backed by Sequoia Capital India's Surge early- stage accelerator, and has reported large growth in its annual revenue in the past year. It already has an immense number of verified suppliers, distributors, manufacturers, and healthcare providers on its platform. We see a huge potential for growth with new product lines and further expansion into various SEA markets.
newman's	2020	Indonesia	Seed Round March 2020	Newman's is a Y-Combinator backed digital health clinic for men focusing on hair loss, sexual health, and smoking addiction. The platform provides access to doctor consultations and prescriptions.	This digital health startup is tackling a niche market in Indonesia that is stigmatized in the region, allowing men to address some of these issues without having to be embarrassed to seek treatment. We see high growth potential in this niche segment of men's health.
TeleCTG	2016	Indonesia	Seed Round January 2017	TeleCTG develops cardiotocography device that detects fetal heartbeat in the womb. The device is affordable enough to be purchased by rural medical workers, so abnormalities can be detected more quickly and prevent mortality of mothers and babies.	Super interesting medical device startup tackling infant and mother mortality with an affordable cardiotocography device. This especially helps rural hospitals with lower accessibility. It's in Phase I clinical trials, and we see a promising future if the it can complete all clinical trials and establish partnerships with governments and hospitals.

## Top Potential HealthTech VC Targets



A review of the HealthTech space highlighted that HealthTech remains a niche market on which no individual player\* is fully dedicated. Few companies stood out however for their narrower focus on the Southeast Asian investment space and may be suitable candidates for investment after adequate alignment on investment terms

Company	Founding Year	HQ Country	Active Funds	Description
·el	2009	Indonesia, Singapore, Tokyo	Fund VIII – \$88M – June 26, 2020 Fund VI – \$75M – Aug 21, 2019 Fund V – \$27.5M – Jan 11, 2017 Fund III – Unknown – Mar 11, 2014	One of the longest-serving seed investors in Southeast Asia with investment in over 160 startups with more than USD \$4 billion in followon rounds
Intudo Ventures	2017	Indonesia	Fund II – \$50M – Feb 14, 2019 Fund I – \$20M – Feb 8, 2018	Intudo Ventures' portfolio concentrated capitalizing on the rapid growth of private consumption and rising middle class in Indonesia
MONK'S HILL VENTURES	2014	Singapore, Vietnam and Indonesia (Jakarta)	Fund II – \$100M – Aug 2, 2018 Fund I – \$80M – April 7, 2016	Venture capital firm investing in early stage technology start up in SEA. They have offices in Singapore, Indonesia (Jakarta), and Vietnam.
wavemaker	2003	Singapore, USA	Fund III - \$111M - 2019 Fund II - \$66M - 2017 Fund I - \$6.6M - 2012	Early-stage VC that focuses on enterprise and deep tech companies.
© openspace	2014	Singapore	Fund III – \$90M – July 8, 2020 Fund II – \$135M – Aug 14, 2018 Fund I – \$90M – Nov 18, 2015	Openspace Ventures makes investments in early-stage technology companies based in Southeast Asia.

<sup>\*</sup> With the exception of CVC funds excluded from this analysis but available for review in the excel appendix



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## Indonesia – Key Indicators

[Indicators are for year 2019 unless otherwise stated]



### **Economic Indicators**

GDP (PPP current int'l \$): 3,329 bn

**GDP** growth rate: 5.0%

GDP/capita (PPP current int'l \$): 11,812

GDP/capita (current US\$): 4,135 Unemployment (ILO estimate): 4.7% Population below poverty line (2016):

10.9%

Ease of Doing Business ranking: 73rd (out

of 190)

Procedures to register a business: 11 Cost of business start-up procedures

(% of GNI per capita): 5.7%

**Mobile subscriptions / 100 inhabitants:** 127

Internet users as % of population: 48% Fixed broadband subscriptions / 100

inhabitants: 3.48

### Demographic Indicators

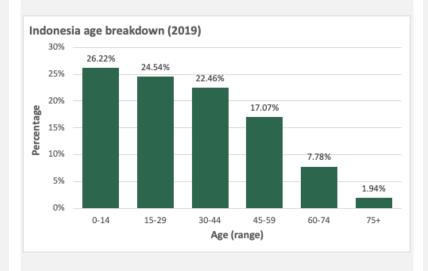
Population (2020 est.): 267.03m

Population growth rate (2020 est.): 0.8%

**Languages:** Bahasa Indonesia (official), English not widely spoken. More than 700 languages are used in Indonesia.

languages are used in indonesia.

