Building Prolific Entrepreneurship Ecosystems: Shared Lessons from India and ASEAN

Episode 2

Technology and Distribution Innovations in Healthtech

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Disclaimer

Executive Summary

This report is part of a study that CIIE.CO, the Innovation Continuum (henceforth, CIIE.CO), and Economic Research Institute of ASEAN and East Asia (ERIA) are conducting to open collaboration and peer learning between India and the Association of Southeast Asian Nations (ASEAN) and to share knowledge and tools relevant to entrepreneurship ecosystems in South and Southeast Asia. It dives into the health technology (healthtech) ecosystem in India and ASEAN and presents a comparative explanation of some of the major policies. This report is based on the joint roundtable held by CIIE.CO and ERIA on 'Technology and Distribution Innovations in Healthtech', as well as previous research by both organisations on healthtech in the respective country and/or region.

Key Messages

- As a direct outcome of the coronavirus disease (COVID-19), 'digital' has emerged as the viable model for healthcare delivery. India and ASEAN have been witnessing a rapid rise in digital practices amongst doctors, patients, and other value chain participants. The pandemic, particularly, has led to the acceleration of newer operating models in telemedicine and e-pharmacy to solve otherwise complex healthcare problems.

- Per Alfonsius Timboel of Halodoc Indonesia, the disruption in the healthcare ecosystem because of COVID-19 has accelerated the growth of the healthtech industry, allowing healthtech startups to play a role as 'hospital without walls.' The roles of the private sector and emerging healthtech startups have been critical in supporting government COVID-19 measures in Indonesia, as the government plans to utilise a digital health strategy as part of the Indonesia Digital Roadmap in 2024.

- In the words of Dr. Satya Dash, culture is very important to building a healthtech innovation ecosystem. A culture of risk-taking has started in India in the last 15–20 years. The expanding spread of e-commerce is also exciting young startups to build innovative health delivery solutions. The current ease of getting government funding for early-stage startups, which started about 20 years ago, is evidence of significant push from the government.

- In India and ASEAN, there is an increased collaboration between the government and the private sector to build on technological advances and improve the delivery of healthcare services. According to Von Leong, in a post-COVID world, telemedicine and e-pharmacy services are now more widely accepted than ever before. The private sector has a big role to play in the growth of these services. Also, public-private collaboration in vaccine research and distribution, as well as distribution of personal protective equipment (PPE) can work under crisis situations if there is a political will and, of course, support of philanthropists and impact investors who come together to support these initiatives.

- It is very important to have a strong data management framework for healthcare. Nita Tyagi opines that for individuals, data helps access the right diagnosis and treatment. For healthcare organisations, data helps prepare appropriate treatment protocols. For a nation, data helps seamlessly mitigate a pandemic-like situation. These should be the incentives for organisations to invest in data management that ensures accurate data is in place for all stakeholders.

INTRODUCTION

In 2020, India's healthtech (standing at $1.9 billion) comprised under 1%, of the overall healthcare industry. With over 5,000 healthtech startups, it is estimated to grow at a compound annual growth rate (CAGR) of 39% to touch $5 billion by 2023 (Goyal, 2021). India's nearly 700 million internet users are poised to grow to over 974 million users by 2025 (Bali, 2021). It is safe to conclude that mobile internet usage will be a key driving force of healthtech adoption much on the lines of the adoption of financial technology (fintech) and education technology (edtech). As a result of this digitalisation, 15%–20% of healthcare across triaging, consults, remote monitoring, home health, etc is expected to shift to virtual care by 2025 (Ernst and Young, 2020).

The COVID-19 pandemic helped doctors and patients realise the need for and importance of virtual consultations and telemedicine services. The Government of India's eSanjeevani initiative for national telemedicine service launched in November 2019 and facilitated 3 million consultations by March 2021 (PIB Delhi, 2021). Both consultations and diagnostics shifted to an online mode where patients can book a variety of tests including for blood markers, PCRs, and even simple image-based tests like X-rays and get them done from their homes. While services like eSanjeevani aided consultations, many private diagnostics labs built their digital fronts (apps and web interfaces) for patients to book tests like RT-PCRs and other profiles.

