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# Fintech Revolution for Primary Healthcare:

## Opportunities and Challenges in Asia

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## About ACCESS Health International

ACCESS Health International is an international non-profit think tank, advisory group, and implementation partner. We work to improve access to high-quality and affordable healthcare. We also work to reduce health disparities by shaping the social and environmental determinants of health. We conduct practical, evidence-based research. We cultivate partnerships. We foster health innovation. We establish long-term, in-residence, country, and regional programs. To learn more about ACCESS Health International, visit ***www.access.org***

## About MetLife Foundation

At MetLife Foundation, we are committed to expanding opportunities for low and moderate-income people around the world. We partner with non-profit organizations through three focus areas: financial health, economic inclusion, and resilient communities, while engaging MetLife employee volunteers to help drive impact. MetLife Foundation was established in 1976 to continue MetLife's long tradition of corporate contributions and community involvement. Since 1976, MetLife Foundation has contributed nearly $1 billion (USD) to support communities where MetLife has a presence. Our grant-making efforts have reached more than 17.3 million low and moderate-income individuals in 42 countries. To learn more about MetLife Foundation, visit: ***https://www.metlife.com/sustainability/MetLife-sustainability/MetLife-Foundation/***

# Acronyms and Abbreviations

AB-HWC - Ayushman Bharat-Health and Wellness Centres
ABDM - Ayushman Bharat Digital Mission
AFTECH - Indonesia Fintech Association
ASHA - Accredited Social Health Activists
BPJS-Kesehatan - Health Social Security Agency of Indonesia
BTRC - Bangladesh Telecommunication Regulatory Commission
CFRC - Community Finance Resource Center
CHCs - Community/Commune Health Centres
CHE - Current Health Expenditure
DFS - Digital Financial Services
DGFP - Directorate General of Family Planning
DGHS - Directorate General of Health Services
DHIS2 - Digital Health Information System (Bangladesh)
Fintech - Financing Technologies
GGHE-D - Domestic General Government Expenditure
HLC - Healthy Lifestyle Centre
ICDDRB - International Centre for Diarrheal Disease Research, Bangladesh
IPD - Inpatient Department
JASs - Jan Arogya Samitis
JKN - Jaminan Kesehatan Nasional (Indonesia's Social Health Insurance)
MFS - Mobile Financial Services
MoHFW - Ministry of Health and Family Welfare
NCDs - Noncommunicable Diseases
NEP - Net Earned Premium
NHA - National Health Authority, India
NHM - National Health Mission
NITF - National Insurance Trust Fund Board
NRHM - National Rural Health Mission
NUHM - National Urban Health Mission
OECD - Organization for Economic Co-operation and Development
OJK - Otoritas Jasa Keuangan (Financial Services Authority of Indonesia)
OOPE - Out-of-pocket expenditure
OPD - Outpatient Department
PHC - Primary Healthcare
PM-JAY - Pradhan Mantri Jan Arogya Yojana
PMCUs - Primary Medical Care Units
PVT-D - Domestic Private Expenditure
SBV - State Bank of Vietnam
UHC - Universal Health Coverage
UHI - Unified Health Interface
UPI - Unified Payments Interface
VIISA - Vietnam Innovative Startup Accelerator
WHO - World Health Organization

# Executive Summary

## CONTEXT

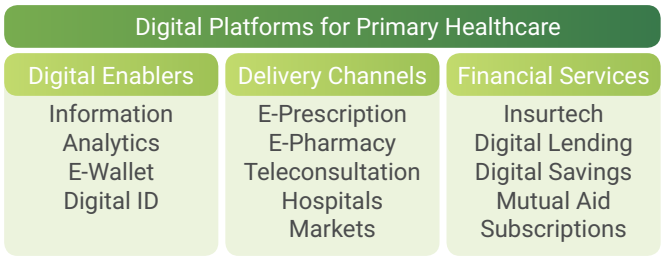
Robust primary healthcare forms the cornerstone of achieving universal health coverage and other health-related Sustainable Development Goal (SDG) targets. There is significant evidence that primary healthcare (PHC) leads to health system efficiency, health equity, and improved population health outcomes. Despite 40 years of commitment to primary healthcare (PHC) and equitable healthcare, many are still left behind.

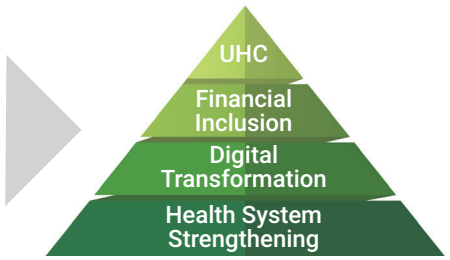
Low and middle-income people in Asia have limited access to health coverage and PHC. Rural areas in Asia lack access to PHC services in remote regions. In contrast, urban areas suffer from a multiplicity of service providers and a lack of a tiered public health system. This leads to dependency on private tertiary facilities for 60-80% of the population in Southeast Asia (SEA) for outpatient visits, resulting in high out-of-pocket expenditure (OOPE).[1] With 40% of health expenditure in the SEA as OOPE, the populations are exposed to unaffordability to health services due to poverty and financial vulnerability.[2]

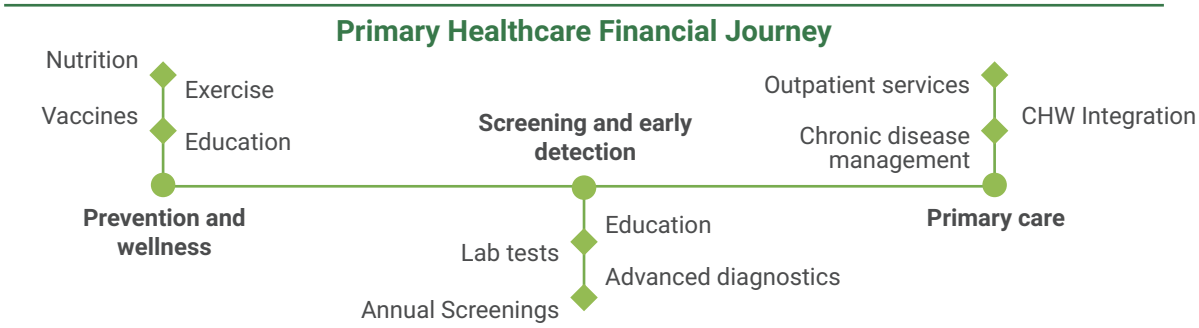
[1] *Primary Healthcare at forty: reflections from South-East Asia, WHO, https://www.who.int/docs/default-source/primary-health-care-conference/phc-regional-report-south-east-asia.pdf?sfvrsn=1c2a8e85*

[2] *Lakner C, Yonzan N, Mahler DG, Castañeda Aguilar RA, Wu H. Updated estimates of the impact of COVID-19 on global poverty: looking back at 2020 and the outlook for 2021. Data Blog, 11 January 2021. Washington (DC): World Bank; 2021*

## Context of Fintech for PHC




Financial technologies (Fintech) for Health is an approach to innovative health financing that applies financial inclusion models and tools for healthcare services, with the aim to reduce patients' vulnerability to healthcare expenses and improve access to healthcare. Fintech for Health blends digital enablers, online and offline healthcare delivery channels, and financial services to create health access models that are patient-centered. The digital platforms play a symbiotic role in improvements to the health system, digital transformation, and financial inclusion, which ultimately creates pathways to achieve Universal Health Coverage (UHC). In achieving UHC, PHC improves the health and well-being of the overall population, thereby preserving and optimizing finances for health coverage. Fintech in Primary Healthcare focuses on the first three important components of the financial journey of a patient, including prevention and wellness, screening and early detection, and primary care. Fintech for Primary Healthcare can play a crucial role in solving the supply and demand side of issues arising across the entire ecosystem. Fintech would be instrumental in supporting PHC through improved foundations for universal health coverage, strengthened referral linkages, better community outreach and frontline service delivery, integration of health services, outbreak detection and response, chronic disease management, and well-being.

Fintech in Primary Healthcare combines the nuances and specific knowledge from the PHC models and the fintech landscape in the five geographies – India, Sri Lanka, Bangladesh, Vietnam, and Indonesia. This knowledge is captured and analyzed to create solutions customized to each geography. These geographies were carefully selected to represent varying models of PHC, demographics and their behaviors, and subsequent ecosystems for digital health, fintech, and industry in this report.

## PURPOSE

The report aims to provide the background and required guidance for the application of fintech in primary healthcare for health systems in each of the select geographies and beyond. The report has been developed for governments, regulators, health providers, fintech and health tech companies, development partners, and investors.

## CONTENT OVERVIEW

**The first part** of the report includes background of the included concepts and the overall report. The background provides a walkthrough of the core concepts and their interplay, including primary healthcare, financing technologies (Fintech), universal health coverage, and financial resilience as part of the health and digital ecosystem. This report segment showcases and defines the need for fintech and primary healthcare to achieve better health outcomes by making health more accessible and affordable.

**The second part** of the report provides an introduction to the report with a comprehensive walkthrough of the Fintech for Primary Healthcare frame. The framework defines, explains, and connects each of the pillars of primary healthcare, intervention areas, stakeholders involved, digital enablers, financial channels, and digital financial services. This part further contextualizes the role of primary healthcare and fintech to ensure the financial resilience of health systems and how it can protect them from shocks such as COVID-19.

**The third part** of the report includes the barriers and enablers for fintech in PHC. These barriers are segregated across areas of the health system and provide a detailed breakdown of the challenges in developing a robust primary healthcare system that seamlessly adapts fintech solutions. This segment of the report documents five enablers that give details on various factors that help create and scale opportunities for fintech in primary healthcare. The enablers are characterized by graphs that define and compare some of these factors along with cases of each of the five countries that contextualize the enabling factors.

**The fourth part** of the report defines and elaborates on the opportunities geographically. This segment is characterized by a comparative index developed using different scores created through the use of select indicators across all the countries. The next segment in this part includes a comprehensive matrix of opportunities and challenges in the form of specific solutions and barriers for each country for respective intervention areas defined for the framework.

**The fifth part** of the report includes country profiles and personas. The country profile includes the country demographic, the primary healthcare model segregated across the devised pillars, and the country's fintech landscape. The personas are a representative infographic of a sample solution for each country derived from the study of health systems, PHC, and fintech.

**The sixth part** lists limitations and considerations and concludes the report. The report aims to be the starting point for stakeholders to build fintech solutions for PHC and beyond. This part provides some guidance on the considerations that need to be made while building fintech solutions for health systems. The report also provides a comprehensive approach to build pilots to help innovate and test fintech-enabled health service delivery solutions. The report concludes with a brief way forward for each of the five defined stakeholders to help in the adoption of fintech solutions to strengthen and improve the primary healthcare ecosystem.

# Background

## PRIMARY HEALTHCARE

Primary healthcare (PHC) is essential and affordable care that is accessible to everyone in the community and includes health promotion, disease prevention, health maintenance, education, and rehabilitation. The World Health Organization (WHO) has repeatedly reinforced the importance of primary healthcare, starting with the 1978 Declaration of Alma-Ata and further elucidated in resolutions of the World Health Assembly. In countries with strong PHC and those adhering to the Alma-Ata Declaration, PHC is the first point of contact that people have with the healthcare system. International evidence confirms that a strong PHC sector is associated with greater equity and access to basic healthcare, higher patient satisfaction, fewer unnecessary hospital admissions, and lower aggregate healthcare expenditure for the same or better outcomes.[3] The role of PHC as the first point of contact for populations, a hub for community engagement, and the first level of the referral unit determines an effective collaboration among multiple healthcare stakeholders and is necessary for integrated care models.[4] These stakeholders are government purchasers, clinics, the private sector, and the patient population. Through improved disease surveillance and diagnostics, primary care interactions can potentially affect supply chain planning and determine or influence demand for care at secondary and tertiary facilities.

This implies that a primary care approach will also address underlying social and environmental determinants of poor health, including safeguards to ensure access to water, sanitation, nutrition, and education.[5] Improved PHC planning can help various stakeholders plan and support complex health system interventions. Cross-sectoral insights and lessons from different sectors, settings, and systems, such as education, urban planning, epidemiology, and economics, among others, are needed to garner strategic information to fill the knowledge gap on PHC systems at national and subnational levels in low and middle-income countries. Improved PHC planning also provides insights on the entry points into healthcare systems to improve the implementation, effectiveness, and efficiency of health programs. Strengthening PHC is a cost-effective strategy to improve a population's health status, especially in low and middle-income countries.[6] Further, the changing landscape of care provides opportunities and demand for extending care beyond just the traditional curative service provision of the health system to preventive provision and holistic care. However, this change requires integration on a technical and cultural level as part of people's care-seeking behavior. Integration of primary care services with public health will lower overall health expenditure over time and will lead to healthier populations.[7] This integration paves the way for resilient and socioeconomically viable communities, which increases the resources available to invest in future-oriented services such as healthcare for all or popularly known as Universal Health Coverage (UHC) or Sustainable Development Goal 3.

Out-of-Pocket expenditure (OOPE) is the total amount of money spent on medical expenses such as consultation, medicines, and investigations, and non-medical expenses such as transport for an episode of illness. The Organization for Economic Co-operation and Development (OECD) has shown that countries with a greater reliance on out-of-pocket healthcare expenditures also have a higher proportion of households experiencing catastrophic health expenditures, defined as spending more than 10% of household income on healthcare.

[3] *https://improvingphc.org/sites/default/files/JLN-GIZ_Case_Studies_on_Payment_Innovation_for_Primary_Health_Care__0.pdf*

[4] *https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7244358/*

[5] *https://apps.who.int/iris/handle/10665/43949*

[6] *https://www.euro.who.int/__data/assets/pdf_file/0005/371435/multisectoral-report-h1720-eng.pdf*

[7] *https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7607465/*

UHC is an important current global health policy initiative. The concept of UHC, as noted in the United Nations' 2015 Sustainable Development Goals, is an aspiration to provide all people with access to essential high-quality health services and safe, effective, and affordable medicines and vaccines while ensuring financial risk protection by providing care regardless of a person's ability to pay for it. At the United Nations General Assembly in September 2019, all countries endorsed the Political Declaration on Universal Health Coverage, affirming that "health is a precondition for and an outcome and indicator of the social, economic and environmental dimensions of sustainable development and the implementation of the 2030 Agenda for Sustainable Development." With the Astana Declaration, there was renewed attention to PHC as the cornerstone of UHC. Initiatives such as the Primary Healthcare Improvement Initiative[8] were formed to create better data collection and measurement for PHC progress. COVID-19 veered this attention to responding to the pandemic, but we learned through the pandemic that PHC is vital to epidemic responses. Strong PHC systems can respond to outbreaks such as COVID-19 better by flattening the curve faster through surveillance, contact tracing, community outreach, etc.[9]

Moving to a primary healthcare model typically calls for a reorientation along the following priorities:[10]

- Addressing social determinants of health, and thus taking the view that is broader than a classical biomedical approach;
- Ensuring equity in systems that have traditionally relied on the private sector and on out-of-pocket payments;
- Building community engagement and ownership as a central feature of a primary health framework; and
- Ensuring a stronger role for disease prevention linked to existing vertical programs and a role for certain curative services that are traditionally not included in the ambit of primary care.[11]

## FINTECH IN HEALTHCARE - ASIA

Healthcare costs are high, mostly paid out of pocket, entail high transaction costs, are unpredictable, and rarely linked to health outcomes. These issues prohibit the lower and lower-middle populations from accessing the right care, at the right time, and at the right place. Healthcare costs borne by a patient impact both the financial health of the patient and their family while or after seeking care. The World Health Organization proposes that health expenditure should be called catastrophic whenever it is greater than or equal to 40% of the capacity to pay. Catastrophic health expenditure usually results in the payer being pushed below their current income level due to lack of capacity to pay.