**Urban population:** 151.51m (56% of total)



### Healthcare Indicators

Healthcare expenditure as % of GDP

**(2017):** 3%

Healthcare expenditure per capita (2017,

current US\$): 114.7 USD

**Human Development Index** 

**ranking:** 111<sup>th</sup> (out of 189)

Life expectancy at birth: 73.7 years

Infant mortality rate: 20.4 deaths/1,000 live

births

Physician density: 0.38 physicians/1,000

population

Hospital bed density: 1 beds/1,000

population

Private sector share of hospital beds

**(2013):** 18%

Major causes of death: 1) Stroke, 2) Heart

disease, 3) Diabetes, 4) Tuberculosis, 5)

Cirrhosis

Sources: CIA Factbook, World Bank

## Indonesia's healthcare adopts a hybrid model of public and private providers and universal health coverage



## Public Healthcare System Decentralized, in deficit, underequipped

#### **Overview**

- In 1999, a reform **decentralized health services** to provincial and district governments which are under the Ministry of Home Affairs.
- Between 2014 and 2019, Indonesia deployed its universal health coverage called Jaminan Kesehatan Nasional (JKN), thanks to which citizens are entitled to free healthcare or healthcare at very low cost, allowing many patients to find treatment
- Healthcare system suffers from structural problems, such as underfinancing, lagging numbers of hospital facilities and inequity of care especially in remote areas

#### <u>Authorities</u>

- Ministry of Health supervises government hospitals, provisional/ district health offices
- Decentralized approach: district governments take major role in managing health support and funding

### **Financing**

 JKN funded by certain percentage of salary contribution of employers and employees. The current program had a deficit of IRD 32 trillion in 2019

## Private Healthcare Options Underequipped, lacking financial support

- Private providers include networks of hospitals and clinics that are managed by not-for-profit, charitable, or for-profit providers, as well as individual doctors and midwives who have dual practices.
- The private sector represents 60% of healthcare overlays. 1,787 or the 2,813 hospitals are privately managed
- Widely available in first-tier cities; private hospital group see second-tier cities as promising opportunities for expansion
- Indonesia healthcare sector is at an early stage of its life cycle, with a significant imbalance of supply and demand. In 2018, the World Bank wrote that "Indonesians could be healthier with stronger public-private partnerships"

## Healthtech overview Favorable conditions for the rise of Digital Health

- MOH is working to achieve an integrated health information system. Main challenge is to integrate information from the private sector.
- Since 2014, the country is served by the **Health Technology Assessment** committee that analyses health technologies,
- All investments is supervised by the Indonesian Investment Coordinating.
   Investment can be through a legal entity or a commercial entity.
- Hospital investments are available to foreign investors, but the investment plan requires formal approval from the MoH.
- The geographical condition, combined with insufficient number and distribution of health workforce, lack of investment in facilities and difficulties in transportation is favorable for the rise of e.g. telemedicine. The **MoH has** included telemedicine in their 2015-2019 Strategic Plan

## Key Challenges in the Current Healthcare System include...



High rate of illegal sales of prescription drugs

Lowest rate of hospital beds per inhabitants in ASEAN countries

Largest archipelago with more than 17,000 islands

Rising costs of healthcare for the gov.

- There are 5,000 estimated unlicensed drugstores, 90,000 informal outlets
- Monitoring and enforcement is the responsibility of the local government
- Indonesia offer 310,710 hospital beds, i.e. 1.17 beds per 1000 population. This rate is the lowest among ASEAN countries and is among the lowest in the world.
- The country also lacks appropriate physicians (1.3/10,000 inh.), nurses and midwives (8.3/10,000 inh.) coverage. The country needs 15x its current number of doctors to reach the level of OECD countries.
- This complex geographical structure is a challenge to offer consistent health services across the countries and a driver for telehealth growth
- The nominal health spending has been steadily increasing in the last 8 years, by 222% overall (reported in 2017) be remains the lower of the SEA in terms of % of GDP

Digital technologies can help Indonesia overcome their current issues

## Indonesia's market and regulatory landscape is favorable to digital health-tech



Patient rights are guaranteed by several laws, including the right to confidentiality, to information about treatment and costs, to give consent to any procedures and not to be treated negligently (see Law no. 36 of 2009 from the Ministry of Communication and Informatics).