The healthcare industry in Southeast Asia is also at an important juncture in its history. Demand for healthcare in the region has never been greater, especially with the COVID-19 pandemic. The increasing number of mobile users and high mobile penetration rates in Southeast Asia, together with the proliferation of health-related mobile apps, facilitate the digitalisation of healthcare. Currently, in eight ASEAN nations, over 55% of the population actively use the internet, while over 90% have mobile network coverage (Cisco, 2019). The growing number of mobile users has fueled openness for healthtech innovation and opportunities in Southeast Asia. The growth of investment in healthtech companies in recent years – evidenced by 10 healthtech companies that received a combined $147 million in the first half of 2021 (GPCA, 2022) – further supports this. Amongst healthtech sectors, telehealth and predictive analytic software obtained the most capital from 2020 to the first half of 2021, attracting 85% of invested capital in Southeast Asia (EDB, 2022). Overall, the region is enjoying strong growth in telehealth, digital therapeutics, diagnostics, remote patient monitoring, and analytics.

Governments in Southeast Asia recognise the need for healthcare reform and put forward policy plans to move in that direction. E-health and healthtech present huge opportunities for ASEAN governments to translate the various healthcare policies in the past decade into wider practice. The Masterplan on ASEAN Connectivity 2025 estimates that the potential of digital disruption in healthcare in the region can bring economic benefits of $20–$53 billion by 2030 (ASEAN, 2016). The ASEAN Comprehensive Recovery Network (ACRN) further emphasised the importance of leveraging digital technology to accelerate drug discovery and distribution, especially in building a sustainable and resilient post-pandemic recovery (ASEAN, 2020a). However, all countries in ASEAN currently require multiple major IT investments, across sectors plagued by issues of fragmentation in investments, uncoordinated planning, and low uptake of technologies.

The healthtech market in India presents a lot of opportunities and risks. Innovative startups frequently introduce a surge of new products and services. However, the legislative policy framework to protect and regulate such developments remains one step behind. Regulators strive to formulate forward-looking policies and legislations given the restrictions and, most times, the absence of law.

In the ASEAN, many governments still face problems with regulation. For instance, in Indonesia, personal data protection is not yet codified under a certain law. In the Philippines, the major hindrance to implementing the eHealth Strategic Framework is the fragmented health system, which lacks the health information exchange necessary to provide more efficient private and public healthcare.

Policy Overview

The Case of India

The policy framework that governs healthtech in India is a combination of existing technology, consumer, and data protection laws with a few regulations in place specific to healthtech. The healthtech ecosystem is currently governed by a patchwork of legacy and new legislations, including the Telemedicine Practice Guidelines of India, 2020, the Consumer Protection Act, 2019, the Consumer Protection (E-Commerce) Rules, 2020, the Drugs and Cosmetics Act, 1940, the Drugs and Cosmetics Rules, 1945, the Drugs and Cosmetics (Amendment) Rules, 2018 (E-Pharmacy Rules) and the Electronic Health Records (EHR) standards, 2016.

Telemedicine and e-Pharmacy

a. Telemedicine Practice Guideline 2020

The Telemedicine Practice Guidelines, March 2020 provides a framework for registered medical practitioners (RMPs) to follow for teleconsultations (Telemedicine Practice Guidelines – Ministry of Health and Family Welfare, 2020). The mandatory guidelines focus on platform aggregators. The guidelines also clarify that technology platforms based on Artificial Intelligence/Machine Learning (AI/ML) may not counsel patients or prescribe any medicines to patients. Only registered medical practitioners may counsel or prescribe and must directly communicate with the patient. The guidelines also prescribe strict consequences for non-compliance, including blocking from the platform.

Where are the policy gaps?