Fintech or financial technology is a bouquet of ever-evolving services and products which leverage digital technology via abundantly available channels such as mobile phones or the internet to make financial services accessible, affordable, and available for all segments of society, including governments, private entities, the employed, entrepreneurs, but most importantly, for the underserved and usually unbanked populations. Fintech can undertake these by maximizing economies of scale, increasing the speed, security, and transparency of transactions through artificial intelligence and machine learning, and ultimately allowing for more tailored financial services that serve the poor.[12] Fintech for Health program's role in creating cross-sectoral and multi-stakeholder partnerships between stakeholders from fintech and healthcare has supported the development of initiatives such as rapid AI-processed zero-interest microloans from Arogya Finance that

[8] *https://improvingphc.org/*

[9] *https://www.worldbank.org/en/news/press-release/2021/06/28/well-designed-primary-health-care-can-help-flatten-the-curve-during-health-crises-like-covid-19*

[10] *https://pubmed.ncbi.nlm.nih.gov/24066415/*

[11] *Perry H B. 2013. "Primary Healthcare: A Redefinition, History, Trends, Controversies and Challenges." White paper, Unpublished.*

[12] *https://pubdocs.worldbank.org/en/230281588169110691/Digital-Financial-Services.pdf*

facilitated cashless payments for medical care. Such partnerships embody the efforts required to propel fintech into the health ecosystem and beyond, ultimately impacting more poor and underprivileged segments of society. These segments of society are often financially excluded from accessing the full suite of financial services. Financial inclusion and UHC policies are both designed for the same bottom-of-the-pyramid, low and emerging middle-income populations. People who lack access to formal banking services also lack access to and cannot afford high-quality healthcare. Healthcare financing challenges can be addressed by converging the goals and approaches of financial inclusion and UHC.[13]

In most countries around the world, the COVID-19 pandemic accelerated the pace of digital transformation. Specifically, telemedicine minimized the need for physical interaction for service delivery, especially primary care, between consumers and providers. Innovations like telemedicine created a larger need and scope for accessible financial services during COVID-19. Continuous delivery of welfare to the lower income segments was critical to support those who were losing out on their health and livelihoods and were required to pay out of pocket for their needs, such as oxygen and medicines. This resulted in an increased need for contactless financial products and services, accelerating the shift to digital finance in many economies. Governments used digital payments to reach vulnerable citizens, and customers increasingly used phones and cards to pay merchants. Measures also included regulations to support the adoption of digital financial services during COVID-19.

[13] *https://fintechforhealth.sg/wp-content/uploads/2021/04/Fintech-for-Health_Breaking-the-health-poverty-trap-How-fintech-can-improve-access-to-healthcare-in-Asia.pdf*

# Introduction

Fintech for Health encompasses technologies that make financial services accessible and affordable for the entire value chain of the health system and, specifically, prevent individuals and families from facing catastrophic health expenditure and assist them along the whole value chain in saving, insuring, lending, paying, and investing financial resources for health services.

## FINTECH FOR PRIMARY HEALTHCARE FRAMEWORK

The report's framework from primary healthcare is centered on the four key pillars in a health system: ***service delivery, financing, community engagement, and governance***. These pillars are closely interconnected and dynamic, each deserving equal attention for a primary care system to function optimally.

1. **Service delivery** is expansive and includes a) the scope of services that fall under primary healthcare, b) who in the workforce delivers these services – their qualifications and the sector in which they belong (public or private), c) the quality of health services rendered, and d) how technology plays a role in delivery.

2. **Financing** or healthcare refers to the resources that support a health system intending to provide all people with access to needed services of sufficient quality and ensure that the use of services does not cause financial hardship to the user. Finances are sourced from tax revenues and transfers, as well as from private sources (consumers, blended finance, financial institute payments, and employers).

3. **Community engagement** must derive from local needs, continually involve the community, and be adapted to particular health and social priorities.[14] Community-based interventions are also critical to changing perceptions and health-seeking behavior in the community. These interventions are effective when integrated with a broad mix of health and development services.[15]

4. **Governance** is recognized as a core function of a health system and a determinant of its effectiveness and performance. In broad terms, health system governance comprises the "actions and means adopted by a society to organize itself in the promotion and protection of the health of its population."[16]

The framework has been further developed on the foundations of certain concepts that make up Fintech for Health's pillars. These pillars can together define the public health initiatives and projects leveraging fintech. It can also be applied vice versa, where fintech and financial inclusion initiatives can use these pillars to provide a public health approach to the initiatives.

**Health Information** is the initial building block for any digital health intervention. It encompasses the capture, analysis, movement, and tracking of information and data related to health. Health information can inform, communicate, and also evaluate the financing needs and delivery of services and products.

[14] *https://pubmed.ncbi.nlm.nih.gov/24066415/*

[15] *Perry H B. 2013. "Primary Healthcare: A Redefinition, History, Trends, Controversies and Challenges." White paper, Unpublished.*

[16] *http://apps.who.int/iris/bitstream/handle/10665/68934/a85727_eng.pdf?sequence=1*

**Health Financing** is the critical core of these pillars, as affordability and accessibility of health services and products are entirely contingent upon the availability and quality of financing. Health financing plays a crucial role in the design of PHC initiatives and projects while also playing a central role in the efforts toward UHC.

**Health Services** are defined as the products and services delivered to the beneficiaries through the stakeholders involved. In this pillar, the implementation and delivery of services to achieve certain key performance indicators (KPIs) from public health and a profit-making lens are explored.

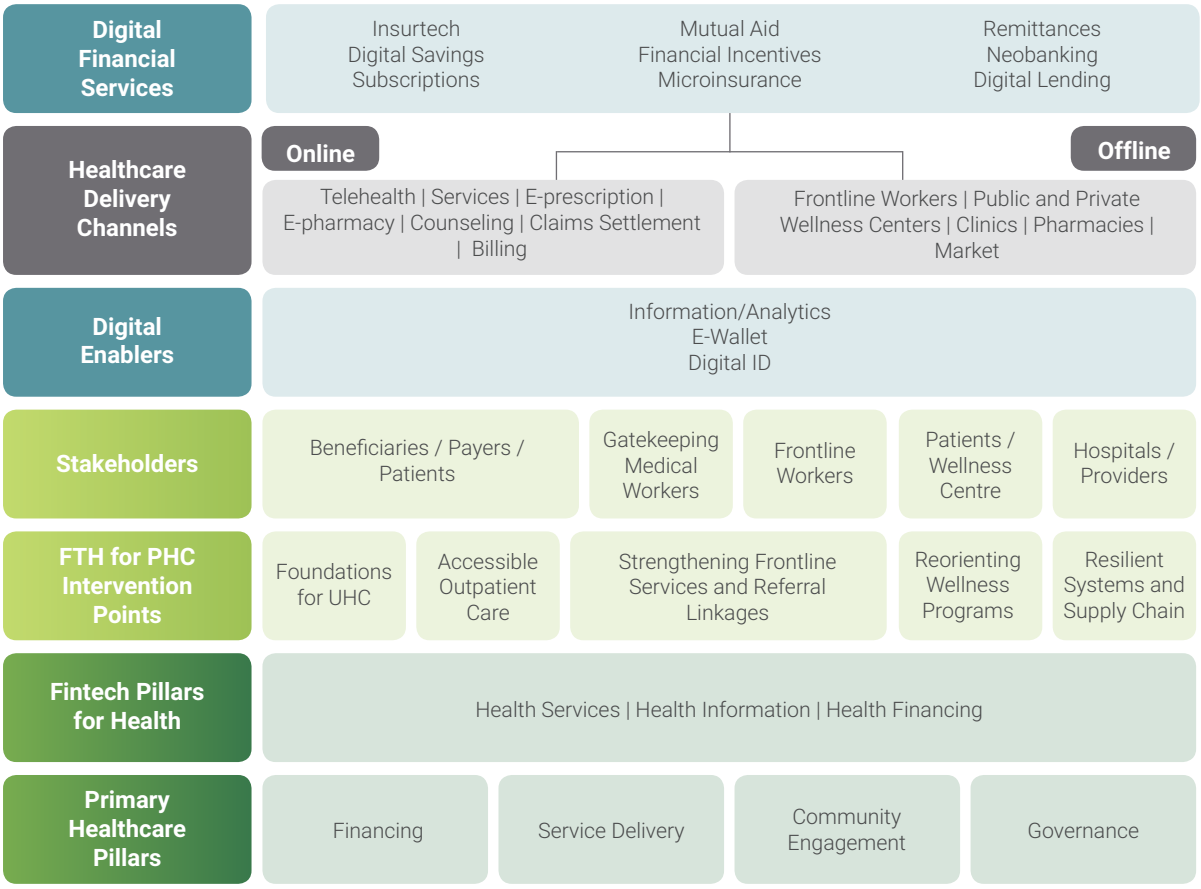
Affordable and accessible delivery of health services is made possible through transparent and direct health information channels along with robust and reliable health financing initiatives.

The framework defines intervention areas for the application of fintech into primary healthcare initiatives. Naturally, these intervention areas have been derived from the primary healthcare pillars and Fintech for Health pillars. Details of the intervention areas are below:

| Intervention Area | Description |
|---|---|
| Foundations for Universal Health Coverage | Utilization of financial tools and services for healthcare to advance both access and protection from financial hardship |
| Accessible Outpatient Care | Affordable, available, and accessible drugs, diagnostics, and primary consultations for all through financing tools |
| Frontline Service Delivery and Referral Linkages Strengthening | Use of financing tools and digital solutions to enable effective gate-keeping and include primary care services in the frontline service packages |
| Reorienting Wellness Programs | Improve health-seeking behavior using financing tools to incentivize and reward the users |
| Resilient Systems and Supply Chains | holistic approach to strengthen the entire health system value chain, including resources and equipment with financing tools |

The framework segregates the stakeholders for the respective intervention areas to showcase the implementation of fintech solutions across the primary healthcare ecosystem from health financing covered by foundations for UHC and accessible outpatient care, service delivery and community engagement being covered by frontline service delivery, referral expansion, and wellness program reorientation, and finally, resilience systems and supply chains being defined through governance. The framework comprises digital enablers, including information, e-wallets, and digital ID, which are crucial to enable the exchange of information and transactions between stakeholders. The healthcare delivery channels are segregated between offline and online channels, which comprise available avenues to deliver health services. Finally, for each delivery channel, a digital financial service from the defined list of services can be used to make health more affordable and accessible.

## Framework

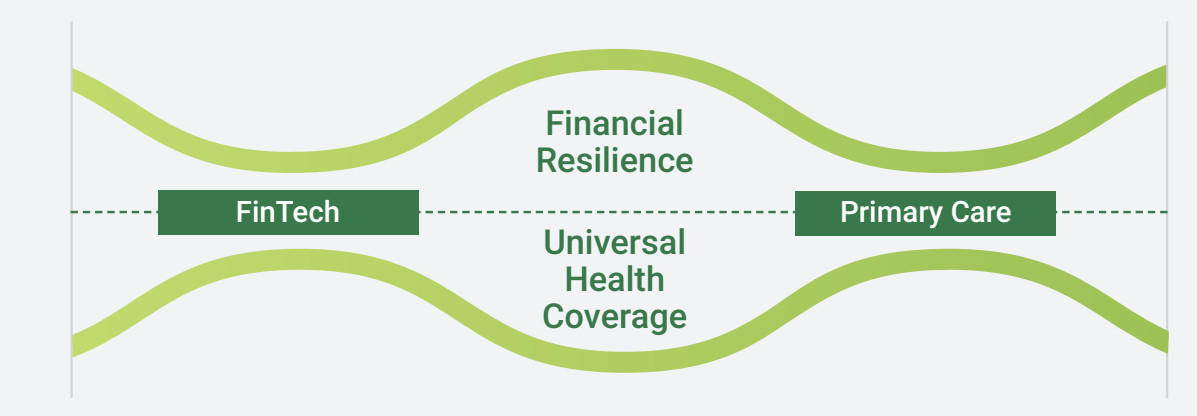



## EXAMPLES / USE CASES OF FINTECH IN PRIMARY HEALTHCARE

| | | |
|---|---|---|
| Subscription-based primary care packages (e.g., oDoc in Sri Lanka and Sevamob in India) | Microinsurance and insurtech solutions for outpatient care (e.g. BRAC in Bangladesh) | Financial rewards and incentives for wellness programs (e.g. WiCare in Vietnam) |
| Digital savings for patients with chronic illness and noncommunicable diseases (e.g. Fedo in India) | Mutual aid for long-term diseases and geriatric care (e.g. Mutual Aid Funds in Vietnam) | Health wallets and seamless payment methods at the primary care level (e.g., Halodoc in Indonesia and milvik BIMA in Bangladesh) |
| Digital lending solutions for the primary health system value chain (e.g., Arogya Finance, Digisparsh, and Navia Life Care in India) | Top up/Add-on inpatient (IPD) and outpatient (OPD) coverage on existing social health cover. (e.g. Pasarpolis in Indonesia) | Financial incentive delivery mechanisms through digital payments and wallets (e.g., e-RUPI in India) |

## ROAD TO UNIVERSAL HEALTH COVERAGE AND RESILIENCE: FINTECH AND PRIMARY HEALTHCARE

UHC and financial resilience for the health system are connected concepts that can be achieved through a strengthened primary healthcare system and a fintech enabled-ecosystem. Financial resilience is crucial for the health system to stay strong, robust, and functional through shocks such as COVID-19 or similar. Lack of financial resilience threatens the health system and subsequent delivery of health services at all levels. UHC plays an instrumental role in achieving financial resilience as it protects health services for individuals and families. Furthermore, ensuring strong financial mechanisms through fintech and robust primary healthcare that delivers services to the grassroots and communities at low expenditure will protect the financial resources and ensure quality services.




### Role of Primary Healthcare

Universal health coverage is expected to increase the use of health care facilities by members of lower socioeconomic groups. This might be expected to increase health care expenditure in the short to medium term, given that people with high unmet health needs will begin to access care.[17] Strong primary health care will improve population health through integrating primary care services with public health, thus lowering overall health care expenditure over time, improving the health care system's performance, and ensuring improved equity and access for everyone.[18] The enhanced efficiency and cost-effectiveness of care are found in enduring and substantial savings in other parts of health care provision. This result is expected in all countries but is particularly important in low and middle-income countries with limited resources and economic constraints. In seeking to attain universal health coverage, the development of sustainable primary health care should continue to be the health policy priority of every nation.[19]

### Role of Fintech for Health

Fintech is being explored and tested in a range of areas, including as an innovative route for securing access to health care finance. According to the World Health Organization, nearly 100 million people have been driven to poverty because of the costs of meeting health care expenses.[20] Digital financial

[17] *De Maeseneer J, Willems S, De Sutter A, et al. Primary health care as a strategy for achieving equitable care: a literature review commissioned by the Health systems Knowledge Network. Geneva: World Health Organization; 2007. www.who.int/social_determinants/resources/csdh_media/primary_health_care_2007_en.pdf?ua=1*

[18] *Art B, De Roo L, De Maeseneer J. Towards unity for health utilising community-oriented primary care in education and practice. Educ Health (Abingdon) 2007;20:74.*

[19] *The World Health Report 2008 — primary health care (now more than ever). Geneva: World Health Organization; 2008. Available: www.who.int/whr/2008/en/*

[20] *https://www.who.int/news/item/13-12-2017-world-bank-and-who-half-the-world-lacks-access-to-essential-health-services-100-million-still-pushed-into-extreme-poverty-because-of-health-expenses*

services can simplify and reduce insurance coverage costs for large portions of people previously uncovered. Digitization substantially reduces the cost-to-serve, which makes healthcare protection more accessible and affordable for customers. It provides the potential to expedite payment processes and reduce complex transaction costs. Fintech is thus being considered a means of broadening financial access to meet the health care needs of underserved communities. This potential may be particularly pertinent for low-income countries where smartphone ownership is increasing, but out-of-pocket spending for health care is high, bank account ownership is not a given, and attaining good credit scores may be a challenge for many. In high-income countries where health insurance coverage may be fragmented or inaccessible or where public health care systems fail to meet demand, fintech may also be a promising intervention to bridge accessibility gaps. Digital conversion of conventional approaches such as microinsurance and insurance provides an innovative way of potentially increasing the scale, reach, and sustainability of access to health care funds.[21]

## Financial Resilience in Health Systems

Financial resilience of health systems relates to the capacity of a health system to absorb a financial shock–that is, any disruption originating outside the health system that suddenly and significantly affects the revenue generation capacity of the health system's financing streams–without negative repercussions on volume, quality, and accessibility of needed health care. In Europe, health system resilience frameworks have seen an increasing inclusion of financial resilience in the primary healthcare context through various methods. It was reported in a study that eight (61%) European countries included outpatient and primary care as part of their health systems' resilience assessments.[22]

Asian Development Bank's research further showcases how financial inclusion can build resilience through support at the individual and institutional levels. Resilience can be built when the individuals utilize financial services to make productive investments in the risk scenario, investments in risk-mitigating activities such as the use of credit or savings for preventative health measures by households, and the use of financial services to facilitate preparedness and formulate a response for shocks, such as building a savings cushion, reducing transaction costs, and expanding a network that can help when a shock occurs.[23]

Primary healthcare would further strengthen the health workforce, disease surveillance at the basic level, frontline service delivery, gatekeeping and referral systems, and supply chains. The World Health Organization's health resilience framework for universal health coverage and health security identifies the health workforce, supply chains, and disease surveillance as critical areas to build resilience for UHC. Further, improvements in the gatekeeping mechanism and expansion of frontline service delivery would make care accessible for critical and acute patients as well as primary care seekers. The inclusion of fintech and digital innovations in the health systems would help solve issues related to minimal or ineffective use of systems arising from low demand and the supply side issues which arise due to lack of capital, funding, or resources.