### **Pharmaceuticals**

- The National Agency for Food and Drug Control supervises food and drug in Indonesia.
- A large volume of drugs are produced locally and need to meet the requirements of Good Manufacturing Practice (GMP)
- 95% of the basic ingredients are imported
- MoH primarily uses generics to supply the public sector (60%)

### Medical Equipment

- Indonesia imports 97% of medical devices.
- Regulations details: <a href="https://www.who.int/medical\_devices/countries/r">https://www.who.int/medical\_devices/countries/r</a> equlations/idn.pdf?ua=1
- SEA research in Medical Equipment / MedTech is dominated by Singapore who invests

### Digital Health

- In April 2020, Reuters wrote that "Indonesia leans on HealthTech startups to cope with virus surge"
- Experts highlighted that the digital health space is where most of the local new ventures will come from, with already the emergence of local 'winners' such as Halodoc and Alodokter.
- The Indonesian Healthtech Association offers a comprehensive list of stakeholders: https://healthtech.id/members/
- Introduction of measures to support SMEs, e.g. "Let SMEs Sell Online" in 2018, with a goal of 8m SMEs selling their products via the internet by 2020.
- In Indonesia, there is still no general law on data protection

The pharmaceutical and medical equipment advancements are currently **dominated by Singapore** in SEA thanks to favorable infrastructure, stable legal environment and large investments offered by the authorities (see the 2019 budget with **S\$1 billion worth of measures** to help businesses build 'deep' capabilities

Sources: WHO (The Republic of Indonesia – Health System Review), World Bank, DLA Piper, Expert interviews



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## Vietnam – Key Indicators

[Indicators are for year 2019 unless otherwise stated]



### **Economic Indicators**

GDP (PPP current int'l \$): 807.8 bn

**GDP** growth rate: 7.0%

GDP/capita (PPP current int'l \$): 8,041

GDP/capita (current US\$): 2,715

**Unemployment (ILO estimate):** 2.0%

Population below poverty line (2017): 8%

Ease of Doing Business ranking: 70th (out

of 190)

Procedures to register a business: 8 Cost of business start-up procedures

**(% of GNI per capita):** 5.6%

Mobile subscriptions / 100 inhabitants:

141

Internet users as % of population: 69%

Fixed broadband subscriptions /

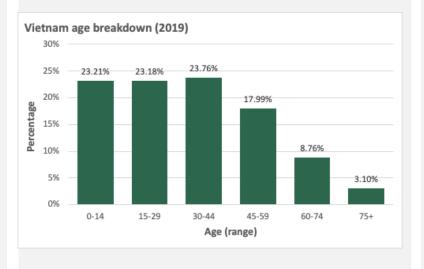
**100 inhabitants:** 15.35

### Demographic Indicators

**Population (2020 est.):** 96.42m

Population growth rate (2020 est.): 1.0%

Languages: Vietnamese (official), English (increasingly favoured as 2nd language)
Urban population: 35.33m (37% of total)



### Healthcare Indicators

**Healthcare expenditure as % of GDP** 

**(2017):** 5.5%

Healthcare expenditure per capita (2017, current US\$): 129.58 USD

Human Development Index ranking: 118th (out of 189)

Life expectancy at birth: 74.4 years

**Infant mortality rate:** 15.7 deaths/1,000 live

births

Physician density: 0.83 physicians/1,000

population

Hospital bed density: 2.6 beds/1,000

population

Private sector share of hospital beds

**(2016):** 5.5%

Major causes of death: 1) Stroke, 2) Heart

disease, 3) Lung cancer, 4) COPD (lung



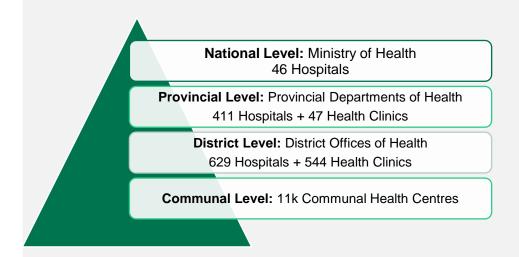
Sources: CIA Factbook, World Bank

# Vietnam's healthcare system functions as a mixture of public and private provision, with a dominant public side



### Public Healthcare System

- Efforts by the gov't towards universal healthcare coverage
- **87%** of the population is covered by social health insurance<sup>(1)</sup>
- The Government continues to finance new hospital construction to increase healthcare access for rural and urban communities<sup>(2)</sup>
- Vietnam's public sector has a decentralized hospital system organized into four groups<sup>(3)</sup>:



