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By: Kailesh Mistry and Edwin Liu

SPOTLIGHT

Insurance meets Healthcare

From payer to payer, provider and risk influencer

Insurers are increasingly evolving from simply writing and servicing health policies to putting themselves at the centre of health and wellness ecosystems

This transition encompasses insurance, telemedicine, wellness and more to enhance the competitiveness of offerings, facilitate customer acquisition and retention as well as influencing and pricing risks

Ping An has developed a comprehensive health ecosystem for mainland China mainly in-house, while AIA and Pru are doing much the same across Asia but through partnerships or JVs

This is a redacted version of the report published on 12-Oct-20. Please contact your HSBC representative or email AskResearch@hsbc.com for information.

Why read this report?

- Health business models are moving away from simply being payers …
- … towards being payers, providers and risk influencers
- Ping An is ahead of peers in mainland China; AIA and Pru are in the process of developing similar propositions across Asia

Health insurance business models are evolving

Health and protection accounts for around a third of new business volumes and two-thirds of value for relatively higher-quality insurers. Historically, insurers have mainly been payers of health insurance (reimbursement of medical costs) and critical illness (pay-out linked to the diagnosis of a specified illness but not specifically tied to health expenditure) claims with the significant volume opportunity expressed by Asia's health protection gap (2.1x private and out-of-pocket expenditure) and Asia's mortality protection gap (0.8x total life new business volume). Insurers are moving towards being payers, providers and risk influencers to fully capture the opportunity, as well as reduce the risk of commoditisation and disintermediation by developing health and wellness ecosystems.

There are significant barriers to entry

These health and wellness ecosystems provide online and offline healthcare solutions with scope to cross-sell further insurance products that could generate higher NBV and/or other products and services leading to non-insurance revenues. We think entry barriers are significant, given the need to sign up qualified physicians, networks of healthcare providers, diagnostic capabilities and pharmacies, to integrate into online and offline services, which are in short supply across the region. In addition, the attractiveness of such propositions are underscored by the fact that at least 30% of consultations are expected to move online in the future.

Differing strategies

Ping An has developed a comprehensive health ecosystem mostly in-house at both the business unit and technological levels; it provides online and offline services to patients, payers, providers and governments. Meanwhile, AIA and Pru are developing similar health and wellness ecosystems across Asia but through partnerships and/or joint ventures customised by market with the aim of providing services to patients, providers and payers.

Healthcare systems in markets across Asia

We also provide a primer on healthcare spending and systems across selected markets in Asia. We consider the mix of public, private and out-of-pocket expenditure, the scope of telemedicine regulations as well as public and private healthcare provision in mainland China, Hong Kong, India, Singapore, South Korea and Taiwan.

Contents

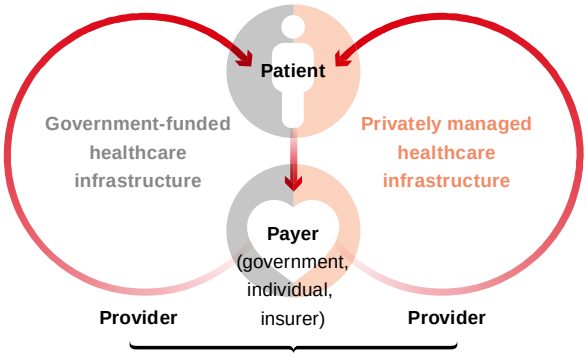
This is a redacted version of the report published on 12-Oct-20. To access the full note, including company sections on Ping An, AIA and Prudential, and a look at healthcare systems by market in mainland China, Hong Kong, India, Singapore, South Korea and Taiwan, please contact your HSBC representative or email AskResearch@hsbc.com.

We acknowledge the contribution of Akshay Narang and Allen Chen to this report. Akshay Narang and Allen Chen are employed by a non-US affiliate of HSBC Securities (USA) Inc. and are not registered/qualified pursuant to FINRA regulations.