In April 2020, the Department of Clinical Psychology, National Institute of Mental Health and Neurosciences issued the guidelines for tele-psychotherapy services. However, unlike the Telemedicine Practice Guidelines, these do not appear to impose separate obligations for platform aggregators.

b. Consumer Protection Act, 2019 and the Consumer Protection (E-Commerce) Rules, 2020

The Consumer Protection Act, 2019 and the Consumer Protection (E-Commerce) Rules, 2020 were implemented since several e-commerce platforms offer consumers the purchase of fitness equipment and health supplements. The rules mandate these platforms present descriptions, images, and other relevant information about the respective product that is accurate, corresponds directly with the appearance, nature, quality, purpose, etc. of the product, and is provided in a clear and accessible manner. Further, these platforms

must also publish the terms and conditions that govern their relationship with sellers on its platform, a description of any differentiated treatment which they give or might give between goods or services or sellers of the same category. For inventory e-commerce entities, the rules mandate the display of accurate information relating to all sale-related details (return/exchange/payment method/shipping, etc.), ensuring accuracy in advertisements and authenticity of products as advertised (Department of Consumer Affairs, 2020).

c. Drugs and Cosmetics Act, 1940 and Drugs and Cosmetics Rules, 1945

The Drugs and Cosmetics Act, 1940; the Drugs and Cosmetics Rules, 1945; and the Pharmacy Act, 1948 are the primary legislation governing the manufacture, sale, and distribution of drugs and cosmetics in India. The Drugs and Cosmetics Act requires entities to possess a valid license for manufacturing, sale, distribution, or stocking of drugs or cosmetics. Further, certain drugs (Schedule H, Schedule H-1 or Schedule X) can be sold only against a valid prescription signed by a registered medical practitioner (RMP). For the issuance of a prescription, it is mandatory for RMPs to 'examine' the patient as required by the Medical Council of India prior to issuing a prescription. This has implications for the model of telephonic authorisation to prescribe drugs and sell prescription drugs online. The Drugs and Cosmetics Act also deals with the counterfeiting of drugs. The manufacture, sale and distribution, and import of counterfeit drugs is prohibited and attracts penalties (Sections 13 and 27) (Central Drugs Standard Control Organization, n.d.)

The Drugs and Cosmetic Act and Drugs and Cosmetics Rules govern the offline sale of drugs but do not refer to online sales. The Pharmacy Act, 1948 and Pharmacy Practice Regulations, 2015 impose certain obligations and duties on pharmacists in connection with the preparation and sale of drugs, but again do not appear to envisage online sales of drugs.

d. Drugs and Cosmetics (Amendment) Rules, 2018 (E-Pharmacy Rules)

In order to regulate the sale of drugs online, draft E-Pharmacy Rules were issued in 2018, which the Ministry of Health and Family Welfare has not notified by the end of 2021. In their draft form, the rules provide legal recognition to e-pharmacies that are currently operating without a specific legislation to govern them. Under these rules, an e-pharmacy is defined as "the business of distribution or sale, stock, exhibit or offer for sale of drugs through a web portal or any other electronic mode." The rules mandate e-pharmacies to register and set up a grievance redress mechanism. Once a registered e-pharmacy receives a prescription, it must arrange for a registered pharmacist to verify patient details and dispense the drugs.

The E-Pharmacy Rules are not in line with the recommendations of a sub-committee comprising the Drugs Consultative Committee under the Drugs Controller General of India (DGCI) in 2016. The sub-committee recommended that drugs sold online must be based on electronically generated and digitally signed prescriptions to prevent misuses, such as the multiple uses of one prescription or forged prescriptions. The sub-committee has also observed additional risks involved in the sale of drugs through the internet. First, monitoring fake and illegal pharmacies could be a challenge; cyber experts must tackle such cases. Second, a scanned copy of a prescription is not authentic under the Drugs and Cosmetics Act and the Information Technology Act, 2000. One prescription could be uploaded on two different e-pharmacy platforms, leading to severe drug abuse. Further, Electronic Health Record Standards, 2016 issued by the Ministry of Health, also state that a registered medical practitioner must digitally sign e-prescriptions; the E-Pharmacy Rules do not include such stipulations (Report of Sub-Committee Constituted by the Drugs Consultative Committee to Examine the Issue of Regulating the Sale of Drugs over Internet under the Drug and Cosmetics Rule 1945, 2016).