### Private Healthcare Options

- The Vietnamese private healthcare sector is relatively young, but holds an important position in outpatient care
- As of 2016, private sector only accounted for 17% of hospitals (5.5% of hospital beds), yet private hospitals provided 60%+ of outpatient services
- Private hospitals continue to grow, primarily in major cities and for the middle and upper class<sup>(2)</sup>



# Opportunities in both public and private healthcare, and to leverage Government investment incentives

### Vietnamese government incentivizes healthcare and tech investments, provides preferential tax treatment

<u>Government Outlook:</u> rising healthcare costs and limited public budget has the government looking to private and international investments for increasing healthcare quality and access. Further, they have set national goals in Resolution 20-NQ/TW in 5 key priority areas; public health, healthcare network, healthcare access, pharma and medical equipment innovation, and human resources

<u>Incentives:</u> effective on January 1st, 2021, the amended Law on Investment (LOI) incentivizes investment in both healthcare and IT-related industries through preferential income tax, real estate, and credit laws.

### Smart health-tech investments will target national healthcare system and can benefit from free trade agreements

<u>Universal Health Coverage (UHC):</u> today, 87.7& of Vietnam's population benefits from state-provided healthcare. However, issues arise when trying to balance supply of hospitals and physicians with demand.

<u>Pharma & Medical Devices:</u> Vietnam has been actively negotiating various trade agreements. The EU – Vietnamese Free Trade Agreement (EVFTA), ratified in February 2020, will make it easier and cheaper for European manufacturers to sell into the Vietnamese market. Foreign pharmaceuticals make up 55% of current consumption in Vietnam.

**COVID:** the recent pandemic has enabled Vietnam to stand as a strong example of healthcare response. From public infrastructure investment, early regulatory responses, the release of a nation-wide contract tracing app, and more.

# Tech startups will have a seat at the table to help Vietnam government evolve recent tech and data regulations



Opportunistic health-tech in Vietnam will further the digitalization of healthcare, and work with the government to evolve and define the regulatory landscape

<u>Digitalization:</u> in general, health-tech is a highly regulated landscape but with many uncertainties. Private hospitals with greater flexibility have been quick to adopt newer technologies, public healthcare organizations lack the resources and expertise to compete.

<u>Telemedicine:</u> the Ministry of Health's Circular 47/2017 enables and provides guidelines for doctors to provide telemedicine services, requiring IT infrastructure and licensing standards. In April 2020, the country launched a telemedicine app designed for Covid-19 and general healthcare.

2019 saw various laws protecting user data in Vietnam, companies operating in the country to be held to regulations similar to those of GDPR

<u>Personal Data Protection:</u> in December of 2019, the Ministry of Public Security published the first draft of the Decree on Personal Data Protection. It outlines, for the first time, legal terms to protect personal data in Vietnam. Such data includes healthcare status, genetic information, and biometric data. The decree's laws are similar to that of GDPR.

<u>Law of Cybersecurity:</u> in January of 2019, the law was passed to promote cybersecurity. The most prominent aspect of the law is a requirement for Vietnamese and foreign enterprises to establish a representative office in Vietnam to be held responsible for the security of user data.

Sources: AusTrade, 2019; Baker McKenzie, 2020



**Executive Summary & Key Findings** 

**Market Overview** 

Indonesia

**Vietnam** 

Thailand

**Philippines** 

## Thailand – Key Indicators

[Indicators are for year 2019 unless otherwise stated]



#### **Economic Indicators**

GDP (PPP current int'l \$): 1,339 bn

**GDP** growth rate: 2.4%

GDP per capita (PPP current int'l \$):

18,463

GDP per capita (current US\$): 7,808 Unemployment (ILO estimate): 0.8% Population below poverty line (2015):

7.2%

Ease of Doing Business ranking: 21th (out

of 190)