[21] *https://www.rand.org/blog/2021/07/fintechs-role-in-reducing-disparities-and-financial.html*

[22] *https://health.ec.europa.eu/system/files/2021-10/2020_resilience_en_0.pdf*

[23] *https://www.adb.org/sites/default/files/publication/574821/adbi-wp1098.pdf*

# Barriers and Enablers to Fintech in Primary Healthcare

## CHALLENGES TO IMPLEMENT PRIMARY HEALTHCARE

**40%**
Health expenditure is Out-of-pocket costs in SEA*

**60%-80%**
Population uses private sector for outpatient visits in the SEA**

**5.4%**
Economic contraction in 2020 across the South East Asia#

High OOP expenditure results from visits to private sector facilities due to **weak tiered system** and low health coverage for people due to **government's low contribution** to PHC

- Lacks sufficient resourcing for **publicly-funded frontline services** in absolute terms and in comparison to hospital sector
- Rural areas suffer from lack of access to primary healthcare services in **remote regions** due to lack of **qualified human resources** and facilities
- Urban areas suffer from **multiplicity** of service providers and **lack of tiered system** which leads to dependency on private tertiary facilities
- World Bank's estimate of **60%** of 119-124 mil in South Asia. being pushed into **extreme poverty** would result in financial hardships from **high OOP**

*WHO South East Asia Regional Strategy 2022-30
**Financing health care in the WHO South-East Asia Region: time for a reset
# Updated estimates of the impact of COVID-19 on global poverty. Data Blog, 11 January 2021. World Bank

### A Health System

- Rising tide of noncommunicable diseases and chronic illnesses put considerable pressure on the health systems.
- Unavailability of medicines, reagents, and equipment in public facilities to provide end-to-end primary care service to the patients.
- Recruitment and incentivization of community health workers and frontline workers to include primary care services in service delivery.
- Improper distribution of private hospitals and clinics with a high concentration in cities and a less or nominal presence in remote areas.

### B Referral Linkages

- Lack of gatekeeping mechanisms between the preventive and curative care services of the health system.
- Missing coordination for referrals due to reliance on self-referral and communication gaps.

### C Public and Private Health Coverage

- Outpatient care, such as medicines, pharmacy, and diagnostics, are not covered by social health insurance programs in countries with available social health insurance.
- Social health insurance schemes offer limited coverage, inadequate benefits, and have targeting errors, weak administration, and regulation.

### D Infrastructure and Data

- Unavailability of information on patient care provided by private and public facilities and doctors.
- Missing utilization of data and insights to manage and plan health service delivery.

## CHALLENGES TO IMPLEMENT FINTECH

### A Uptake and adoption of digital and fintech innovations

- Lack of exposure to innovative financing tools and minimal utilization of the same in the health ecosystem vis-a-vis development partners, government, and investors.
- Low usage of smartphones and devices for healthcare-related activities such as financial management, literacy, and awareness.

### B Infrastructure to adopt digital systems

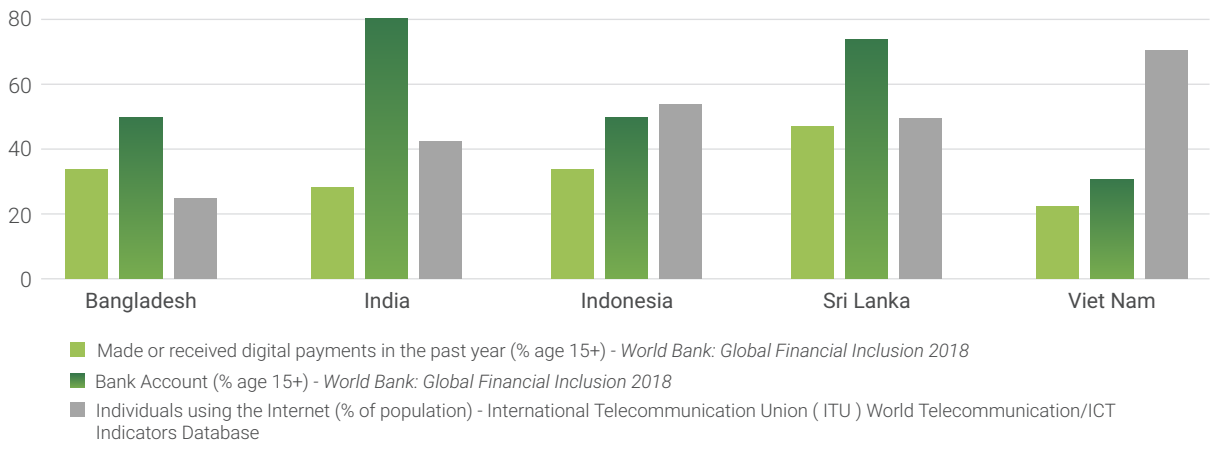
- Low adoption of electronic health records and use of latest technology such as Artificial Intelligence in the health ecosystem.
- Minimal utilization of existing digital systems in public health systems and lack of integration between the private and public health system information systems.
- Lack of conceptualization, planning, and coordination for the country's digital and financial integration of health systems.

### C Scale up of fintech and digital innovations in health

- Low trust and confidence between the private and public sectors to design and implement financing and digital tools for wide-scale usage.
- Widespread and tough regulatory barriers and conditions for the private sector to work with the government.
- Missing political will to drive the adoption of fintech and digital health in scaling health initiatives – private and public.

## ENABLERS FOR FINTECH IN PRIMARY HEALTHCARE

### A Accessible digital financial services (DFS)

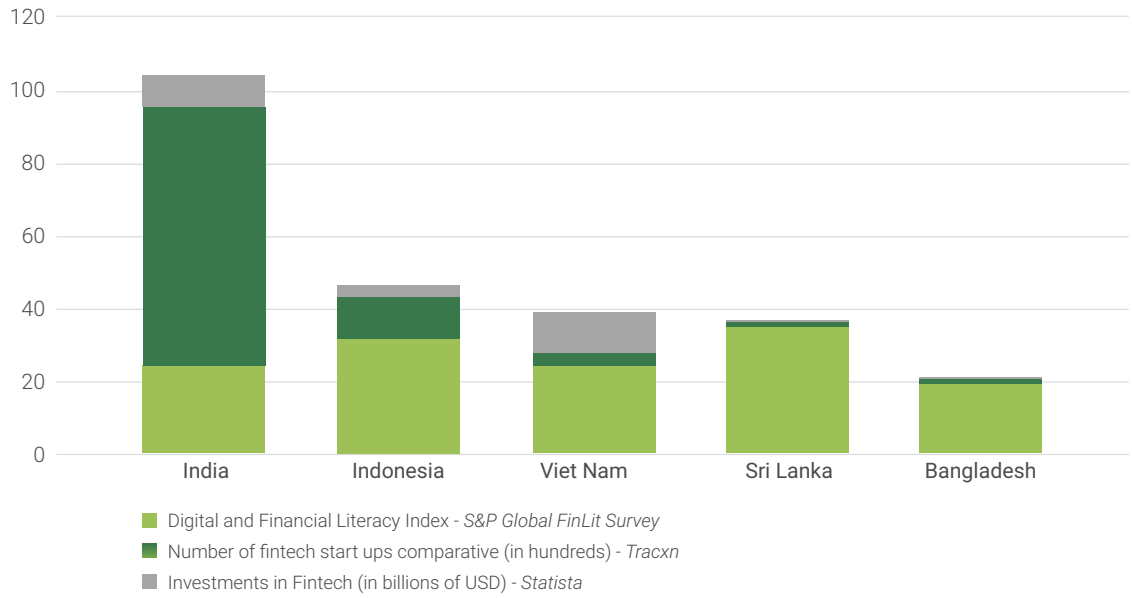


Low financial inclusion through formal institutions in the region is one of the foremost factors that resonates with the imperative need for fintech. *The data from the World Bank also showcases the rapid rise in digital payments, with an aggregate of more than 20% of people aged 15+ undertaking digital payments in just the last year, while the total number of bank accounts in the region average at around 45%.* Further, the number of internet users across the region provides an opportunity for higher financial inclusion through DFS. More than half (54%) of adults in the poorest 40% of households remain unbanked. Access to credit from formal channels and the use of insurance solutions are significantly low. Only 18% of adults use a bank account to receive wages and pay utility bills, just 27% of adults save formally, and 11% borrow formally. Significant imbalances in financial inclusion exist within markets as well. Differences exist between regions, between urban and rural areas, and between men and women: Global data shows that only 58% of women have an account, compared to 65% of men.[24] Digital financial services (DFS) have the potential to greatly impact financial inclusion, as already evidenced by progress in some African markets.



In Bangladesh, most bank users are in metropolitan areas, and the overall banking service penetration remains low. As per World Bank's Global Findex database, access to bank accounts remains within 50% of the population, and only 9.1% of the population borrows from the formal sector. The state of savings product penetration is in a similar state. However, this is different for mobile phones and DFS adoption. The Bangladesh Telecommunication Regulatory Commission (BTRC) data suggests the country has 126 million active internet subscriptions, of which 92% come from mobile users. DFS has seen excellent penetration –with approximately 60% of the adult population having active DFS accounts. However, DFS usage remains limited to certain patterns. For instance, as of 2021, 95% of all MFS transaction value is in cash-in, cash-out, or P2P payments, whereas only 5% are other usages such as merchant payments, salary, utility bills, government disbursements, etc. While traditional financial institutions don't have this level of penetration, most DFS users don't have access to financial products like savings, credits, etc. The collaboration between financial institutions and DFS players can change this scenario and extend financial inclusion to the population who live outside of traditional banking services.[25]

## B Adaptability to Fintech Ecosystem




[24] *http://datatopics.worldbank.org/financialinclusion/indv-characteristics/gender*

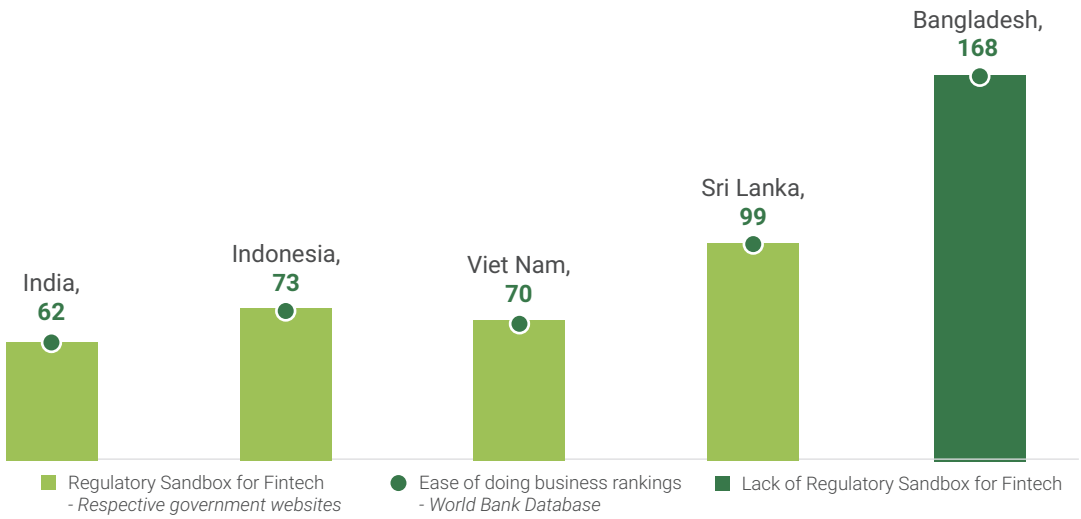
[25] *https://futurestartup.com/2022/04/20/bangladesh-emerges-as-a-unique-digital-financial-services-market/*

Financial service companies, fintech startups, and governments create the ecosystem. Each of these actors is committed to driving innovation, improving the economy, and encouraging collaboration within the financial sector. To establish and nurture a fintech ecosystem, there is a need for sustained collaboration among the government, entrepreneurs, and financial institutions. Fundamental elements that enable a fintech ecosystem to flourish include talent, demand, capital and policy regulation. For the fintech ecosystem to succeed, it is essential that talent be developed, attracted, and retained in key domains such as finance, technology, and entrepreneurship. The ecosystem is dependent on access to capital, whether that comes from the government, corporations, private investors or development partners. For greater fintech activity, it is important to have higher venture capital investments and higher values. Investment is required to finance initiatives like sandboxes and non-profit accelerators that foster collaboration within the fintech ecosystem. Demand generation for fintech through cross-industry collaboration where fintech is a catalyst for various industries is crucial for the growth of the fintech ecosystem. Demand for fintech would be further spurred by a catalytic role played by fintech applications. This will help other enterprises and businesses, including social enterprises, clinics, and hospitals, deliver affordable and accessible services. Furthermore, the ecosystem growth of digital technologies and fintech will need to be complemented with increasing financial and digital literacy, which will, in turn, improve the demand and application for fintech. Finally, regulators and governments need to strike a balance between innovation and effective competition through effective frameworks and regulations.[26]



According to a recent study titled "ASEAN FinTech Census 2018" by Ernst & Young (EY), Vietnam currently ranks second amongst ASEAN member states in the number of incubators, accelerators, and innovation labs in the region. 89% of firms believe users are keen on adopting fintech services, while 87% plan to expand beyond their current markets in the next 12 months. Vietnam's fintech industry is rapidly growing, especially in the amount of investment and the number of new firms, which grew by 170% between 2017 and 2020. In recent years, the country has recorded a significant increase in transaction values from e-wallets and mobile banking, which has yet to show signs of slowing down. Meanwhile, alternative lending is another attractive category for investors due to its strong growth potential, considering Vietnam's young and connected population. Having realized fintech's potential for financial inclusion, the government has been actively supporting its growth. The State Bank of Vietnam has been accelerating the development of the first regulatory sandbox for fintech since 2021.[27]

## C Regulation, market access, and government endorsement for fintech




[26] *https://www.linkedin.com/pulse/fundamental-components-successful-fintech-ecosystem-daniel-abbott/?trk=public_post*

[27] *https://www.vietnam-briefing.com/news/growing-market-potential-of-fintech-in-vietnam.html/*

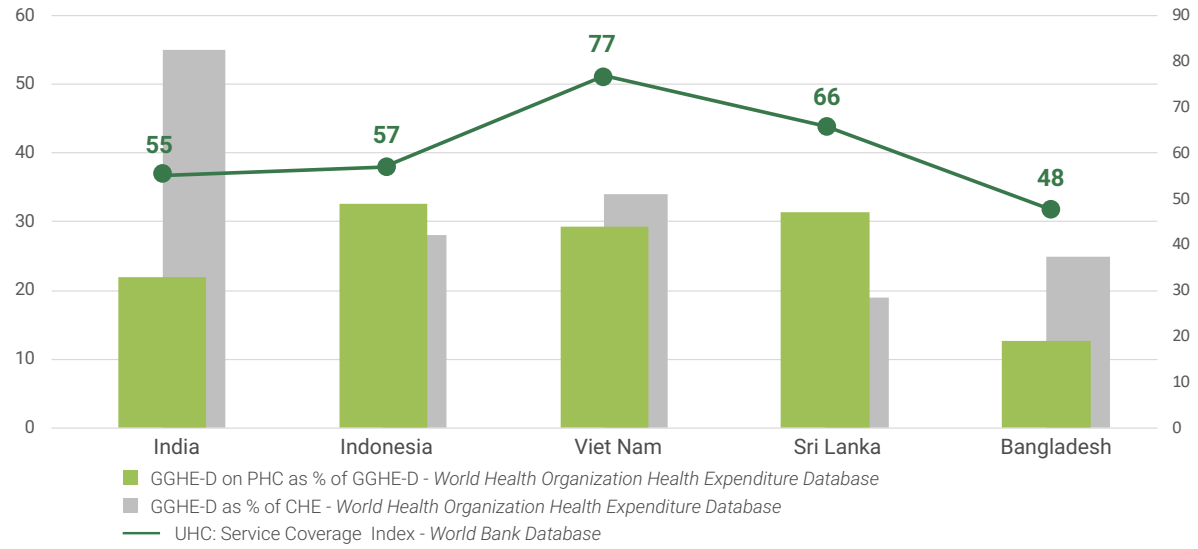
After the global economic crisis of 2008, governments and regulatory agencies further developed regulations, prioritizing transparency in an attempt to reduce fraudulent behavior and protect consumers.[28] At the same time, some countries started initiatives that promoted the emergence of fintech. Asian countries have taken a leap forward through the development of market-enabling regulations and public policies for the fintech industry. Countries have been able to resolve the demand and supply-side constraints acting as entry barriers for the fintech industry. Regulators play a key role in maintaining parity across all the players in the fintech industry – both big and small. Regulators have been able to collaboratively work with the ecosystem through sandboxes. These also help the regulators receive the innovator and industry perspectives, which can create avenues for improved business efficiency. Demand-side constraints such as financial and digital literacy, KYC procedures, cost, and quality of digital tools have been improved by regulators in various countries through different methods and practices.