The issue of prescriptions present challenges for online pharmacy business models. It is unclear what systems and controls are applicable to online pharmacies particularly to verify the authenticity of prescriptions. Currently, conflict of interest is an issue because the E-Pharmacy Rules allow e-pharmacy platforms to generate prescriptions through its own panel of doctors.

e. Electronic Health Records Standards, 2016

Clinical establishments and health care providers in India use electronic medical records (EMRs) and electronic health records (EHRs) as preferred methods to store patient information. In fact, the rules of Clinical Establishments (Registration and Regulation) Act 2010 mandate the 'maintenance and provision of EMR for every patient' for the registration and continuation of every clinical establishment. In 2013, the Ministry of Health and Family Welfare introduced the EHR Standards, a standard-based system for healthcare providers to follow when creating and maintaining EHRs. These standards were revised and notified in December 2016. There remains a need for a comprehensive personal data protection mechanism for digital health records, and, therefore, a need for an interim policy to address India's privacy concerns.

Generic Drugs

India is the largest provider of generic drugs globally. The Indian pharmaceutical sector supplies over 50% of global demand for various vaccines, 40% of generic demand in the US and 25% of all medicine in the UK. Globally, India ranks 3rd in terms of pharmaceutical production by volume and 14th by value. The domestic pharmaceutical industry includes a network of 3,000 drug companies and 10,500 manufacturing units (IBEF, 2021).

In May 2016, the Drugs Technical Advisory Board of India considered amending Rule 65 (11A) of the Drugs and Cosmetics Act 1940 such that pharmacies sell generic drugs to patients even if the prescriptions specify the branded versions. Also, clear-cut guidelines have been formulated which state that there should be a 90% confidence interval of generic-drug-to-brand-drug ratio for key pharmacokinetic parameters to lie between 80% and 125% of 1.00. In vivo bioequivalences (BEs) are required by the regulators to ensure that the pharmaceutical equivalent reference product is therapeutically equal to the standard reference product.

Where are the policy gaps?

- The Central Drugs Standard Control Organization (CDSCO), India's national regulatory body for cosmetics, pharmaceuticals and medical devices has recently released guidelines for Bioavailability (BA) / Bioequivalence (BE) studies for generic drugs. It has given a checklist for submission of documents before undertaking BA/BE study, but is not clear whether they will ensure bioequivalence of each and every molecule.

- India is missing out on ensuring quality with strict regulatory mandate and providing updated information regarding the generic drugs (as given by United States Food and Drug Administration in its Orange Book). This will only eventually enhance the prescription of generic drugs.

Data Protection on Digital Healthcare

India launched the Ayushman Bharat Digital Mission (ABDM) in September 2021 to bring revolutionary changes in healthcare facilities. The mission is to develop the backbone necessary to support the integrated digital health infrastructure of the country. The mission has four key components: health ID, health facility registry, health record, and registry of healthcare professionals.

What are the challenges and policy gaps?

- The fundamental challenges revolve around ensuring the privacy of data and interoperability (the right exchange and use of information). Building a strong data framework for the country will need better last-mile connectivity and much more advanced cloud infrastructure.

- At present, there are no interoperability standards and guidelines for having the right tools and bandwidth to address issues – such as links not working and data not being updated – and to ensure faster uploads for large file sizes such as X-ray's and MRI scans.

- The Parliament is still reviewing the Personal Data Protection (PDP) Bill. Implementing the PDP faster is the only way forward to ensure uniformity in usage laws, ultimately providing better data protection.

With the growing number of healthtech startups, India needs a policy to safeguard healthcare data privacy. The Health Insurance Portability and Accountability Act (HIPAA), 1996 in the United States established the legal framework for privacy and protection of health information and gives patients substantial control over their protected health information. The nearest policy India has to the HIPAA is a draft bill, called the Digital Information Security in Healthcare Act (DISHA), 2018, which is still in the pipeline to become law.

Though the DISHA has been in circulation for a long time, it has not been passed as an Act yet. The draft bill defines digital healthcare data as an electronic record of health-related information about an individual and is especially relevant for businesses aggregating patient records and for e-pharmacies collecting digital prescriptions of patients. It also prohibits commercial use of digital healthcare data. Further, it clearly defines the purposes for which healthcare data can be collected and processed:

- The delivery of patient-centered medical care

- Provision of information to help guide medical decisions at the time and place of treatment

- Improved coordination of care information amongst different clinical establishments through a secure infrastructure

- The improvement of public health responses through review and research.