**Procedures to register a business:** 5 **Cost of business start-up procedures** 

(% of GNI per capita): 3.0%

Mobile subscriptions / 100

inhabitants: 186

Internet users as % of population: 67%

**Broadband subscriptions / 100** 

inhabitants: 14.52

#### **Demographic Indicators**

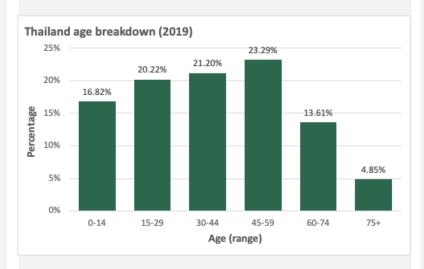
**Population (2020 est.):** 69.63m

Population growth rate (2020 est.): 0.3%

Languages: Thai (official, 91%), English is

secondary language of the elite

**Urban population:** 35.30m (51% of total)



#### Healthcare Indicators

**Healthcare expenditure as % of GDP** 

**(2017):** 3.75%

Healthcare expenditure per capita (2017, current US\$): 247.04 USD

**Human Development Index ranking:** 77<sup>th</sup> (out of 189)

Life expectancy at birth: 75.6 years

**Infant mortality rate:** 8.6 deaths/1,000 live

births

Physician density: 0.81 physicians/1,000

population

Hospital bed density: 2.1 beds/1,000

population

Private sector share of hospital beds

**(2018):** 27.4%

Major causes of death: 1) Heart disease, 2)

stroke, 3) lower respiratory infection, 4) Alzheimer's disease, 5) Liver cancer

Sources: CIA Factbook, World Bank

# Thailand's successful implementation of the universal healthcare leads to a growth in medical tourism



#### Public Healthcare System

#### Overview

- Thailand's universal healthcare entitles every Thai citizen to essential health services
- Most public hospitals in Thailand are operated by the Ministry of Public Health
- Rural areas of Thailand are still underserved medically, with lower quality of care and less access<sup>(1)</sup>

#### **Authorities**

 There have been pushes toward decentralization, but they have been faced with resistance, and MOPH still directly controls most aspects of healthcare

#### Financing

 Thailand's universal healthcare system is largely financed by general government taxation

#### Private Healthcare Options

- Private hospitals largely complement the public hospitals, especially in larger urban areas of Thailand
- Private hospitals are regulated by the Medical Registration Division
- Thailand's growing medical tourism industry is driven by private hospitals, and the Thai government is favorably shifting public policy to cater to more medical tourists<sup>(2)</sup>
- Investments from conglomerates have been flowing into healthcare in Thailand (e.g. Pruksa Holdings, RSU Group, CP Group, and TCC Group)<sup>(2)</sup>

#### "The #1 Medical Hub of Asia"

 Thailand's Board of Investments published a 10-year plan to make Thailand a "Hub of Wellness and Medical Services" with the full support of the government<sup>(3)</sup>

## Government actively involved in making and promoting Thailand as the #1 Medical Hub of Asia



#### Thailand government is pushing for R&D in technology and innovation

**Non-Tax Incentives:** Foreigners can have 100% ownership of a business, and can acquire permits to own land and bring in skilled workers and experts to work in Thailand.

<u>Tax Incentives:</u> the Thailand Board of Investments provides corporate income tax exemptions for 10 years to technology and innovation developments in biotech, nanotech, advanced material technology, and digital technology. There are also exemptions of import duties on various raw or essential materials.

#### The Thai government wants to capitalize on the market development of medical tourism

<u>Visas:</u> Thailand is shifting public policy toward creating an environment wherein medical tourists can access the country's services with ease. This includes the <u>loosening of visa restrictions and the creation of smart visas.</u>

<u>Private hospitals and conglomerates:</u> Private hospitals are driving Thailand's medical tourism industry, and attracting investments from conglomerates. The private hospitals are expanding and forming partnerships with foreign online platforms or companies

## Regulatory landscape, including data privacy laws, is favorable for healthtech startups in Thailand



#### Biotech and digitalization are primed to be the next big areas of development in Thailand

<u>Digitalization:</u> Thailand's eHealth strategy largely aims to develop effective IT infrastructure for the country's public health systems, and are actively searching for and working with tech firms to implement these solutions (e.g. VMware partnered with MoPH for IT infrastructure, Block M.D. running test trials for an EHR on blockchain)

**<u>Biotech:</u>** With its already large market position in APAC's medical devices sector, Thailand's incentives are set to attract foreign and domestic projects and investments in the biotech and medical devices sector.

## Thailand's newly introduced data privacy act, the *PDPA*, closely following EU's GDPR to protect consumer data privacy

<u>Personal Data Protection:</u> The most important part of the PDPA is getting user consent for collecting, using, and sharing data. This law applies to any businesses that collect, process, and/or share personal data in Thailand from users all around the world. In addition, businesses must ensure physical and digital security measures to protect the customer data from unauthorized and malicious access.