The Bank of Indonesia's e-money regulations in 2009, a DFS pilot project in 2013, and regulations for branchless banks introduced by the Financial Services Authority (OJK) in 2014 have helped pave the way for an improved ecosystem. This also helped them target financially excluded individuals and families, especially from the rural sector.[29] This also led to the promotion of startups. As a result, the Indonesia Fintech Association (AFTECH), one of the fintech associations in Indonesia, reported that 362 fintech startup companies had joined the association by the end of Q2-2020.[30]

Indonesia's microinsurance has also undergone tremendous progress, and demand for microinsurance was showcased in a report through a partnership with GTZ-supported health project (SISKES) and PLAN International/Indonesia. Preventive care and close contact with primary healthcare services usually enhance the health status of members and subsequently contribute to reducing premiums for health microinsurance. It is suggested that simpler microinsurance products be developed first, in collaboration with the banking sector. In the meantime, preparatory work for the more complex health benefits package can be initiated.[31]

**D** **Strong Primary Healthcare Systems and Health Coverage Mechanisms**




[28] *Alt, R., R. Beck, and M.T. Smits, FinTech and the transformation of the financial industry. Electronic Markets, 2018. 28(3): p. 235-243.*

[29] *https://www.adb.org/sites/default/files/publication/222061/financial-inclusion-se-asia.pdf*

[30] *Batunanggar, Sukarela. 2019. "Fintech Development and Regulatory Frameworks in Indonesia." ADBI Working Paper 1014. Tokyo: Asian Development Bank Institute. https://www.adb.org/publications/fintech-development-regulatoryframeworks-indonesia.*

[31] *MICROINSURANCE INDONESIA http://content-ext.undp.org › aplaws_publications*
**World Health Organization Health Expenditure Database*
***Bangladesh GGHE-D on PHC per capita - Essential Services Package defined by USAID*

UHC service coverage index provides an important measure of the reach of health coverage among people. Primary healthcare and health coverage mechanisms are capacitated through government intervention for the lower and lower-middle-income segments. The government's expenditure on the health system coupled with a proportional expenditure on primary healthcare can play an instrumental role in the progress of primary healthcare. Primary healthcare systems with expansive service coverage, a robust referral system, and emerging social health insurance can encourage the use of fintech among consumers. Using digital savings, digital lending, and insurtech to seamlessly pay for uncovered outpatient care, specific disease-related treatments such as cancers and rare diseases, and avoid compromising on care or financial catastrophe due to health. Further, primary healthcare systems based on a foundation of well-being can be strengthened through innovative fintech and digital health solutions. This would help keep the population healthier, reducing health risks and subsequently reducing payouts for insurance and insurtech solutions.



Sri Lanka has outperformed many other countries in the World Health Organization (WHO) Asian Region in health outcomes, including life expectancy, disease-free status for malaria, polio, neonatal tetanus and measles, under-5, and maternal mortality.[32] Sri Lanka's primary care system is characterized by a potent frontline service delivery system through Primary Medical Care Units and community-based workers, adoption and availability of generic medicines, the inclusion of wellness programs through Health and Lifestyle Centers, and a booming private sector providing curative services for primary care.[33] Sri Lanka plans to establish a PHC "shared cluster system," which would reorganize the system into geographical catchments or panels with a specialist institution to support a comprehensive care package to address NCD management, geriatric care, and palliative care, as well as curative, preventive and promotive care, with a strong patient-centered focus.[34]

## E Digitally Interoperable Health Ecosystem

Improving the accessibility, affordability, and quality of healthcare is at the heart of primary healthcare. Digital technologies, like self-care technologies such as wearable devices, information and citizen-centric applications such as apps for tracking the delivery of health services and their quality, data collection, visualization, and information management systems such as COWIN dashboard and platforms[35] for COVID-19 and now adult immunization, among others, have become essential resources in primary care. Their uptake is growing, with the past decade seeing rapid integration of technology in a range of areas that support primary care and essential public health functions. In Asia, specifically India, the vertical health programs implemented by government and development partners are siloed, and their lack of interoperability and standardization has limited their sustainability; hence with the comprehensive primary healthcare programs and growing digital health, the priorities have now started to change in the country and region by large.

[32] *Thresia CU. Rising Private Sector and Falling "Good Health at Low Cost": Health Challenges in China, Sri Lanka, and Indian State of Kerala. Int J Heal Serv. 2013;43(1):31–48.*

[33] *Senanayake S, Senanayake B, Ranasinghe T, Hewageegana NSR. How to strengthen primary health care services in Sri Lanka to meet the future challenges. 2017;23(1):43–9. doi: 10.4038/jccpsl.v23i1.8092.*

[34] *Ministry of Health Nutrition and Indigenous Medicine Sri Lanka. Preserving our progress, preparing our future: restructuring primary health care in Sri Lanka. 2017.*

[35] *https://www.exemplars.health/emerging-topics/epidemic-preparedness-and-response/digital-health-tools/cowin-in-india*

In India, the Ayushman Bharat program places interoperability at the center of its digital health mission and is developing a robust and digitally enabled healthcare system to cover surveillance, service delivery, and community engagement from the primary healthcare level. Ayushman Bharat brings together primary health, digital health, and health financing for tertiary and secondary care through both public and private facilities and ecosystems. With the far-reaching implementation of fintech, it could potentially solve the demand-side constraints of digital health acceptance and scale-up arising in the implementation of Ayushman Bharat and other such programs in the region.

**LEARNINGS:**

ABDM Sandbox hosts a series of Application Programming Interfaces (APIs), a software system that allows two applications to share information with each other in real-time, helping private and public digital partners validate their health-related software solutions. ABDM Sandbox invites tech companies to help utilize them to improve the health ecosystem in India.

India Stack: India Stack is a set of APIs that allows governments, businesses, startups, and developers to utilize a unique digital infrastructure to solve India's challenging problems towards presence-less, paperless, and cashless service delivery. This is one of the most important digital initiatives undertaken globally, aiming to set up a public digital infrastructure based on open APIs to promote public and private digital initiatives.

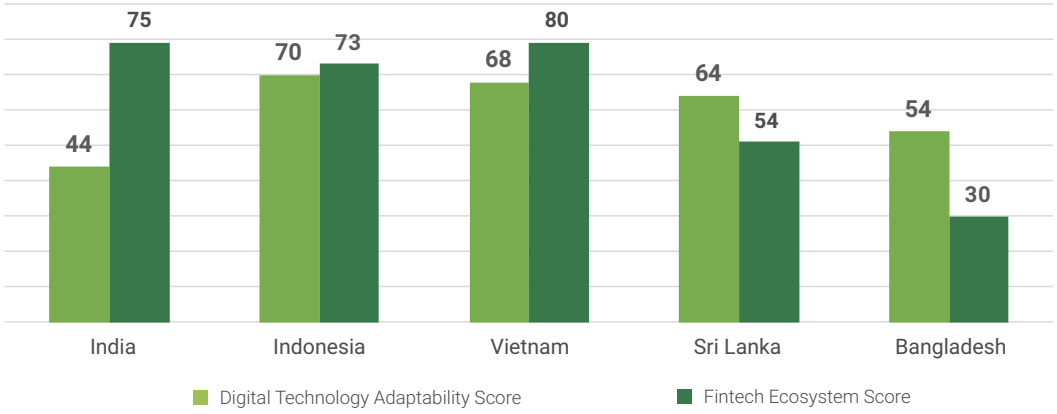
# Opportunities for Fintech in Primary Healthcare

## FINTECH IN PRIMARY HEALTHCARE COMPARATIVE INDEX FOR ASIA

| Country/Index | Digital Technology Adaptability | Primary Healthcare Focus | Fintech Ecosystem Score | Overall |
|---|---|---|---|---|
| Vietnam | 68 | 100 | 79 | 83 |
| Indonesia | 70 | 64 | 73 | 69 |
| Sri Lanka | 64 | 76 | 51 | 64 |
| India | 44 | 40 | 79 | 54 |
| Bangladesh | 54 | 20 | 30 | 35 |

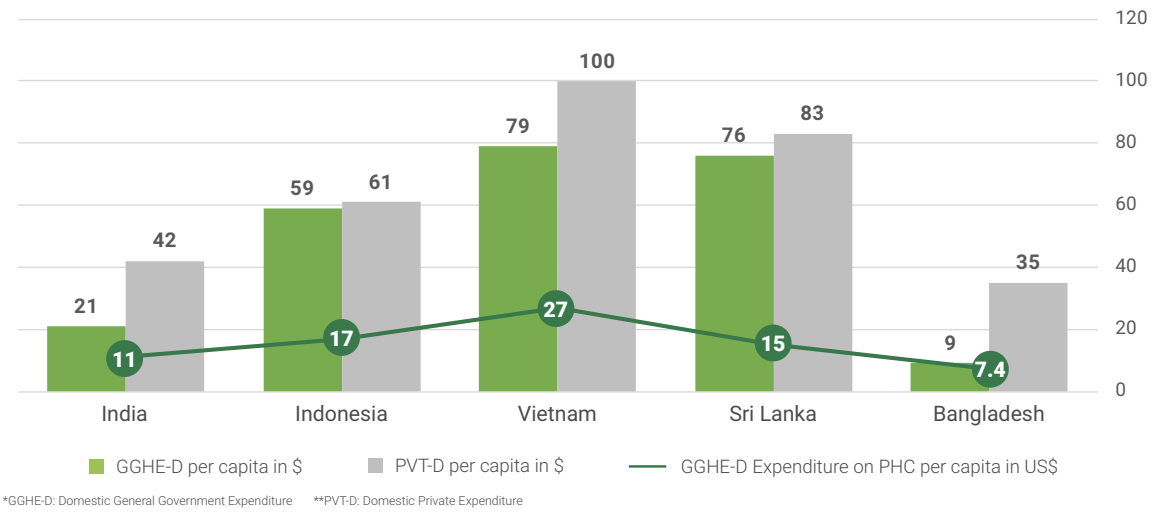
The index is developed using 14 different parameters for all the indices captured to provide an insight into the demographic's adaptability to digital technologies, the government's focus on primary healthcare, and the status of the fintech ecosystem in the country in comparison to the rest of the region. The scoring for each of the indices was relatively done in the select geography using specific indicators. The ecosystem for fintech and primary healthcare through this matrix and interactions with experts also provides insight into the opportunities and challenges for each of the intervention areas defined as part of this report. **Please refer to appendix 1 for the detailed index parameters.**

### Fintech and Digital Technology Adaptability Scope




The digital technology adaptability and fintech ecosystem score provide three different scenarios. The first scenario, for India, showcases an incredible startup ecosystem for fintech but slower adoption of the digital ecosystem for financial services and healthcare. Improving digital literacy, mobile cellular subscriptions, and use of digital payments banks, eWallets would help boost this score and create the consumer base for fintech companies in the region. The second scenario, for Sri Lanka and Bangladesh, showcases a poor startup ecosystem fueled by a combination of difficult regulation, low ease of doing business, and poor financial literacy compared to higher digital adoption by the populations for financial and healthcare solutions. Scope to improve the regulation and financial literacy is present in the region. The third scenario, for Indonesia and Vietnam, could be a test bed for startups and innovations to explore pilots and experiments in the fintech space. The first and third scenarios could potentially be the geographies for higher investments in fintech and healthtech ecosystems.

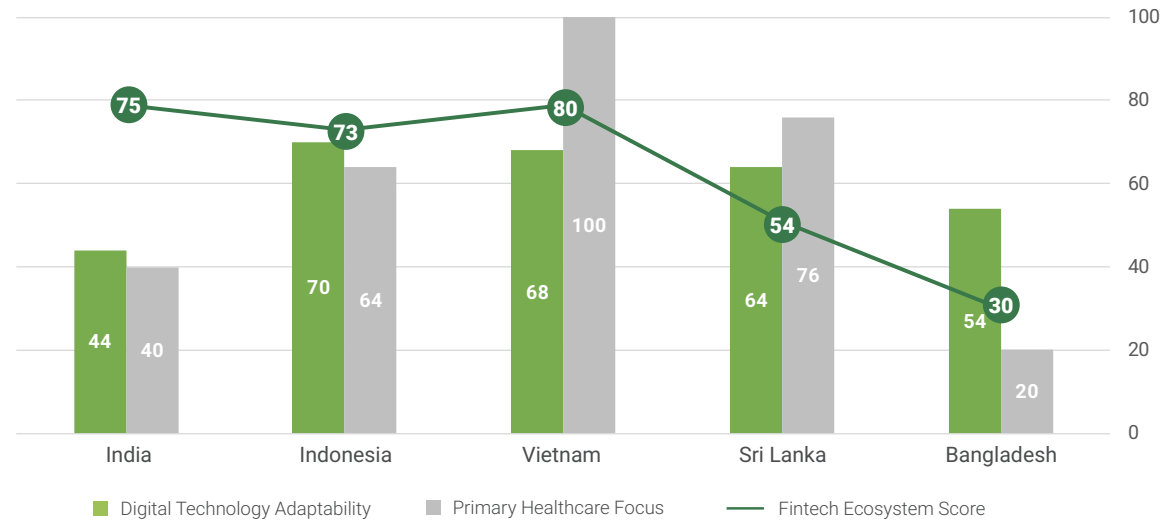
## Primary Healthcare Gap and Scope Mapping




*GGHE-D: Domestic General Government Expenditure **PVT-D: Domestic Private Expenditure

The graph shows a higher per capita expenditure by the private sector across the region. While mainly focused on secondary and tertiary care, private sector inclusion is being explored in primary care through applications such as telemedicine, online bookings for consultations, and subscriptions. The graph also showcases wide gaps in the per capita government expenditure on overall healthcare and primary health for Indonesia, Vietnam, and Sri Lanka. This can be inferred as high expenditure on secondary and tertiary care, which could be brought down by improvements in primary healthcare. Further, it has been proven that expenditure on PHC has more impact on health outcomes as compared to expenditure on secondary and tertiary care in terms of per dollar spent.[36] Startups have a better opportunity to work with the government, and pilot initiatives can be explored in these geographies with the government.

## Fintech for Primary Healthcare Adoption and Scope




[21] *https://www.cph.co.nz/wp-content/uploads/accessprimarycarechildrenyouth.pdf*

The graph showcases a representation of three different scores, which present a picture of available avenues for health tech and fintech innovations and the scale-up of startups for primary healthcare. The gap between the fintech ecosystem score and the other scores showcases the potential scope for healthtech and primary care innovations to leverage fintech innovations and the broader ecosystem, especially in India and Indonesia. The graph also shows the better performing digital ecosystem and its adoption among people as compared to primary healthcare in India, Indonesia, and Bangladesh. It is imperative that the use of digital innovations and technologies can help improve the uptake of primary healthcare in these countries due to its wide coverage. In Vietnam and Sri Lanka, the higher primary care score provides an understanding that better primary care systems and coverage can pave the way for further improvement of both health outcomes and financial inclusion through improved fintech adoption in the countries.