Despite explicit consent, healthcare data may not be used for other purposes. Further, in the DISHA Bill framework, an individual retains autonomy throughout the process and can withdraw his/her consent at any time. For instance, if an individual consents to the collection of his/her healthcare data, they may withdraw the consent for utilisation or processing of that data. The requirement of explicit consent at each stage makes this easier.

In addition to healthcare providers, namely state or private health insurance companies, pharmaceutical companies, e-pharmacies, health and fitness apps, implantable or wearable medical devices, etc. are also governed by the DISHA Bill. With DISHA Bill, India is looking forward to a congruent framework for aggregating medical data and health records for easier ownership and sharing by beneficiaries when they require access to those services.

In addition, India is looking to enact the Personal Data Protection Bill 2019. The bill, which provides a general framework for data protection, deals exclusively with sensitive personal data. It is, therefore, especially important for the healthtech industry. Some of the data protection safeguards include the following:

- Prohibition on processing personal data
- Purpose limitation
- Data minimisation
- Restriction on retention periods
- Nature of consent required

It also deals with other security safeguards, such as mandatory data breach reports and data protection impact assessments. The bill also provides for grievance redressal by the data fiduciary. If enacted, the bill will provide India with a broad, cross-sector privacy and data protection mechanism. It would also impel several Indian healthtech startups to reorient their operating models to be compliant.

The Case of ASEAN

Despite its late start, Southeast Asia is now catching up with the rest of the globe with its rapidly accelerating technological adoptions in the healthcare sector. Since ASEAN started supporting the United Nations Sustainable Development Goals 2015 on universal health coverage, ASEAN countries have progressively tried to overcome healthcare disparities by taking up digitalisation as an opportunity to improve healthcare access, quality, and affordability in the region.

In the ASEAN Digital Master Plan 2025, enhancing digital health is one of the main public service priorities (ASEAN, 2021). In addition, as part of the ASEAN Comprehensive Recovery Framework's broad strategy to speed up the digital transformation, the region highlighted the need to push initiatives and programs to enhance/facilitate the use of digitalisation in healthcare in areas such as telemedicine (ASEAN, 2020b). Digital health services could help ASEAN countries ease the challenges in their existing healthcare system and fulfill the rising demand for better healthcare services, especially amid the COVID-19 pandemic.

Telemedicine and Telehealth

Telemedicine frameworks are currently at different levels of development in ASEAN countries, and various amendments were implemented in response to the pandemic. While countries such as Malaysia and the Philippines have specific acts governing the telemedicine sector, general codes and/or advisory

guidelines regulate the provision of telemedicine services in the other emerging ASEAN countries.

For some ASEAN Member States, telemedicine was incorporated into domestic administrative regulations. In the Philippines, the government has issued several pieces of legislation to define the practice of telemedicine, including the Telehealth Act of 2012, the Telehealth Act of 2014, and Senate Bill No. 1618 or the Philippine eHealth System and Service Act (Department of Health/DoH, 2014). Another example is Malaysia with its longstanding Telemedicine Act 564 that was issued by the Ministry of Health (MoH) in 1997, which included definitions of telemedicine and healthcare practitioners, confidentiality, identification, data storage, record keeping, international service, ethics, and legal issues (MoH, 1997).

Whilst some member states provided certain acts on telemedicine, others provided advisory guidelines and frameworks. Prior to the COVID-19 pandemic, Indonesia regulated telemedicine under the Regulation of the Minister of Health (Permenkes) No 20 of 2019 on the Organisation of Telemedicine Services through Health Service Facilities. The guideline provides a list of definitions related to telemedicine, diagnostics, record keeping, app licensing, consent, confidentiality, clinical governance, and funding regulation in Indonesia. In Viet Nam, Circular 49/2017, issued by the Ministry of Health, regulates domestic telemedicine practices, allowing physicians to offer telemedicine services to patients, subject to certain requirements (MoH, 2017).