Insurers moving from payer to payer, provider and risk influencer

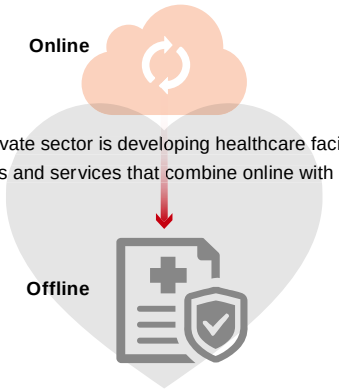
Structure of healthcare systems

Patient accesses healthcare typically through public sector; patient has option to upgrade public sector facilities, services and treatments using private insurance proceeds or out-of-pocket spending



A mixture of public and private sector payers and providers

Online and offline healthcare

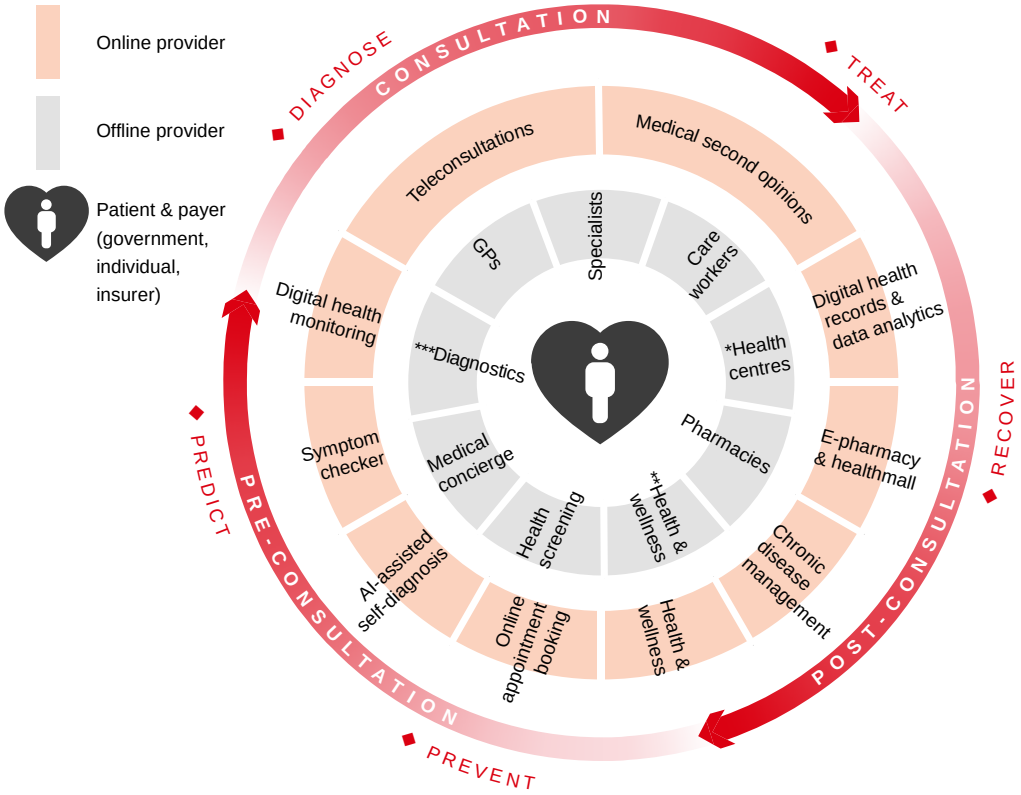


The private sector is developing healthcare facilities, products and services that combine online with offline

The health system benefits from more effective health outcomes as online options reduce the burden on resource-constrained offline facilities

Health and wellness ecosystem strategy

Health and wellness models are evolving to make propositions more attractive for patients, payers and providers. These are increasingly served by a combination of online and offline resources to deliver better health outcomes as well as supporting customer acquisition, engagement and retention which could help drive additional business volumes