# Opportunities and Challenges Matrix - Fintech in Primary Healthcare in Asia

The opportunities and challenges presented below encompass the primary healthcare ecosystem to a large extent. However, the solutions envisaged below can be further customized and manifested in various forms to help cater to the local populations and varying demographics.

| Enablers | India | | Sri Lanka | | Bangladesh | | Indonesia | | Viet Nam | |
|---|---|---|---|---|---|---|---|---|---|---|
| | *Opportunity* | *Challenge* | *Opportunity* | *Challenge* | *Opportunity* | *Challenge* | *Opportunity* | *Challenge* | *Opportunity* | *Challenge* |
| **Foundations for Universal Health Coverage** | Top up IPD-OPD models with social insurance | Dependent on coordination with states | Insurtech as a top-up on life insurance | Limited social coverage | Many NGOs have tested and provided microinsurance | Low impact due to limited capacity and awareness | Insurtech as top-up on JKN, social health cover | Regulatory changes underway for JKN | Community-based microinsurance as loans | Limited geo-graphic reach and low scale |
| **Accessible Outpatient Care** | Digital tools and platforms for clinics with lending | Dependent on patients being on the platform | Distributor-led subscription-based IPD-OPD care coverage as top-up on insurance | Fintech sandbox is non-functional | Pharmacy-based kiosk model for PHC tested | Lack of investment to scale the model | Super apps provide bouquet of care services | Affordability concerns for low-income groups | P2P con-tract-based family doctor with at-home OPD | Dependent on an aggregator for doctors |
| **Strengthening Frontline Services and Referrals** | Prompt financial incentives for CHWs | Device avail-able but lack of fintech use | | Crisis has put social programs at risk | Subscription telemedicine-consultation model | Missing digital use in clinic networks | Fintech platform for puskesmas management | Insufficient use of online system | Subscription telemedicine -consultation model | Low private sector and CHC quality concerns |
| **Reorienting Wellness Programs** | Health score and savings for planned & emergencies | Low uptake due to accuracy concerns | Subscription for telehealth and rotation visits at PHC | Depends on service aggregator and govt | Subscrip-tion-based IPD and OPD packages | Dependent on a digital distributor | Telemedicine utility for care compliance and rewards | Low public-private connect and tele-uptake | E-Wallet with health track for premium reduction | Lack of data capture and use by facilities |
| **Resilient Systems and Supply Chains** | Fintech tools as digital backbone for health system | Heavy dependency on the government | Add-on funds for users or clinics through digital lending | Only low-ticket-size lending is allowed | Insurtech pilots with social programs | Progress on the pilots is unknown | Upcoming public fintech-based digital system | Low uptake by the private sector | Government interest in a fintech-based telemedicine | Details and specifics are unknown |
| **Sample Solution** | **Bringing UHI and UPI together as a digital interface to provide interoperable services across the entire system** | | **Add-on subscription-based disease-specific IPD and OPD package with Agrahara scheme or Life Insurance** | | **Digital lending to a merchant to set up a kiosk that provides other fintech and PHC such as insurtech, telehealth, and pharmacy** | | **PHCs/Puskesmas reform with digital and fintech solutions such as claims management and risk stratification for capitation-based system** | | **Wellness-oriented health wallet that tracks health behaviour to reduce insurance premiums and provides rewards to users** | |

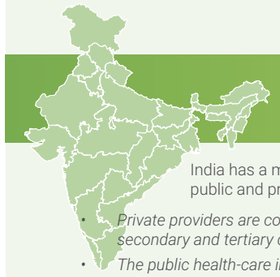
## CONTEXT OF THE MATRIX

The matrix provides insight into various opportunities available across the intervention areas in each of the identified geographies. This matrix aims to create avenues to customize and innovate fintech in primary healthcare solutions and not limit the stakeholders and audiences to these solutions in these geographies. The matrix has been color-coded to showcase the common or similar opportunities in the ecosystem across the intervention areas and the countries. The opportunities in the matrix have been bucketed into various categories, including – Top-up insurance, Digital lending, Digital system reforms, Subscription plans, Telemedicine-based packages, Microinsurance, Health wallets, and finally, the X-factors, the opportunities which are a result of a combination of solutions and the supportive ecosystem but could not be bucketed into any category and can be used to create solutions for different demographics and systems.

| Opportunity Bucket | Number of Opportunities |
|---|---|
| Top-up insurance | 4 |
| Digital lending | 2 |
| Digital system reforms | 3 |
| Subscription-based IPD-OPD plans | 2 |
| Telemedicine-based packages | 4 |
| Microinsurance | 2 |
| Health wallets | 2 |
| X-factors | 4 |
| **Total** | **24** |

The matrix also includes a sample solution derived and validated by experts for each of the geographies, and each of these sample solutions has been further elaborated as a persona in the upcoming section. The upcoming section on country profiles and personas aims to support the report's aim to be a gateway to customize fintech and digital health solutions and tools for primary healthcare and beyond.

# Country Profiles and Personas



# INDIA

India has a mixed health-care system, inclusive of public and private health service providers.

- *Private providers are concentrated in urban areas, and provide secondary and tertiary care.*
- *The public health-care infrastructure has been developed as a three-tier system based on the population norms – tertiary, secondary and primary care.*

National Health Authority (NHA) and the Ministry of Health and Family Welfare (MoHFW) launched the Ayushman Bharat mission, which aims to holistically address the healthcare system at all levels and achieve Universal Health Coverage.

Ayushman Bharat adopts a continuum of care approach through healthcare and digitalization:

- *Healthcare components: Health and Wellness Centres (HWCs) for primary care, including preventive and curative care, and Pradhan Mantri Jan Arogya Yojana (PM-JAY), a social health insurance scheme for tertiary care.*
- *Digitalization component: Ayushman Bharat Digital Mission (ABDM) is building digital systems and mechanisms for an interoperable health system across the country.*

## Country Profile

**1,380,000** Population (in thousands)

**62** Low-middle income population (percentage of total population)

**0.9** Physicians (per 1000 people)

**121** SDG Index (out of 165)

**70** Life Expectancy, Years (2019)

## Digital Health Adaptability Indicators

**43** Individuals using the internet (% of population)

**28.69** Made or received digital payments in the past year (% age 15+)

**79.88** Bank Account (% age 15+)

**1.99** Mobile Money Account (% age 15+)

# Primary Healthcare Model and Pillars

**11** Domestic General Government Expenditure on PHC per capita in US$

**45** Primary Health Care (PHC) Expenditure as % Current Health Expenditure (CHE)

**55** UHC Service Coverage Index

India is a middle-income country with significant improvements in health indicators over the years. However, India's health system faces significant challenges such as:

- Increasing noncommunicable diseases (NCDs) burden where cardiovascular diseases, respiratory diseases, and diabetes kill 4 million Indians annually.
- High out-of-pocket expenditures (OOPE)
- Inability of current state insurance schemes and free or subsidized care to mitigate OOPE,
- Lack of a robust tier-based healthcare system with effective gatekeeping mechanisms.

## FINANCING

**3.01** Current Health Expenditure (% of GDP)

**54.78** Out-of-pocket (OOPS) as % of Current Health Expenditure (CHE)

**211** Total per capita expenditure (in PPP intl $)

**69.2** Domestic General Government Expenditure on health per capita in PPP Intl$

**140.1** Private Health Expenditure per capita in PPP Intl$

### Public

- Ayushman Bharat PM-JAY is the world's largest health assurance scheme, which provides a health cover of INR 5 lakhs per family per year for secondary and tertiary care hospitalization and aims to cover about 40% of India's lower-income households.
- Multiple states such as Tamil Nadu, Maharashtra, Rajasthan, and Kerala, among others have also rolled out their own social health insurance schemes. These state-level schemes are now being merged or modified to complement the PM-JAY.
- By 2018-19, both the central and state governments were spending around ₹56 720 million as premiums on around 17 social health insurance programs covering 357.1 million people.

### Private

- 10% of primary care expenditure in the country happened at private hospitals, while 32% were at government facilities.
- 73% of total health expenditures are incurred by private entities, which include private insurers and individuals who bear out-of-pocket expenses, while less than a third are borne by the government.
- Data for the year 2010-11 on insurance-based government health schemes published by IRDA shows that the Net Earned Premium (NEP) collected by all the four public sector insurers put together is lesser than the NEP of the largest private player – there are 17 private insurance companies in total.

## COMMUNITY ENGAGEMENT

**186,000** Primary health units

- Community-based efforts through Accredited Social Health Activists (ASHA) are designed to be driven solely by voluntarism, with minimal effort or financial commitments, even as the expectations in terms of outcomes are quite high.
- Community ownership and community management of these centers are envisaged through the institutional mechanism of Jan Arogya Samitis (JASs) and are being formed at all functional AB-HWCs.

## GOVERNANCE

- Public health infrastructure in the states is managed through national-level and state-level National Health Mission (NHM), under which the government has established the National Rural Health Mission (NRHM) and National Urban Health Mission (NUHM), which focus on health planning, community processes, and behavior change communication, human resource development, public health management, and health management information systems.
- Ministry of Health and Family Welfare (MoHFW) is responsible for managing and handling central bodies, and providing expertise, direction, and budgetary support to various bodies.
- National Health Authority (NHA) is an office for the MoHFW and implementing agency for Ayushman Bharat. NHA implements these programs through State Health Authorities (SHAs) across the states.
- The private sector of healthcare in India is regulated by the MoHFW along with numerous autonomous bodies and departments, such as the Medical Council of India, and the Indian Council for Medical Research, who devise regulations and guidelines for the private sector.

## DIGITAL HEALTH INFORMATION SYSTEM

- NHA is also entrusted with the role of designing strategy, building technological infrastructure, and implementing the "Ayushman Bharat Digital Mission (ABDM)."
- The current strong public digital infrastructure—including that related to Aadhaar, Unified Payments Interface, and broad reach of the internet and mobile phones (JAM trinity) —provides a robust platform for establishing the building blocks of Ayushman Bharat Digital Mission (ABDM).
- The ability to digitally identify people, doctors, and health facilities, facilitate electronic signatures, ensure non-repudiable contracts, make paperless payments, securely store digital records, and contact people provide opportunities to streamline healthcare information through digital management.
- ABDM Sandbox hosts a series of APIs that helps private and public digital partners validate their health-related software solutions. ABDM Sandbox invites tech companies to help utilize them to improve the health ecosystem in India.

# Fintech for Health Landscape

**24** Fintech Literacy Index

**62** Ease of doing business index

**7,202** Number of fintech start-ups

India has the highest fintech adoption rate globally of 87%, which is significantly higher than the global average rate of 64%. India is among the fastest-growing fintech markets in the world. The fintech industry's market size is $31 bn in 2021 and is estimated at ~$ 150 bn by 2025.

## Potential Fintech Partners and Avenues

***Jan Dhan Yojana:*** The world's largest financial inclusion initiative, "Jan Dhan Yojna," has helped in new bank account enrollment of over 435 million beneficiaries for direct benefit transfer and accessibility to a host of financial services, enabling startups to build products to penetrate the large consumer-base.

***Financial Literacy:*** National Centre for Financial Education and the implementation of the Centre for Financial Literacy project by the Reserve Bank of India aims to improve financial literacy.

***E-RUPI:*** e-RUPI is a person and purpose-specific digital payment instrument to allow for contactless & cashless payment solutions and will play an important role in making the Direct Benefits Transfer more seamless & effective. The solution was adopted for cashless payments for the COVID-19 vaccination.

***India Stack:*** IndiaStack is a set of APIs that allows governments, businesses, startups, and developers to utilize a unique digital infrastructure to solve India's challenging problems towards presence-less, paperless, and cashless service delivery. This is one of the most important digital initiatives undertaken globally, aimed at setting up a public digital infrastructure based on open APIs.

***Paytm:*** Paytm is one of the biggest fintech companies and unicorns in India, providing fintech solutions such as digital payments, insurance, and savings wallet, and also allows users to directly avail a range of other services such as paying bills, booking appointments with various professionals, and buying products. Paytm also integrated with the Ayushman Bharat Digital Mission Sandbox recently and will play a crucial role in bringing fintech solutions into the health space.

***Embedded finance and banking-as-a-service:*** Non-bank companies are offering financial services to improve the ease of payment for their customers and their customer base to include the unbanked. Health-tech companies such as Navia Life Care, Fedo, Arogya Pay, and DigiSparsh provide bank accounts, wallets, payments, and lending options to the unbanked populations of India.

## SERVICE DELIVERY

### Public

- In March 2021, the government achieved the target of operationalizing 70,000 Ayushman Bharat-Health and Wellness Centres (AB-HWCs) and provided care to 41.35 crore people.
- The government has expanded the essential diagnostics list provided as a point of care to complement CPHC services (for health sub-centers, it increased from 7 to 14 tests; for primary health centres, it increased from 19 to 63 tests).
- Based on the population norms, a shortfall of 44% exists for primary health centers in urban areas.

### Private

- A national sample survey estimates that the private sector remains the major provider of health services in the country and caters to over 75% and 62% of outpatient and in-patient care, respectively.
- The private sector provides a majority of secondary, tertiary, and quaternary care institutions with major concentration in metros and tier I and II cities.

# INDIA

## TECH STARTUPS

Startups can leverage the developments in the biggest systems in the country to develop third-party applications and pilot them through RBI or ABDM or both the Sandboxes.

## PROVIDERS

Health service providers, including public primary, secondary and tertiary care units, need to be onboarded in the ecosystem through the use of applications that incentivize them through better accessibility and efficiency of tasks.

## INDIVIDUALS

Like with UPI, individuals will be able to utilize the system to keep track of their health appointments, conveniently pay for them, and access health across the country due to the interoperable nature of the systems.

## RESILIENT SYSTEMS AND SUPPLY CHAINS

## UNIFIED PAYMENTS INTERFACE

UPI powers multiple bank accounts into a single mobile application (of any bank), merging several banking features - fund routing and merchant payments. This can be expanded through third-party apps providing a variety of fintech solutions using UPI.

## FINTECH-ENABLED INTEGRATED HEALTH ECOSYSTEM

National-level Digital Public Goods for Improved Accessibility and Affordability of Health

## UNIFIED HEALTH INTERFACE

UHI is envisioned as an Open Protocol for various digital health services. UHI could enable a variety of health services, including bookings, logistics, data integration and transfer digitally. At every health stakeholder level, UHI could be useful and critical.

## GOVERNMENT

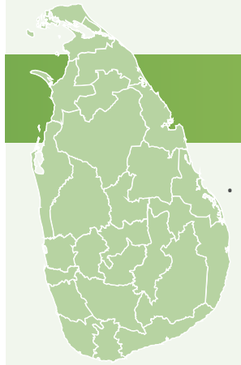
India's drive for innovation in the fintech and healthtech fields can be combined rapidly to develop a new ecosystem through meaningful collaborations between UPI, OCEN, and UHI through the Reserve Bank of India's (RBI) Sandbox and ABDM Sandbox

India's set of open APIs and Sandboxes create an opportunity for tech startups to pilot their solutions or digital public goods for universal usage. IndiaStack and Ayushman Bharat Digital Mission (ABDM) are leading the digital revolution for India in fintech and healthtech spaces, respectively. ABDM should use all digital public goods, including National Payments Corporation of India's (NPCI) Unified Payments Interface (UPI), Open Credit Enablement Network (OCEN), to strengthen the Unified Health Interface among other such tools.

IndiaStack

Ayushman Bharat Digital Mission

NPCI



# SRI LANKA

- Sri Lanka is a lower-middle-income country and, for several years, has outperformed many other countries in the World Health Organization (WHO) South-East Asian Region in health outcomes, including life expectancy, NCD-free status for malaria, polio, neonatal tetanus and measles, under-5 and maternal mortality.
- Sri Lanka's lack of health coverage, comprehensive and free service delivery, and the prevalence of skipping primary care increases out-of-pocket expenditures at public and private facilities.
- The cornerstone of Sri Lanka's Universal Health Coverage (UHC) agenda has been supply-side efforts to ensure strong service delivery. The private sector also plays a vital role in the equilibrium of Sri Lanka's health system.

## Country Profile

**21,324** Population (in thousands)

**11.7** Low-middle income population (percentage of total population)

**1.2** Physicians (per 1000 people)

**87** SDG Index (out of 165)

**76.8** Life Expectancy, Years (2019)

## Digital Health Adaptability Indicators

**49.8** Individuals using the internet (% of population)

**47.16** Made or received digital payments in the past year (% age 15+)

**73.65** Bank Account (% age 15+)

**2.42** Mobile Money Account (% age 15+)

# Primary Healthcare Model and Health System Pillars

**15** Domestic General Government Expenditure on PHC per capita in US$

**67** UHC Service Coverage Index

Sri Lanka's primary care system is characterized by:
- Potent frontline service delivery system through Primary Medical Care Units and community-based workers,
- Adoption and availability of generic medicines,
- Inclusion of wellness programs through HLCs, and
- Booming private sector providing curative services for primary care.

However, it lacks a gatekeeping system for curative care, which leads to people bypassing PHC services and lower-level hospitals. It also lacks robust data integration and usage for healthcare in the country.

## FINANCING

**4.08** Current Health Expenditure (% of GDP)

**46** Out-of-pocket (OOPS) as % of Current Health Expenditure (CHE)

**569.6** Total per capita expenditure (in PPP intl $)

**269** Domestic General Government Expenditure on health per capita in PPP Intl$

**292.9** Private Health Expenditure per capita in PPP Intl$

### Public

- Public curative services provide free outpatient and inpatient care and range from lower-level Primary Medical Care Units (PMCUs) to divisional, secondary and tertiary level hospitals .
- National Insurance Trust Fund Board (NITF) manages the health insurance program for government employees (around 700,000 households covered). The total outreach of the health program is close to 2 million members.

### Private

- Private health expenditure is divided between out-of-pocket payments (87%), private insurance (5%), employer provision of private insurance (7%), and non-profit institutions (2%).
- Increase in out-of-pocket spending has been spurred by the rising cost of health care.
- Allianz International, Cigna Global, and AIA are some of the biggest insurance companies in Sri Lanka. Numerous regional insurance companies such as Sri Lanka Insurance Corporation and Continental Insurance – Lanka also provide health coverage.