In Singapore, although there is currently no all-encompassing legislation governing telemedicine, the upcoming Healthcare Services Act (HCSA) is expected to regulate the sector by 2022 (HCSA, 2021). The National Telemedicine Guidelines published in 2015 set clear principles around areas such as artificial intelligence and data governance, medical devices, telemedicine licensing, and legal issues. This is also supported by the Personal Data Protection Act introduced in 2012 and advisory guidelines for healthcare that the Government of Singapore issued to ensure data protection on digital health. For Thailand, the provision of telemedicine is only regulated through Notification No. 54/2563 (2020) issued by the Thai Medical Council, effective from 21 July 2020.

Several initiatives have been adopted since the onset of the pandemic to implement COVID-19 regulation amendments where telemedicine regulations existed prior to the pandemic. In 2020, the Indonesian Medical Council (KKI) issued KKI Regulation 74 regarding the use of medical treatment or services through telemedicine during the crisis (Endahayu et al., 2020). In 2020, the Department of Health (DoH) and the National Privacy Commission (NPC) of the Philippines issued a joint Memorandum on the use of telemedicine in the COVID-19, with aims of alleviating surges in confirmed cases and minimising risks posed by unnecessary patient traffic in health care facilities (DoH, 2020). In the same year, the Malaysian Medical Council (MMC) published a telehealth advisory, guided by the professional code of conduct, to

ensure the well-being and care of telehealth patients in response to the COVID-19 crisis (MMC, 2020). In addition, the Medical Council of Thailand has issued a telemedicine guideline as a criterion for health care providers to ensure the safety of patients.

As it stands, though several ASEAN countries had existing regulations to support telemedicine practices and adjusted those to adapt to the COVID-19 pandemic, most policies are still taking the form of advisory and guidelines. These guidelines are often unclear in providing regulatory implementation or carrying out telemedicine activities in the respective country.

Data Protection on Digital Healthcare

Another dimension of digital health is the need for regulations that ensure the quality of services to users. Whilst several ASEAN countries have regulations or legislation targeting telemedicine services, some amendments are still needed to adapt to digital health services facing the challenge from COVID-19. Data privacy is amongst the main concern as digital health services use a great deal of sensitive personal information. A data protection framework is a building block for the sustainability of digital health, but some ASEAN countries lack any legislation on privacy and data protection or have only draft legislation [United Nations Conference on Trade and Development (UNCTAD), 2020].

In 2019, the Global Digital Health Index (GDHI) assessed countries' digital health preparedness and adoption. It also measured the readiness of the wider health system to adopt digital health interventions within ASEAN. The index shows that many ASEAN countries are still lagging on the legal framework for data security, laws or regulations on privacy, access to health information, confidentiality, protocol for regulating digital services, and rules on cross-border data security and sharing (GDHI, 2020).

What are the challenges and policy gaps?

In most emerging ASEAN countries, although there is no specific data protection or privacy law that applies to the provision of telemedicine services, some countries refer to the general rules on data protection that apply to those services. For instance, in Malaysia, there are no specific regulations on data privacy regarding telemedicine, instead, the Personal Data Protection Act (PDAD) 2010 regulates the use of personal data in commercial transactions to ensure the data is not misused or misapplied (Ministry of Communications and Multimedia/KKMM, 2010). In Viet Nam, although there is no specific data protection law on telehealth, the Law on Network Information Security that came into effect in 2016, as well as several other data protection acts, specifies the duty of companies to protect personal information on operation over the internet.

The Emerging Public-Private Collaboration in Healthtech

As the health impacts and burden of COVID-19 escalated, countries quickly recognised the benefits of introducing digital health tools to improve access to health care during the pandemic. Governments across the region have endorsed initiatives to develop healthtech services, such as the promotion of telemedicine providers and the development of self-assessment tools to lighten the burden on hospitals and clinics. Healthcare facilities have benefited from digital platforms that provide a more thorough patient classification system, allowing medical practitioners to prioritise patients who are most in need of direct attention. Although digital health tools have been used for a while in some countries, this has become especially prominent during the pandemic.

Various actors and players are also taking different approaches to defining the healthtech ecosystem in the region. Across Southeast Asia, nontraditional entrants such as industrial and retail conglomerates, banks, consumer-tech companies, and telecommunications companies are now as important as the traditional healthcare incumbents such as insurers, providers, and government agencies (Baur, et al., 2021). As collaboration and strategic partnerships are critical to scaling up the business, many corporates and healthtech ventures are also increasingly entering partnerships to scale digital health services. Companies interested in the ASEAN digital health market are advised to follow the changing policies and new initiatives of government agencies closely to explore national priorities and business opportunities.