<u>Impact on startups in healthtech:</u> PDPA requires a little bit more protocol, documentation, and communication, but it does not affect businesses significantly, nor does it create any issues/barriers for new startups. However, if Thailand were to implement additional standards such as the HIPAA Compliance equivalent in Thailand, this may pose barriers and more hurdles for healthtech startups working with patient data.

## Key Challenges in the Current Healthcare System include...



#### **Urban-Rural Gap**

- The physician to general population ratio in the rural areas is sparce, as rural health centers cannot compete with urban hospitals in attracting talent with high compensation
- This gap leads to a less access and lower quality of service for people in rural areas

### Disparities in Insurance Schemes

The universal healthcare consists of three schemes, all with its own legal framework and eligibilities,
 meaning that not all people will have equal access to similar packages of healthcare

#### **Growing Costs**

• The general tax funded universal healthcare system is expensive, and changes will need to be made to lower costs especially with an aging population in Thailand

### Shortage of Healthcare Professionals

• The MoPH is facing a shortage of registered nurses, leading to higher cost of staffing, lower quality of life for overworked nurses, and a lower quality of care for hospitals that are short staffed

Increasing costs and shortages of staff will require technological solutions

Sources: WHO, NIH



**Executive Summary & Key Findings** 

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Indonesia

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Philippines

## The Philippines – Key Indicators

[Indicators are for year 2019 unless otherwise stated]



#### **Economic Indicators**

GDP (PPP current int'l \$): 1,003 bn

**GDP** growth rate: 6.0%

GDP per capita (PPP current int'l \$): 8,908

GDP per capita (current US\$): 3,485 Unemployment (ILO estimate): 2.2% Population below poverty line (2017):

21.6%

Ease of Doing Business ranking: 95<sup>th</sup> (out of 190)

Procedures to register a business: 13 Cost of business start-up procedures (%

of GNI per capita): 23.3%

Mobile subscriptions / 100

inhabitants: 155

Internet users as % of population: 43%

**Broadband subscriptions / 100** 

inhabitants: 3.87

#### Demographic Indicators

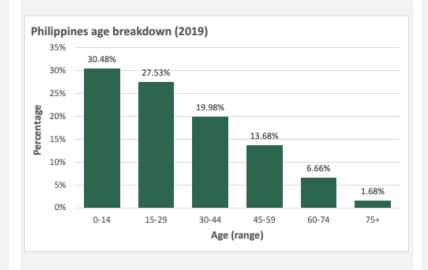
**Population (2020 est.):** 109.18m

Population growth rate (2020 est.): 1.52%

Languages: Filipino (based on Tagalog),

English

**Urban population:** 50.98m (47% of total)



#### Healthcare Indicators

Healthcare expenditure as % of GDP

**(2017):** 4.45%

Healthcare expenditure per capita (2017,

current US\$): 132.90 USD

**Human Development Index ranking: 106th** 

(out of 189)

Life expectancy at birth: 70 years

Infant mortality rate: 20 deaths/1,000 live

births

Physician density: 0.6 physicians/1,000

population

Hospital bed density: 1 bed/1,000

population

Private sector share of hospital beds

**(2016)**: 53%

Major causes of death: 1) Heart disease, 2)

Stroke, 3) Lower respiratory infection, 4) Chronic kidney disease, 5) Tuberculosis

Sources: CIA Factbook, World Bank

# The Philippines' healthcare ecosystem is highly fragmented across both public and private health sectors



#### Public Healthcare System

- Gov't has actively pursued universal health coverage since 2010 but access remains highly inequitable
- Relatively low quality of care due to limited health facilities relative to growing population, and poor physician adherence to clinical practice
- Financial risk protection for healthcare remains limited – limited coverage by national social health insurance scheme PhilHealth
- Fragmented, with more than a thousand autonomous local health systems at provincial, municipal level

National Level: Department of Health
Develops & enforces national policies, evaluates &
delivers tertiary & specialized hospital services

**Provincial Level:** Provincial Departments of Health Tasked with primary & secondary hospital care

Municipal Level: Local Health Centres, Stations Tasked with providing primary health care, promotive & preventative health programmes, basic clininal care

#### Private Healthcare Sector

- The Philippines' private healthcare sector is extensive & expanding
- In 2016, the private healthcare sector accounted for 53% of hospital beds in the Philippines (but caters to only about 30% of the population)
- Private healthcare is widely available in major cities, and generally offers higher quality and faster treatment than public healthcare facilities
- The Philippines lacks an effective mechanism to regulate the large and fragmented private healthcare sector