## SERVICE DELIVERY

### Public

Preventive healthcare focuses on promoting health and preventing disease through:
- 341 health units covering a geographical catchment of 60,000 individuals with a designated medical officer.
- 1.3 PHNSs and 29.5 PHMs per 100,000 population in 2016 as community-based personnel.

### Private

- Private sector plays a large role in primary health care provision, but the geographical distribution of these services is skewed – with a high proportion working either in the Colombo district or in the adjacent Western district.
- No guidance or regulation on what basic services should be provided by private primary care facilities.
- Private sector only provides curative PHC services.

## COMMUNITY ENGAGEMENT

**26.8** Rate of Public Health Midwives (per 100,000 population)

**8.0** Rate of Public Health Inspectors (per 100,000 population)

**1.4** Average distance from nearest basic health clinic (in kilometers)

**341** Primary health units

### Public

- Primary care infrastructure is available at all levels of public facilities, but there is currently no identified essential package of services defined to help distinguish the services at each level.
- This makes it further difficult to adhere to a formal referral mechanism; however, public outpatient departments directly refer patients to specialist clinics in the public sector.

### Private

Longitudinal continuity of care is relatively high in the private sector – with:
- 78% of visits were made by patients who had previously been seen by the practitioner,
- 31% are repeat visits for the same condition.

Informational continuity of care is an issue here as many private doctors do not keep a record of each visit and their records are neither standardized nor detailed.

## GOVERNANCE

- The Ministry of Health (MoH) is responsible for health policy development and the oversight of health service implementation.
- It is also responsible for managing large tertiary hospitals, while the secondary hospitals and primary health centers are managed by the provincial councils.
- Nine provincial ministries are autonomous in their services and are responsible for all health programs, and must adhere to the policies and strategies set by the MoH.

## DIGITAL HEALTH INFORMATION SYSTEM

- The Primary Health care strengthening project is empowered with a cloud-based Digital Health Information Management System that can store and share patients' clinical information, such as demographic information, examination data, diagnosis, and investigation data.
- Over 400,000 people above 35 years old are already empaneled into the system and screened for communicable diseases. Over 5.7 million patients have benefited from quick and hassle-free access to healthcare services and dispensing of medicine in hospitals around the country.

# Fintech for Health Landscape

**35** Digital and Financial Literacy Index

**99** Ease of doing business index

**94** Number of fintech start-ups

With more than 49.8% of individuals using the internet and more than 47.16% of people making or receiving digital payments in the past year in Sri Lanka, the country boasts high potential for fintech adoption.

### Potential Fintech Partners

- Insurance platforms such as InsureMe, an online insurance broker platform, and Save your Money, an online medical insurance distribution.
- Point-of-service/sale solutions such as Payable, payment gateways and mobile wallets such as SriPay, and blockchain and AI-based lending platforms such as iLoan.

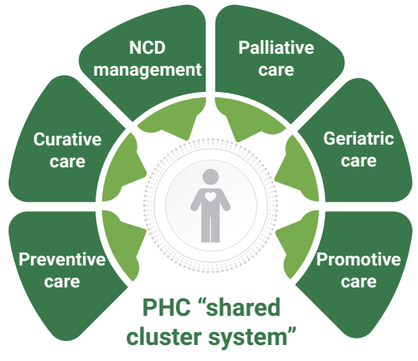
### Potential Healthtech Partners

- oDoc, a leading telemedicine service provider in Sri Lanka, launched the National Telemedicine Platform in 2021 on behalf of the country's health ministry as a corporate social responsibility project.
- MyDoctor, a pioneering Colombo-based digital health solution provider, partnered with the Ministry of Health and Indigenous Medical Services (MOH) to enable the government's eHealth system to offer free telemedicine services via the app.

### Fintech Regulatory Sandbox

Payments and Settlements Department of the Central Bank of Sri Lanka has established the FinTech Regulatory Sandbox, which provides a safe space in a controlled environment for selected innovators to test their products and services without the risk of infringing on regulatory requirements.

**There are plans to establish a PHC "shared cluster system," which would reorganize the system into geographical catchments or panels with a specialist institution to support a comprehensive care package to address NCD management, geriatric care, and palliative care, as well as curative, preventive and promotive care, with a strong patient-centered focus.**



# SRI LANKA

## DIAGNOSTICS

Diagnostics partner will provide discounted rates for periodic check-ups for the specific disease and related ailments

## HOSPITALS

Cashless hospitalization and inpatient care up to a certain value as per the package and coverage for certain specific disease-related procedures.

**FOUNDATIONS FOR UNIVERSAL HEALTH COVERAGE**

## PHARMACY

Digital pharmacy store offering home delivery of medicines is integrated with telemedicine, and specific medicines are covered under the outpatient package, especially if concerned with the specific disease.

ADD-ON SUBSCRIPTION FOR AGRAHARA AND LIFE INSURANCE PACKAGES

## MANAGED CARE MODEL

Disease-specific inpatient and outpatient cover packages

Gayan is a middle-aged government employee residing in Colombo. His father, like almost the rest of his family, has been diagnosed with critical diabetes and requires frequent doses of insulin and other medicines. While government dispensaries provide free medicines to government employees covered under the Agrahara scheme, the medicines are not always available and out-of-pocket expenses for the medicines and treatment is very high.

## TELEMEDICINE

Telemedicine company partners with the insurer to provide low-cost outpatient care such as screenings and basic ailments periodically and adjust the frequency as per the subscription.

## INSURANCE

The insurance company offers a package with inpatient and outpatient care through group insurance with a shared risk which reduces the premium. Further, outpatient care and its compliance helps the insurance company manage the risk.

**Gayan** — GOVERNMENT EMPLOYEE

**NEED** » As Gayan is at risk of diabetes, he wants an affordable solution to cover his treatment if he is to diagnose diabetes in the future.

# BANGLADESH

With an estimated population of 162 million people living in a territory of only 147,570 square kilometers, Bangladesh is one of the most densely populated countries in the world.

- Bangladesh has a poverty rate of 24.3%, with 12.9% living in extreme poverty. Bangladesh's poor, low-income, and slum dwellers have limited access to healthcare facilities. According to the World Health Organization (WHO), health expenditures must be nearly 15% of a country's budget.
- The health system of Bangladesh is experiencing a double burden of diseases, low service coverage, and a lack of effective financial risk protection mechanisms.
- Life expectancy has jumped from a mere 45 years in 1960 to almost 73 years now, and the under-five mortality rate is less than a quarter of what it was in 1990. The country achieved Millennium Development Goal 4 (MDG 4) by reducing child death ahead of the 2015 target and improved other key indicators.

## Country Profile

**165,159** Population (in thousands)

**52** Low-middle income population (percentage of total population)

**0.6** Physicians (per 1000 people)

**109** SDG Index (out of 165)

**73** Life Expectancy, Years (2019)

## Digital Health Adaptability Indicators

**24.8** Individuals using the internet (% of population)

**34.11** Made or received digital payments in the past year (% age 15+)

**50.04** Bank Account (% age 15+)

**21.25** Mobile Money Account (% age 15+)

## Primary Healthcare Model and Health System Pillars

**7.4** Domestic General Government Expenditure on PHC per capita in US$

**25** Primary Health Care (PHC) Expenditure as % Current Health Expenditure (CHE)

**51** UHC Service Coverage Index

Primary Healthcare services are provided by the government, private sector, and NGOs.
The public healthcare services are organized between four levels:

- Community-level healthcare (provided by the domiciliary health providers and community clinics),
- Primary level healthcare (provided in Rural Health Centers, Union Subcenters, Union Family Welfare Centers, and Upazila Health Complexes),
- Secondary level healthcare (provided in District Hospitals, General Hospitals, Chest Disease Clinics, Tuberculosis Clinics, and Leprosy Hospitals), and
- Tertiary level healthcare (provided in Post Graduate Medical Institutes, Specialized Healthcare Centers, Medical College Hospitals, and Infectious Disease Hospitals).

In urban areas, private service providers and local NGOs work with city corporations to provide care to the 60 million-strong urban population, which is about 36.6% of the population. This number is expected to increase by over 50% by 2035 to reach 94 million.

### FINANCING

**2.48** Current Health Expenditure (% of GDP)

**73** Out-of-pocket (OOPS) as % of Current Health Expenditure (CHE)

**123** Total per capita expenditure (in PPP intl $)

**22.96** Domestic General Government Expenditure on health per capita in PPP Intl$

**92.78** Private Health Expenditure per capita in PPP Intl$

#### Public

- Bangladesh has three main sources of health revenue: the government budget, out-of-pocket household payments, and external donor funds.
- Bangladesh has the highest catastrophic health expenditure rates in South Asia, with 25% of the population experiencing catastrophic health expenditure in 2016 and over 5 million people impoverished by healthcare costs each year.
- Looking at the total amount of money spent on health in the country (total health expenditure), the government's contribution is 23.1%, while 63.3% comes from individual out-of-pocket expenditure. Voluntary health insurance schemes make up about 5.25% of total health expenditure.
- The Health Care Financing Strategy 2012–2032 was launched in 2012 by the Health Economics Unit to "deepen and broaden the resource base for health in the country" to address the large out-of-pocket expenditure, the absence of health insurance programs, the inequitable health service coverage, especially for the poorest populations, and increasing disparities in health care access and affordability.

#### Private

- The private sector is developing health insurance schemes. However, they are almost entirely directed at the middle class and not at the poorest and neediest in the country.

### GOVERNANCE

- Bangladesh's health system is pluralistic, with four key actors that define the structure and function of the system: government, private sector, nongovernmental organizations (NGOs), and donor agencies.
- The system remains highly centralized, with the Ministry of Health and Family Welfare (MOHFW) responsible for overseeing, managing, and regulating health, family planning, and nutrition programs.
- The MOHFW holds two Directorates; the Directorate General of Health Services (DGHS) and the Directorate General of Family Planning (DGFP). These two Directorates both provide general health and family planning services through district hospitals, Upazila Health Complexes at the sub-district level, Union Health and Family Welfare Centres at the union level, and community clinics at the ward level.
- The MOHFW directly oversees PHC facilities in rural areas, and the Ministry of Local Government, Rural Development and Cooperatives is responsible for providing urban primary healthcare services.
- 11 city corporations and 321 municipalities influence health service delivery through government clinics and nongovernmental organization clinics in urban areas.

### DIGITAL HEALTH INFORMATION SYSTEM

- Bangladesh is the largest DHIS2 deployer in the world, where the reporting rate is, on average, 98%.
- Routine health information is now available in a timely manner, in a format accessible to all. The system connects central, divisional, and districts with sub-district facilities and over 13,000 community clinics.
- DHIS2 has been a vehicle for data system improvement and other areas of health systems.
- Bangladesh has taken multiple actions to strengthen the health system on the pathway toward UHC. The DHIS2 aims to increase quality information for decision-making.
- However, the DHIS-2 only captures aggregate data and not individual patient data, and shared electronic health records remain non-existent.

### SERVICE DELIVERY

#### Public

- Of the three main groups involved in primary health service delivery in Bangladesh, the government remains the largest of infrastructure and coverage.
- Government health services at the primary level in rural areas comprise the following:
  - *Community clinics (ward level): 13,442, with a stated intended coverage of 6000 people per clinic in rural areas, supposedly reaching 78,420,000 people;*
  - *Union-level health facilities: 1399;*
  - *Upazila-level facilities: 490, with a stated intended primary care coverage of 114,480,000 people.*
- The vast majority of this health care was delivered, and continues to be delivered, by front-line health workers who are not doctors but are community health workers and other health professionals.
- The Ministry of Local Government, Rural Development and Cooperatives is supposed to build an urban PHC system and provide oversight of the private health sector, as they are the only provider of health services in urban areas, except for the outpatient services offered through government hospitals, dispensaries, and school-based health clinics.

#### NGOs

- NGOs and private for-profit facilities have flourished in an unregulated market. A recent proposal was that the government's urban dispensaries would be expanded to provide PHC services, and these could act as referral points, directing people to second and third-level hospitals located in urban centers.
- The NGO Health Service Delivery Project provides an interesting insight into the Ministry of Health and Family Welfare's contracting relationship with the NGOs and the role of NGOs in PHC service delivery targeting the poor. The network has now been included under one social enteprise, Surjer Hashi Network, and the following downsizing includes 134 clinics across 55 districts. This network is currently funded by USAID; however, it is on its way to being self-sustained and independent from 2023.
- There have been initiatives to deliver urban primary health services through public-private partnerships, most notably through the Urban Primary Health Care Project. The project operates in nine city corporations and four districts, with a catchment area of 10 million people.

#### Private

- The private sector has developed its own approach to increasing the number of patients in this unregulated market through the widespread use of brokers – marketers and intermediaries whose job is to generate business for private health facilities. This practice increases the out-of-pocket expenses incurred by the poor.
- The Medical Practice and Private Clinics and Laboratories (Regulation) Ordinance, 1982, provides outdated and insufficient accountability on private sector clinics and hospitals. There is also a lack of any regulation or law to procure health services from the private sector, suggesting minimal contribution by the private sector to the public health of Bangladesh.
- The absence of government PHC services in urban areas has, as a necessity, been filled by a rapidly growing private sector, including an extensive number of drug stores and by patient use of tertiary hospitals. Drug stores are the first point of access for health care in urban and rural areas.

## Fintech for Health Landscape

**19** Fintech Literacy Index

**168** Ease of doing business index

**167** Number of fintech start-ups

Bangladesh is growing into a distinct digital financial services market. The Mobile Financial Services (MFS) market has several serious players, including Nagad, Rocket, and Upay. There are several players in the digital payment market, including Dmoney and iPay. There are products in P2P lending, BNPL verticals. Finance remains a highly regulated industry in the country. Along with MFS growth, bank-led innovations in the fintech space are leading, whereas independent fintech players remain on the periphery.

### Potential Fintech Partners and Avenues

***Health Economics Unit:*** They are running three pilots on health care financing: investigating health care insurance schemes, improving maternal and child health-related demand-side financing, and providing free health services in the upazila health complexes.

***BRAC:*** BRAC with bKash and the Bill and Melinda Gates Foundation created and ran a pilot on the BRAC Shakti, which provides a savings account to women groups and provides them with financial and digital literacy. BRAC is currently conducting a larger pilot on the same, and it is one of the many public health and digital transformation projects undertaken by BRAC.

***A2I (Aspire to Innovate):*** A2I is a multinational digital transformation catalyst from the Government of Bangladesh which runs projects that aim to provide easy, affordable, and reliable access to quality public services for all citizens of Bangladesh. They help the government implement at-scale programs.

***bKash:*** Mobile financial services and payment systems for consumers. It features a solution for money transfers, mobile recharges, utility bill payments, and others. Users can dial a number to initiate the transaction, fill in the bKash account, amount, and the money will be sent to the receiver's mobile. The beneficiary can cash out at the participating agent , partnered locations, and ATMs.

***CMED:*** CMED is a smart health monitoring system for regular health monitoring. CMED uses smart medical sensors connected to a smartphone to measure vital signs and store data on its secured cloud server. Users will get instant feedback about their health status. CMED also generates health records that will help doctors to minimize diagnostic time and give better treatment.

***Jeeon:*** Digitizing and upgrading retail pharmacies, which act as the primary healthcare destination for low-income populations. These pharmacies provide access to quality doctors, medicines, health products, and procedures.

***Daktar Bondhu:*** The company currently offers video consultations with 60+ specialist doctors across 20+ departments which include mental health, dermatology, cardiology, etc., through its mobile app. It also delivers authentic medicine and healthcare products to the patients' doorstep within 24 hours inside Dhaka city at an affordable price.

***Sajida Foundation's Nirapotta (Safety Net) program:*** This health insurance scheme is intended to help lower-income, lower-middle-income, and middle-income households at a ratio of 20%, 20-40%, and 40-60%, respectively. In reality, the program has not been as successful as it had hoped in recruiting the poorest households. The experimental models and ideas being explored in the USAID-funded Advancing Universal Health Coverage project for achieving more equitable health coverage might offer lessons going forward.

### COMMUNITY ENGAGEMENT

- Bangladesh has established community clinics as decentralized healthcare units at the village level to ensure smooth and equal access to family planning, preventive health services, and limited curative care for the local community.
- Community clinics are the lowest unit of decentralized health care delivery, each of which serves 6,000 people at the grassroots level in Bangladesh. Currently, 13,500 community clinics are functioning in rural Bangladesh to serve the rural people.
- The government partnered with NGOs such as BRAC, the International Centre for Diarrheal Disease Research, Bangladesh (icddr,b), and Gonoshasthaya Kendra to deliver services at scale and mobilized a cadre of female CHWs to deliver health information and services directly to people's doors.
- Bangladesh's decentralized community clinics provide access to family planning, preventive health services, and limited curative care in rural areas. However, a similar service is lacking in urban areas.