The following are some examples of public-private partnerships in ASEAN countries that emerged during COVID-19:

• Indonesia

The Ministry of Health partnered with the ride-hailing firm GO-JEK and the telemedicine provider Halodoc to provide an integrated healthcare content, consultation, and medicine purchase in all areas of Indonesia. In addition, teleconsultation and medication delivery services are free for COVID-19 patients with mild symptoms across the country in partnership with digital health platforms, Alodokter and Halodoc.

• Singapore

The Infocomm Media Development Authority (IMDA) and Enterprise Singapore (ESG) partnered with education providers such as SkillsFuture Singapore to provide a range of pre-approved digital solutions including virtual health consultations, subsidies, and grants to help small- and medium-sized enterprises (SMEs) in healthcare deal with the pandemic.

- Malaysia

The Ministry of Health and the telemedicine platform DoctorOnCall established a Virtual Health Advisory portal to provide free public access to consultations with ministry family medicine specialists or medical officers and address any uncertainties regarding COVID-19.

- Thailand

The Ministry of Public Health partnered with Thailand Tech Startup Association and private telemedicine providers, such as Doctor Raksa, to make telehealth services available to the public and health care professionals during the pandemic.

- Viet Nam

The government collaborated with Viettel Group, the largest telecommunications service company in Viet Nam, to develop the Viettel Telehealth platform. The platform enables remote medical consultation, surgery consultation, training, and technology transfer. It also provides remote health care services by connecting patients and doctors through a virtual platform.

POLICY RECOMMENDATIONS

- **Education and access to technology are main factors that contribute to digital exclusion across India and ASEAN.** Education campaigns that inform the public about the benefits, therefore enhance trust in telemedicine would facilitate a movement to wider reach of the digitalisation of healthcare. Further, developing the capacity of health professionals in digital technologies is paramount for the wider adoption of telemedicine. In order to tackle barriers in digital skills, practical training could be integrated into the curricula of medical schools.

- **Policymakers across ASEAN and India need to establish a clear legal framework for data protection to govern the collection, storage, processing and sharing of patients' data.** The legal framework should provide a simple and transparent patient consent procedure. The growing risk of cyberattacks targeting the sector must be carefully considered. Telemedicine providers should implement incident management systems to promptly identify and trace the origins of incidents that compromise and/or misuse the personal data of patients.

- **Proactive mechanisms for data protection need to be instituted at various levels of the healthcare delivery.** In order to address the growing dangers of cyberattacks, healthtech startups must be required to periodically conduct risk and data protection impact assessments; regular audits; and training programs for third parties.

- **Healthtech startups must also classify data to better understand data assets, the level of security required, where to find them, and which data assets are worth safeguarding.** They must also be aware of how and where their patient data is generated and stored, since this becomes increasingly important when data breaches occur. Photos, IP addresses, social media posts, cookies, individual likenesses, fingerprints, and other data may be classified as more sensitive than they are now as India's data privacy law advances.

- **ASEAN policymakers need to overcome any regulatory barriers to ensure legal certainty for all stakeholders** (patients, practitioners, insurance providers, etc.) by ensuring standard terminology and definitions used in their legal frameworks, which would enable cross-border provision of telemedicine services. In addition, to ensure inclusive access to telemedicine services, it is important for governments to reduce rural-urban development gaps in digital infrastructure.

- **Indian healthtech startups must be required to include privacy systems in their designs to protect their businesses and clients.** Such a system would secure personal healthcare data and allow individuals to easily exercise their rights to privacy under the Personal Data Protection Bill, 2019. Currently, startups rely on international standards, such as those set forth by the International Organisation for Standardisation (ISO).

- **The enactment and enforcement of the Personal Data Protection Bill, 2019 in India will require healthtech to have state-of-the-art data protection infrastructure.** The Act could also lay down suggestions for good practices for healthcare providers so as to ensure long term data stability and interoperability. Improving data security and privacy will go a long way towards building confidence amongst patients, especially in a sector that whole-heartedly deals with people's emotional, mental, and physical health.

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