## Gov't efforts at universal health coverage and digital health service delivery have had limited success



#### High out-of-pocket health expenditures, particularly on medicines

<u>National Social Health Insurance (PhilHealth):</u> While the gov't has promised universal health coverage and sought to expand membership of national social health insurance programme PhilHealth, the **out-of-pocket share of health expenditure remains the highest among SEA's five largest economies at 54%** (compared to 37% in Indonesia and 12% in Thailand). PhilHealth-covered services focus on inpatient care, hence **medicines are the main driver of out-of-pocket spending.** 

<u>Fragmented Pharma Retail:</u> Filipinos mostly access medicines through private retail drugstores. Large drugstore chains have most of the market in big cities, while in other municipalities, medicines are mostly obtained from pharmacies operated by local pharmacists and physicians. While the emergence of generic medicine retailers in recent years has provided competition to large drugstore chains in the cities and helped to push prices down, the relative fragmentation of the sector has led to procurement inefficiencies and higher costs.

#### Uneven implementation of gov't digital health efforts, including a health information exchange (HIE)

<u>eHealth Strategic Framework & Plan</u>: The Department of Health's eHealth Strategic Framework & Plan (2014 – 2020) envisioned that by 2020, eHealth would enable widespread access to health care services and health information, but **implementation has been lacking** in part because fragmentation has prevented public healthcare system from leveraging procurement power to promote eHealth.

<u>Philippine Health Information Exchange (PHIE):</u> A major issue in the Philippines' fragmented health system is the lack of a health information exchange allowing for the sharing of health data that would allow more efficient provision of private and public healthcare. Currently, health record management continues to follow a provider-centric model and still mostly uses paper records. While implementation of the PHIE, a component of the gov't's eHealth strategy began in 2016, it continues to be in a testing phase.

#### Growing demand for imaging & diagnostic equipment to address chronic diseases

<u>Medical Equipment Demand Patterns:</u> Notable trends include: (1) a shift in demand towards the value segment to contain healthcare costs, and (2) increased demand for imaging & diagnostic equipment resulting from rise in chronic diseases such as diabetes, cancer and cardiovascular diseases.

# Healthtech ventures must manage the Philippines' comprehensive data privacy measures



#### Comprehensive data privacy measures are enforced by a relatively active independent watchdog

<u>Data Privacy Act (DPA) 2012:</u> The comprehensive DPA was passed in 2012 "to protect the fundamental human right of privacy, of communication while ensuring free flow of information to promote innovation and growth". It has extraterritorial application, applying not only to businesses located in the Philippines, but also when equipment based in the Philippines is used for processing data, as well as to the processing of Philippines' citizens' personal information, regardless of where they reside. The law has relatively extensive requirements for businesses, including mandatory data protection officers and breach reporting rules, as well as an annual written report documenting all security incidents and personal data breaches. Infringement penalties extend up to six years' imprisonment.

National Privacy Commission (NPC): The NPC is the independent body responsible for administering the DPA and is vested with a relatively extensive range of powers including receiving complaints, instituting investigations on data privacy incidents, and compelling entities to abide by its orders in matters affecting data privacy. For instance, in Feb 2020, it directed that Grab Philippines cease its selfie-verification and in-vehicle audio and video recording systems due to data privacy deficiencies. It also shut down a number of online lending apps in Oct 2019 because they had violated the DPA by publicly sharing information on defaulting borrowers to shame them.

#### Covid-19 pandemic has prompted efforts to clarify how data privacy applies to healthcare

<u>DPA Implications for Contact Tracing During Covid-19 Pandemic</u>: In Aug 2020, Interior Secretary Eduardo Año reportedly acknowledged that the DPA posed a challenge in contact tracing during the Covid-19 pandemic, as it limited the types of information hospitals could collect from patients. The Philippines' business sector (as represented by major business associations including the Philippine Chamber of Commerce and Industry) also publicly called for the temporary suspension of the DPA in order to reduce the expenses involved in contact tracing. The NPC subsequently clarified that the DPA should not prevent hospitals from sharing patient information with the relevant authorities, but advised against publicly naming patients even for contact tracing efforts, due to the risk of possible harassment or humiliation.