# BANGLADESH

## ABDUL

A SMALL-TIME SHOPKEEPER IN THE SUBURBS OF DHAKA

Abdul owns and operates a small general store close to the borders of Dhaka. His general store is preferred by the people in the area due to the trust and relationship developed by abdul. His shop also sells some wellness products used by the population. This region does not have a public health facility or a government dispensary providing free medicines. With support from a lender, Abdul wants to set up a kiosk in his shop that can help facilitate drug delivery and practice telemedicine.

**ACCESSIBLE OUTPATIENT CARE**

## MERCHANT

The **merchant** is one of the primary users of the kiosk model, whose reliance on the lender's loan is rewarded by revenue each time there is a purchase from the kiosk.

## PATIENT

The **patient** is one of the primary payers of the kiosk model, who benefits from the confluence of primary healthcare services and financial products in one location.

SUSTAINABLE ENTERPRISE MODEL:

## THE KIOSK

The kiosk is a one-stop-shop model containing health services (telemedicine, teleconsultation), as well as financial products for the patient.

## DIGITAL LENDER

The **digital lender** loans the merchant the capital to set up a health-tech kiosk. They are further reimbursed when the patients avail of the lender's loans to finance their payment for the kiosk's health services.

## INSURANCE

**Insurance providers**, are possible partners for the subscription model, for increased customer appeal, and eased claim management.

## HEALTHCARE

Various healthcare providers benefit from the increased services: **doctors** have increased in-person or remote appointments generated, and **pharmacies** receive an influx of orders for medicine.

Stakeholder image is a dummy person and not real one

# VIETNAM

- Vietnam has made remarkable gains in health outcomes, including the achievement of the United Nations Millennium Development Goals (MDGs).
- The ratio of domestic general government health spending to gross domestic product (GDP) shows that the government overall prioritizes investments in health, and Vietnam's total health expenditure is higher than the average of lower-middle-income countries.
- Urbanization and the aging population have brought rapid epidemiological transitions and shifts in disease patterns. The change has highlighted the need to strengthen PHC capacity for noncommunicable disease (NCD) prevention and management through the reform of Commune Health Centers (CHCs).

## Country Profile

**97,339** Population (in thousands)

**7** Low-middle income population (percentage of total population)

**0.8** Physicians (per 1000 people)

**51** SDG Index (out of 165)

**75** Life Expectancy, Years (2019)

## Digital Health Adaptability Indicators

**70.3** Individuals using the internet (% of population)

**22.73** Made or received digital payments in the past year (% age 15+)

**30.8** Bank Account (% age 15+)

**3.5** Mobile Money Account (% age 15+)

# Primary Healthcare Model and Pillars

**27** Domestic General Government Expenditure on PHC per capita in US$

**38** Primary Health Care (PHC) Expenditure as % Current Health Expenditure (CHE)

**77** UHC Service Coverage Index

Primary care in Vietnam is mainly provided by a network of more than 11,000 community health care centers that provide basic and essential health services to people in every commune.
The healthcare system in Vietnam is a mixture of public and private. It is divided into four levels:

- Central (Level I);
- Provincial (Level II), covering a population of 1–2 million;
- District (Level III), covering 100,000–200,000; and
- Commune (Level IV), covering around 5000–10,000.

Private hospitals, however, now provide more than 60% of outpatient services and have become an important component of the national health system.

## FINANCING

**5.25** Current Health Expenditure (% of GDP)

**43** Out-of-pocket (OOPS) as % of Current Health Expenditure (CHE)

**559** Total per capita expenditure (in PPP intl $)

**244.8** Domestic General Government Expenditure on health per capita in PPP Intl$

**308.7** Private Health Expenditure per capita in PPP Intl$

### Public

- In 2014, a law mandated health insurance for all. Such reforms have improved financial access to community-based care for a significant part of the Vietnamese population. CHCs are also increasingly integrated into the health insurance system, with 80% of communes participating in 2014.
- As of 2018, 87% of the Vietnamese population is covered by social health insurance. Most of the health insurance fund, about 70%, is being spent at secondary and tertiary levels.
- The Vietnam Health Financing Strategy for 2016–2025 proposes financing reforms to institute payment mechanisms for PHC services, allocate funds for community health care, include PHC services in health insurance, and prioritize PHC services and NCD care in a cost-effective health service package.

### Private

- All non-life insurance companies have health insurance products. Life insurance companies mainly provide health insurance as a complementary product to a life insurance policy, including death, saving, and investment.
- Four life insurance companies provide health insurance as the main contract. These companies are AAA, General, Chub life, and FWD.
- According to statistical data provided by the Insurance Association of Vietnam, in 2018, there were a total of 49 insurance companies registered. Of these are 29 non-life insurers, 18 life insurers, and 02 re-insurers. Five leading companies in non-life insurance are Bao Viet, PVI, PTI, Bao Minh, and PJICO.
- Total claims for medical and healthcare insurance were quite small compared to social health insurance. This reflects the small role of private health insurance.

## COMMUNITY ENGAGEMENT

**11,000** Primary health units

- People tend not to have a primary care provider who acts as a care coordinator to guide them through the system to get effective and appropriate care.
- Despite higher co-payment rates at higher-level hospitals to discourage bypassing, the deterrent effect has not been strong because service prices have been substantially subsidized.
- The Community Finance Resource Center (CFRC) provides microinsurance for health and term life insurance through its Social Funds used to provide loans to members. When a loan is provided, insurance products are introduced, and premiums are collected upon loan payments. As of 2015, the number of insured has reached 9.000 people. The total premium is 8.2 billion VND (around $400,000).

## SERVICE DELIVERY

### Public

- PHC is the main function at the grassroots level in Vietnam, which includes health care providers at district and commune levels, including village health workers, commune health stations (CHSs), district health centers (DHCs), and district hospitals (DHs).
- The revitalization of the CHC network has substantially improved service coverage, including the percentage of pregnant women who attend four or more antenatal care visits, rates of children receiving appropriate treatment for diarrhea, and facility-based delivery rates.
- Basic infrastructure, equipment, and competencies are often lacking: in 2016, only 69.8 percent of rural communes met the 2014 national commune health benchmarks.
- With limited knowledge and capacity at the primary level, patients are more likely to access noncommunicable disease services at higher-level hospitals, where they can incur higher co-payments as well as inconvenience.

### Private

- The private health sector has played an important role in PHC, accounting for 40% of total outpatient visits in 2010.
- The private sector consists mainly of outpatient clinics and pharmacies at the community level (many of which are staffed by public employees after official working hours) and a growing number of hospitals in urban areas.
- Patients from various socioeconomic backgrounds have sought outpatient care at private clinics because of convenience, better staff attitudes, and shorter waiting times.

## GOVERNANCE

- The public system, the largest part, is organized under an administrative hierarchy, with the central level under the Ministry of Health and local levels under provincial and municipal authorities.
- There are four levels of service delivery: the central level managed directly by the Ministry of Health, the provincial and district levels, the commune level, and a network of village health workers.
- Level I hospitals include central hospitals owned by the Ministry of Health and city hospitals owned by municipalities such as Hanoi or Ho Chi Minh City.
- Level II, III, and IV hospitals are owned by local, provincial governments, such as the people's committee.
- The provincial or district health department is responsible for its professional management under the Vietnamese Ministry of Health.

## DIGITAL HEALTH INFORMATION SYSTEM

- The country's current health information system includes many indicators covering different domains; however, it also has limitations.
- Limitations included data issues, such as:
  - *Data quality: there is no mechanism for verification, supervision, and monitoring of data collection and reporting;*
  - *Scope of data collection: the current health information collects data only from MOH public facilities;*
  - *Data utilization: limited use of data in evaluating programs and developing future plans.*

# Fintech for Health Landscape

**24** Fintech Literacy Index

**70** Ease of doing business index

**343** Number of fintech start-ups

Vietnam's fintech industry is rapidly growing, especially in investment and the number of new firms, which grew by 170% between 2017 and 2020. The country has recorded a significant increase in transaction values from e-wallets and mobile banking in recent years. The Ministry of Finance has been working on proposing policies for managing virtual assets and cryptocurrencies in the future.

## Potential Fintech Partners and Avenues

***Fintech Regulatory Sandbox:*** The State Bank of Vietnam has been accelerating the development of the first regulatory sandbox for fintech since 2021. In addition, the committee has also established direct dialogue channels with fintech firms to facilitate active problem-solving during their operation. The sandbox allows the test run of fintech across five services and an open dialogue mechanism for the test run.

***Vietnam Innovative Startup Accelerator (VIISA):*** This is a partnership between FPT and Dragon Capital, with $8 million available for investment. The program targets fintech, insurtech, B2C/B2B platforms, and other sectors.

***Vietnam Silicon Valley:*** This is a four-month-long intensive program with funding up to $10K for 10% equity. The program provides selected companies with office space, legal & business consulting, and pitching possibilities at the end of the program.

***WiCare:*** This is a digital insurance broker that rewards you for exercise.

***Papaya:*** This is said to be focused on pioneering a new employee benefits strategy by giving the employees the power to make personalized healthcare choices through the Papaya App for corporates to manage all employee benefits aspects ranging from enrolment, adding dependents, to selecting the benefits.

***Jio Health:*** This goes beyond merely booking a doctor for a home visit or teleconsultation. Customers can request repeat prescriptions and lab tests and order any other necessary medication through the app.

***Bsgiadinh.vn:*** A family doctor center in Ho Chi Minh City, Bsgiadinh moved online to provide a booking system for home visits. The assigned doctor can dispense general health care and treatment. Bsgiadinh also provides nursing services to care for wounds, change bandages, or provide infusion therapy at home.

***Momo Vietnam:*** Momo offers a wallet to consumers. Its services include bill payments, fuel payments, parking payments, money transfers, online payments, and in-store payments. It can be recharged via credit/debit cards. Momo is the biggest eWallet in Vietnam, with 12 million users and 12,000 partners.

# VIETNAM

## GOVERNMENT

Regulators in Vietnam would need to create regulations for reductions to premiums and provide access to the Sandbox to pilot these tools.

## TELEMEDICINE

Telemedicine healthcare providers could be integrated into the health wallet in line with the Vietnam government's priorities to provide basic consultation for OPD online at lower costs.

## INDIVIDUALS

Individuals can start saving money for planned or anticipated illnesses or procedures. Through the health wallet, individuals will be able to track their insurance premiums and manage finances accordingly through the realtime visibility of their financial resources for health on a single platform.

## HEALTHTECH STARTUPS

Healthtech startups can utilize the sandbox and these fintech solutions to create a platform that allows the users to review their available financial funds from each of these sources.

## WELLNESS-ORIENTED HEALTH WALLET

An integrated health wallet promoting healthy behaviour

## REORIENTING WELLNESS PROGRAMS

Over 66% of Vietnamese fintech companies are involved in digital payment services via online payment apps, and have taken over 87% of the fintech market share. The State Bank of Vietnam (SBV) issued licenses to 27 intermediary payment service providers, of which most of them are ewallet service providers. Some of the e-wallet service providers that are leading Vietnam's fintech industry include Momo, 123Pay, VnPay, Ngan Luong, Bao Kim, Payoo, and OnePay. All of them have a total user base of 48 million.

momo VNPAY NgânLượng.vn OnePay 123pay Payoo

## LENDING AND SAVINGS STARTUPS

Fintech startups providing lending and savings solutions can partner with an insurtech company to provide comprehensive fintech solutions. The solution can also provide a health risk score based on a behavioural questionnaire and tele-consultation.

## INSURTECH STARTUPS

Insurtech startups can develop a product that can accommodate rewards and/or reductions in premiums due to improvements in health-seeking behaviour.

# INDONESIA

- Indonesia is the largest archipelago country in the world and has more than 17,000 islands with more than 270 million citizens and a population growth rate of 1.38%.
- Currently, Indonesia has a triple burden of health problems – infectious and new emerging diseases, chronic diseases, and trauma and injuries
- In 2014, the government enacted UHC for all residents through a single-payer national insurance program known as Jaminan Kesehatan Nasional (JKN). The universal coverage component has been managed by the Health Social Security Agency (BPJS-Kesehatan).
- Program Indonesia Sehat (Healthy Indonesia Program) consists of three family-focused pillars for strengthening primary health care (PHC), namely a healthy paradigm campaign, improving community healthcare access and quality, and implementing universal coverage.

## Country Profile

**273,524**
Population (in thousands)

**18** Low-middle income population (percentage of total population)

**0.5**
Physicians (per 1000 people)

**82**
SDG Index (out of 165)

**72**
Life Expectancy, Years (2019)

## Digital Health Adaptability Indicators

**49.8**
Individuals using the internet (% of population)

**47.16** Made or received digital payments in the past year (% age 15+)

**73.65**
Bank Account (% age 15+)

**2.42**
Mobile Money Account (% age 15+)

# Primary Healthcare Model and Health System Pillars

**17** Domestic General Government Expenditure on PHC per capita in US$

**27** Primary Health Care (PHC) Expenditure as % Current Health Expenditure (CHE)

**57** UHC Service Coverage Index

The healthcare system in Indonesia comprises both the public and private sectors. Both sectors can make working agreements with BPJS-Kesehatan and provide healthcare services for its members.

- Puskesmas and their auxiliary networks are public primary care facilities funded and run by the government.
- Private primary care services consist of private primary care clinics (klinik pratama) and solo practices of health care professionals, such as GPs, midwives, and nurses.

Challenges faced by Indonesia's health system include:

- Implementing the structured referral system;
- Lack of ability of primary care facilities to manage patients;
- Lack of competent healthcare personnel;
- Lack of medicines and medical devices;
- Ineffective policies imposed by the government and insurance agencies.

## FINANCING

**2.9** Current Health Expenditure (% of GDP)

**34.76** Out-of-pocket (OOPS) as % of Current Health Expenditure (CHE)

**358**
Total per capita expenditure (in PPP intl $)

**175.3**
Domestic General Government Expenditure on health per capita in PPP Intl$

**181**
Private Health Expenditure per capita in PPP Intl$

### Public

- As of March 2021, 82.3% of the total population had enrolled in JKN, and 60% of its members were either nationally or regionally subsidized by the government.
- BPJS-Kesehatan faced a financial deficit of approximately 18 trillion Indonesian rupiahs (1.2 Billion USD) between 2014 to 2016 .

### Private

- Roughly 7% of the population is covered by private health insurance , leaving about 9% of the population uninsured, who spend out of pocket for healthcare.
- Private health expenditure is divided between out-of-pocket household payments (32.1%), private insurance (3.5%), employer provision of private insurance (11.1%), other public schemes (29.1%), and non-profit institutions (1%).
- The Ministry of Health and BPJS Kesehatan regulation permits a private health insurance product to supplement JKN coverage for costs not covered by the UHC scheme in an arrangement known as additional health insurance "asuransi kesehaatn tambahan" (AKT).

## COMMUNITY ENGAGEMENT

**186,000**
Primary health units

- Nusantara Sehat also focuses on continuity of care, empowering the community, creating integrated health care, and increasing equitable health services.
- Each puskesmas is responsible for community health efforts, consisting of public health activities for the population within their working area.
- Community health efforts of the puskesmas are geared towards preventive and promotive care, while primary care focuses more on outpatient and in-patient services as well as home care.
- Healthy Indonesia Program with Family Approach (PIS-PK) (2015-2019) is a method of service delivery in the puskesmas network as the first contact for family units for 2000-7000 families.

## GOVERNANCE

- The public healthcare facilities are governed by:
  - *The local government manages primary care facilities (puskesmas and their auxiliary centers) and district hospitals (hospital types C and D).*
  - *District hospitals are managed by provincial governments (hospital types B and C).*
  - *The central government manages to type A or B hospitals.*
- The private sector has primary care facilities such as primary care clinics, solo practice GPs or dentists, and solo practice midwives, as well as private hospitals (types B, C, and D).
- To increase accessibility, a range of auxiliary centers supports each puskesmas.

## DIGITAL HEALTH INFORMATION SYSTEM

- The government's Satu Sehat will integrate data sharing and access for puskesmas and pharmacies. Open APIs for various tools related to health for public health scale-up are available on the government's website and private sector players can download this from the website and become partners.
- The current National Health Insurance system provides a national online medical record –P-Care – at all primary care facilities that serve BPJS-Kesehatan members. This puts the foundation for an integrated referral system for primary, secondary, and tertiary care has been put in place.