<u>Department of Health (DOH) and NPC Collaboration on Telemedicine Framework:</u> In Apr 2020, the DOH and NPC jointly developed a framework for telemedicine services in an effort to decongest hospitals and provide access to healthcare during the Enhanced Community Quarantine (i.e. lockdown). It established that licensed healthcare providers conducting medical consultations over the phone, chat, SMS, and other audio and visual-conferencing platforms were formally considered telemedicine services in the country, and were allowed to issue electronic case reports and prescriptions.

Sources: Various sources including Philippines National Privacy Commission; Philippine Department of Health; GrowYourBusiness.org; Manila Bulletin ("Business sector suggests suspension of Data Privacy Law")

## Key Challenges in the Current Healthcare System include...



## Maldistribution of Healthcare Resources

- Healthcare resources are heavily concentrated in the more economically developed island of Luzon
   Luzon houses ~53% of the population, but has 65% of hospital beds in the Philippines
- Geographically isolated and economically disadvantaged areas (e.g. in Mindanao) suffer from a shortage
  of healthcare professionals and facilities Mindanao has only one bed per 4,606 people compared to
  one-per-591 in Metro Manila.

#### **Brain Drain**

- The Philippines is a major exporter of healthcare professionals (6th largest contributor of doctors and top contributor of nurses to OECD countries), but struggles to ensure adequate availability within the country, with an estimated shortage of 23,000 nurses in the Philippines
- Push factors include low salary and poor working conditions, but tele-health offers potential to connect this
  diaspora of healthcare professionals with needs back in the Philippines

#### **Rising Healthcare Costs**

- Healthcare costs are rising significantly Willis Towers Watson estimated medical costs net of general inflation would increase by 4.9% in the Philippines in 2020
- Financial protection from PhilHealth remains limited, resulting in a shift in demand towards the value segment (both in medicines and medical equipment) to contain healthcare costs

## Fragmented, Inadequate Governance Framework

 The Philippines lacks a centralized healthcare resource allocation authority, with the public healthcare system fragmented between the demand-side (Department of Health, local government units) and the financing supply-side (PhilHealth), resulting in procurement inefficiencies and shortages in medicines and equipment.

The fragmented nature of the healthcare system has resulted in inefficiencies and misallocation of resources



## Other Useful Reports & Resources



Report Name	Source	Link
The ~USD 320 Billion Healthcare Challenge in ASEAN	Solidiance	https://www.solidiance.com/insights/white-papers/the-usd-320-billion-healthcare-challenge-in-asean/download?token=q9ZWvrYXJG
APAC HealthTech Investment Landscap- FY2019	Galen Growth	https://andhealth.com.au/wp-content/uploads/2020/01/Galen-Growth- HealthTech-Investment-Landscape-FY2019-Public.pdf
Southeast Asia: The New Emerging Healthcare Market Challenge	Economist Intelligence Unit	https://www.eiu.com/public/topical_report.aspx?campaignid=seasiahealt hcare
Deloitte Healthcare and Life Sciences Predictions 2020: Southeast Asia Supplement	Deloitte Centre for Health Solutions	https://www2.deloitte.com/content/dam/Deloitte/sg/Documents/life-sciences-health-care/sea-lshc-predictions-2020-sea-supplement-noexp.pdf
EMPEA Data Insight Southeast Asia - 2020	EMPEA	Offline
Southeast Asia Exit Landscape A NEW FRONTIER	INSEAD	https://www.insead.edu/sites/default/files/assets/dept/centres/gpei/docs/golden-gate-ventures-insead-sea-exit-landscape.pdf?t=1006&t=1006
The Republic of Indonesia Health System Review	WHO	https://apps.who.int/iris/bitstream/handle/10665/254716/9789290225164 -eng.pdf;sequence=1

### Advisors/Interview Sources



Name	Role	Company	Company Description
Jeff Stolte	Senior Partner	Providence Ventures (PV)	PV is the VC arm of Providence Healthcare, a \$25B US organization comprised of 50+ hospitals. PV is currently investing their 2nd \$150M fund, and looks for both opportunistic investments and investment opportunities that align with Providence's strategic and operational goals
Valerian Fauvel	Non-Executive Director	Insitor Partners (IP)	IP is a SGP-based VC focused on startups in emerging Asian markets. Their goal is to support the development of markets inclusive of low-income communities
Steve Okun	Senior Advisor	McLarty Associates & EMPEA	McLarty helps clients manage policy & government issues around the world
Aki Roslan	Principal	Strategic Year Holdings Limited	Strategic Year Holdings Limited ("Strategic Year") is a privately held investment company (Private equity and real estate) active in SEA.