## SERVICE DELIVERY

### Public

- The majority of healthcare personnel undertake dual practice, working in both the public and private sectors. More than half of PHC facilities are puskesmas (55.8%), followed by general solo practices (22.9%) and medical centers (13.7%).
- Puskesmas and their auxiliary networks conduct two main activities: individual health efforts and community health efforts. One-third of puskesmas also provide basic in-patient care.
- Puskesmas are staffed by multi-professional teams, and a number of puskesmas continue to increase by 3% to 3.5% every year. However, the ratio of puskesmas to population has decreased since 2014.

### Private

- Private PHC services are delivered by individual practice GPs, midwives, nurses, and private clinics carrying out only individual health efforts.
- Private facilities must communicate and collaborate with puskesmas regarding disease surveillance and other government public health programs, such as immunization and HIV.

# Fintech for Health Landscape

**32**
Fintech Literacy Index

**73**
Ease of doing business index

**1,069**
Number of fintech start-ups

According to the World Bank's Global Financial Inclusion Index database, Indonesia has made rapid progress in financial inclusion, where 48.9% of adults owned a bank account in 2018. The government, through the Otoritas Jasa Keuangan (OJK) and the National Center for Financial Inclusion, has promoted financial inclusion as a key to economic development and equitable access to the digital economy. In 2018, OJK created a favorable environment for fintech innovation through:

- Formation of Infinity, a digital financial innovation center to foster a friendly fintech ecosystem.
- Revised National Strategy on Indonesian Financial Literacy in 2017, which aims to raise national financial literacy and inclusion, including accelerating insurance inclusion.

## Potential Fintech Partners and Avenues

***Health Innovation Regulatory Sandbox:*** This is being developed as a space for biotech and healthtech startups where innovations can be piloted in a monitored environment by regulators.

***PasarPolis:*** Leverages its distribution partners and agents to enable companies to distribute and democratize innovative health insurance products that supplement JKN. It has partnered over 30 insurance providers and sold policies to over 35 million customers.

***OVO:*** OVO is Indonesia's largest digital wallet and financial services platform with a user base that spans all the provinces and has over 110 million people spread across 300 Indonesian cities. PROTect care is an affordable insurance product provided by Prudential on the OVO app.

***Halodec:*** The app is built on the GoJek platform and integrates primary care services, insurance claims, e-pharmacy services, and healthcare with cashless visits. It works with over 20,000 doctors and more than 4,000 pharmacies and has 18 million monthly active users.

***Alodokter:*** With over 28 million active users, its platform connects over 30,000 doctors and 1,400 hospitals. It integrates a wide array of services around telemedicine, such as doctor booking, insurance services, digital healthcare content, e-pharmacy services, and delivery.

***Modalaku:*** Platform that enables businesses to lend and borrow money with customized terms, amounts, and repayment options. BPJS partnered with Modalku to provide digital loans to facilities that have partnered with BPJS. The solution helps reduce cash flow gaps as they await BPJS reimbursements.

# INDONESIA

## INSURANCE

Insurance companies can utilize the streamlined tech products and develop customized IPD and OPD products to cater to the newly developed and integrated platform for FASKES-I.

## PROVIDERS

Staff at FASKES-I will need to accommodate the new systems and utilize them for logistics, decision-making, and accountability support.

## INDIVIDUALS

People would need to avail the Health ID and eWallets that the system may provide them for ease of access and strengthening the referrals by improving longitudinal continuity of care.

## IMPROVING FRONTLINE SERVICE DELIVERY AND REFERRALS

## DIGITAL TECH TO STRENGTHEN FASKES-I AND PAVE THE WAY FOR CAPITATION-BASED MODELS

Management, decision-making and logistical, and innovative solutions for FASKES-I

## TECH STARTUPS

Fintech and Healthtech startups can utilise the sandbox to create and test innovations such as risk stratification or claims management system to help facilitate the move toward capitation models.

## GOVERNMENT

Health Innovation Regulatory Sandbox can be strengthened with Open APIs and channels that provide in-depth details on the needs of puskesmas to help healthtech and fintech test their innovations.

## FASKES-I

**PUSKESMAS / PRIVATE PRIMARY CLINICS**

### NEED

BPJS provides autonomy to FASKES-I and plans to move towards a capitation model. FASKES-I need to be efficiently run with a balance of services financed by BPJSKesehatan and the government budget.

FASKES-I include puskesmas and private clinics contracted by BPJS. They conduct two main activities: individual and public health efforts. The FASKES-I network provides six essential services:

1. ***Health promotion,***
2. ***Communicable disease control,***
3. ***Ambulatory care,***
4. ***Maternal and child health and family planning,***
5. ***Community nutrition, and***
6. ***Environmental health.***

FASKES-I are staffed by multi-professional teams, including GPs and dentists, nurses, midwives, pharmacists, public health personnel, nutritionists, physiotherapists, and laboratory analysts.

# Limitations and Considerations

The opportunities and challenges put forward in this report are suggested with the caveats of certain limitations of laws, regulations, systems, and behaviors of people. Stakeholders need to take into account the considerations made below and beyond them to create and scale impactful solutions in the domains of digital technologies and fintech.

## DATA PRIVACY AND PROTECTION:

Data protection requires a holistic approach to system design that incorporates a combination of legal, administrative, and technical safeguards.

- Due to the large amount of personal and medical data being managed by public and private entities, governments need to update their data privacy and protection laws to the most feasible and secure standards.
- Individuals and organizations need to be cognizant of user access and data-related permissions that are provided while making use of fintech and digital technologies.
- Governments would need to enable secure and protected channels and interfaces for data interoperability and could consider using blockchain technology for the same.
- Stakeholders should cooperate with the government and work together to improve data privacy and security measures while and beyond being a part of the sandboxes.

## CONFIDENTIALITY AND CONSENT

- All the stakeholders need to be informed and made aware of the processes and mechanisms which involve any exchange of information or data.
- Concepts such as confidentiality and consent related to data sharing and utilization need to be clarified with the stakeholders.
- Strict guidelines and laws related to confidentiality of data and information with specific directions on regulating and penalizing the misuse and violation of the same.

## REGULATORY CHALLENGES

- Some of the solutions envisaged may be beyond the scope of available regulations across various geographies identified in the report.
- Dialogue with the regulatory authorities on the feasibility of the solutions being envisaged for specific geographies and demographics would be critical.
- The functioning of sandboxes across the countries may vary, and determining their practices and scope would be crucial to utilize them successfully.

## LACK OF LOCALIZED RESEARCH FOR SOLUTION CREATION

- Stakeholders need to undertake localized research and assessment of the niche populations such as blue-collar workers, gig workers, migrants, farmers, refugees, teenagers and school children, informal workers-construction, laborers, etc. while defining a fintech solution for these groups.
- Customization of solutions for niche populations and cultural groups would require further research, localization, and investments.

## GENERAL CONSIDERATIONS

- Higher use of digital technologies and, more specifically, social media has resulted in widespread mental health and other health-related issues in the populations.[37] Considerations to prevent further spread of these through the solutions would be helpful.
- Digital technologies and fintech solutions in the wrong hands could be used to spread discrimination and hate towards various groups. The use of artificial intelligence to create solutions such as risk scores, screening results, risk pools, and groups for insurance may lack the tenets of age, race, or ethnic considerations necessary to prevent the social or financial exploitation of any groups. Recently, the pulse oximeter scandal, where the pulse oximeters were less accurate for people with darker skin, has resulted in a racial bias review in technologies.[38] Considerations for preventing such issues from the use of fintech are instrumental to ensuring a safe and secure digital ecosystem for all.

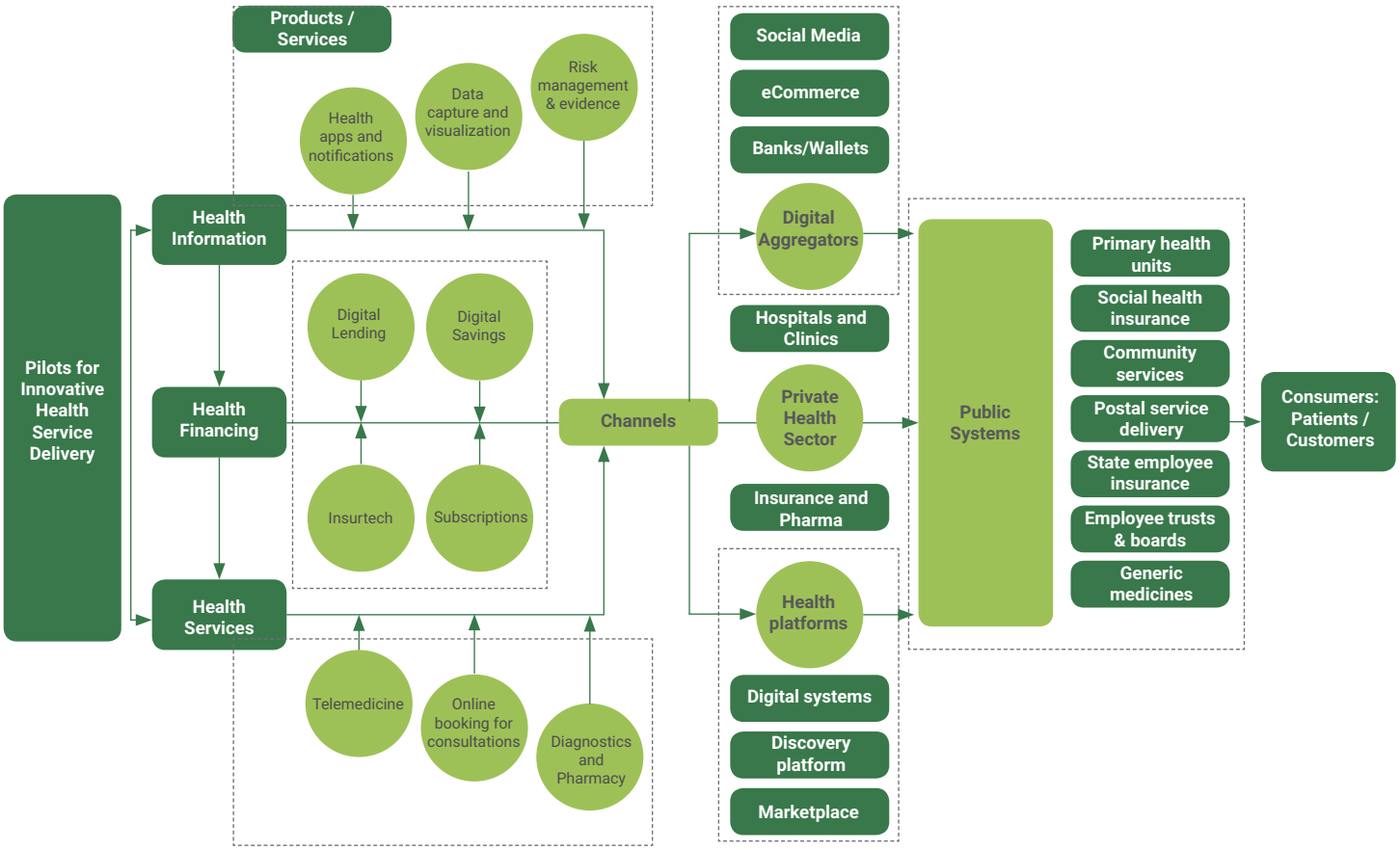
[37] *https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7364393/*

[38] *https://theconversation.com/artificial-intelligence-can-discriminate-on-the-basis-of-race-and-gender-and-also-age-173617*

# Conclusion

Analysis of information gathered through in-depth secondary research and interviews with experts and stakeholders provides an optimistic view of the fintech innovations in primary healthcare across Asia. The research findings show a varying scope of primary healthcare across geographies. While this may create a challenge for vertical health programs looking to use primary healthcare, digital innovations and fintech benefit from the same. As the report captures a variety of solutions from different geographies, it also provides avenues for ideation, creation, pilot, and scale of fintech solutions in primary healthcare.

The scope of this report goes beyond suggesting a set of solutions for each stakeholder to implement and test innovative fintech solutions for primary healthcare. The report aims to become an enabler of solution creation and development to ensure financial inclusion and make primary healthcare accessible, healthcare affordable, and health systems resilient. Through all its components, the report is designed to help each identified stakeholder – governments, fintech companies, insurance companies, healthcare providers, development partners, and investors create, scale, and use fintech solutions.




The report suggests a multi-dimensional approach to design fintech for health pilots through collaboration and partnerships on various levels. The approach further contextualizes the report's framework where both the approach and the framework are devised from three Fintech for Health pillars – information, financing, and services.

- Connect start-ups, nonprofits, and companies' innovations and products from the health information, financing and services for pilots and projects.
- Utilize the channels such as digital aggregators, private health sector, and health platforms to deliver the innovations.
- Leverage the public systems to further deliver the innovations and expand the range of channels for the public sector.

The report envisions the stakeholders to create and scale solutions that are built on top of the building blocks of the report. This would be to acknowledge and make sure the enablers are in place while reducing the barriers and improving the ecosystem for integration between fintech and healthcare. Opportunities identified by the report across the defined intervention areas and geographies share common themes which could provide defined pathways for the involved stakeholders.

- Governments are suggested to develop a regulatory sandbox for healthcare innovations that can encompass the guidance and expertise of various ministries, including health and finance.
- Fintech companies can adopt a holistic approach to develop innovative solutions for the entire healthcare value chain. The startups need to leverage partnerships to design and pilot health programs that help experiment and scale solutions.
- Insurance companies can work with social health insurance providers to explore mechanisms such as co-payments in the form of complementary products and disease-specific or outpatient care-specific supplementary products. This would enable the creation of affordable and low-cost products covering inpatient and outpatient care services.
- Healthcare providers, both public and private, can use health tech and fintech platforms such as tele-medicine, digital payments, and explore alternative credit (Micro Credit) to design products that improve access and affordability of care for their patients. Community health workers including frontline workers can leverage digital payments to receive timely payments and incentives for their services.
- Development partners and investors can identify high scalability, high-impact solutions and help support them not only through capital and funding but also through meaningful partnerships and collaborations with the government and other stakeholders, including the private sector, using blended financing models.

**These pathways provide opportunities for knowledge exchange and sharing across stakeholder groups and geographies through initiatives such as roundtable dialogues and cross-country study visits. This could make healthcare more affordable and accessible while populations become more financially included.**

# Appendix 1

## FINTECH IN PRIMARY HEALTHCARE COMPARATIVE INDEX FOR ASIA

The table below showcases the indicators, their weightage, and the sources that helped develop the index.

| Index | Indicators | Weightage | Source |
|---|---|---|---|
| Primary Healthcare Focus | GGHE-D* Expenditure on PHC per capita in US$ | 20 | World Health Organization Health Expenditure Database |
| | GGHE-D per capita in US$ | 30 | World Health Organization Health Expenditure Database |
| | UHC: Service Coverage Index | 20 | World Bank Database |
| | PVT-D** per capita in US$ | 30 | World Health Organization Health Expenditure Database |

*GGHE-D: Domestic General Government Expenditure **PVT-D: Domestic Private Expenditure

The weightage was determined by consultations with public health and health financing experts where GGHE-D per capita in US$ and PVT-D per capita in US$ were used as direct indicators to determine the public and private sectors' abilities to spend on healthcare. GGHE-D on PHC and UHC Index were used as indirect factors emphasizing the existing primary healthcare trend in the respective country.

| Index | Indicators | Weightage | Source |
|---|---|---|---|
| Fintech Ecosystem Score | Financial Literacy Index | 30 | S&P Global FinLit Survey |
| | Ease of doing business rankings | 20 | World Bank Database |
| | Number of fintech startups | 20 | Tracxn |
| | Investments in Fintech | 30 | Statista |
| | Regulatory Sandbox | 15 | Respective government websites |

The weightage was determined throughout the interviews and consultations with market experts and regulators. Ease of doing business rankings and the number of fintech startups were considered complementary to each other, as well as slightly non-direct indicators relative to investments and financial literacy. The enabling nature of the regulatory sandboxes has been considered by providing an additional 15 points to countries with a conceptualized sandbox. These form the core elements of the fintech ecosystem – talent and investment, along with regulatory frameworks informed by the ease of doing business.

| Index | Indicators | Weightage | Source |
|---|---|---|---|
| Digital Technology Adaptability | Digital payments made or received | 20 | World Bank Database |
| | Bank account | 10 | World Bank: Global Financial Inclusion Database |
| | Mobile cellular subscriptions | 10 | World Bank Database |
| | Mobile Money Accounts | 20 | World Bank: Global Financial Inclusion Database |
| | Individuals using internet | 10 | World Bank Database |
| | Digital Literacy Index | 20 | Digital Skills Gap Index by Wiley |

The weightage was determined by consultations with experts and determining digital payments made or received, Mobile Money Accounts, and Digital Literacy Index as direct indicators of technology adaptation for fintech, while the rest of the indicators provides an indirect indication of the digital technology adaptation.

# Appendix 2: Country Profiles References

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