Source: HSBC *Clinics, hospitals, rehabilitation centres, surgeries, treatment centres; **Wearables, fitness programmes, nutrition; ***MRI, ultrasound, X-ray

Executive summary

We are increasingly seeing insurers evolving from simply writing and servicing health insurance policies towards integrating themselves into broader health and wellness ecosystems. This evolution encompasses insurance, telemedicine, wellness and other more traditional healthcare services to deliver better health outcomes by facilitating better customer acquisition, engagement and retention, as well as influencing risks. Ping An has been an early mover with a comprehensive health ecosystem developed mainly in-house, while AIA and Prudential Asia are building health and wellness platforms through partnerships and/or joint ventures.

In this report we examine how insurer business models are evolving from simply writing and servicing insurance policies towards integrating themselves into broader health and wellness ecosystems to support better health outcomes. Such propositions should allow insurers to improve competitiveness to facilitate customer acquisition, engagement and retention, as well as influencing risks, potentially supporting higher NBV and non-insurance earnings. Moreover, as confidence in such propositions grows, we believe this evolution will also help further increase the penetration of health and protection products where the opportunity is primarily measured by the sizeable health protection gap and the mortality protection gap. Readers should note that we do not seek to assess how this might impact revenues of clinics, hospitals, pharmacies and other industry participants or the accuracy and/or sophistication of the technology solutions.

Health insurance business models are evolving

Insurers have historically written health insurance policies in both life and P&C business lines. We are now seeing insurers in Asia complementing this by developing health and wellness ecosystems. This involves moving the traditional health insurance business model away from being simply a payer of healthcare costs through insurance products towards one where insurers are payers and providers of health products and/or services, as well as being risk influencers through private sector provisions, although greater integration with the public sector cannot be ruled out. Insurers are focussing on this space to avoid commoditisation and disintermediation, as well as to improve customer acquisition, engagement and retention, to support higher life NBV and non-insurance revenues. This development should also benefit from a growing proportion of medical services (including consultations) being available online. For instance, Ping An believes online consultations could eventually reach 30% of total consultations, from low-single-digit now, while Oliver Wyman suggests this could be between 30% and 50%.

We believe this is particularly important in Asia where there is limited high-quality public healthcare available, as a well as a shortage of healthcare resources and actuarial data to aid risk pricing. For instance, total healthcare expenditure across Asia ex Japan represents 4.7% of GDP, having increased 12% pa between 2010 and 2017 (in local currency terms); however, Swiss Re Institute estimates Asia's health protection gap was USD1.8 trillion in 2017 and Asia's mortality protection gap was USD83 trillion in 2019 translating into 2.1x the current level of private sector health spending and 0.8x the current level of the aggregate life industry new business volumes respectively. In addition, the integration of health ecosystems into traditional business models should support increasingly important ESG and sustainability goals such as positive externalities of a healthier population, more effective health expenditure and supporting financial inclusion.

Ping An has been an early mover

Ping An's health ecosystem has been mostly developed in-house, at both the business unit and technology capabilities levels. Management believe there are three key synergies within Ping An's health ecosystem across (i) insurance and healthcare; (ii) patients, payers and providers; and (iii) the government and technology users. Ping An is mainly focused on mainland China's sizeable market where government policy indicates total healthcare expenditure will rise to RMB16 trillion in 2030 from RMB6 trillion in 2019, implying a 9.3% CAGR.

Health-related products and services are provided by insurance subsidiaries (life, health, and annuity), Ping An Good Doctor, Ping An HealthKonnect, Smart Healthcare, Hospital Management Team, Healthcare Technology Research Institute, Toda Bio-research, as well as investment entities (Voyager Global Fund, Ping An Ventures and Ping An Overseas Holdings). Ping An has developed and integrated its own technological capabilities into operations using artificial intelligence, blockchain, cloud, and big data. Ping An still owns a sizeable proportion of the economics of its entire health ecosystem, but ownership, where disclosed, is generally below 50%.

AIA and Pru's health models are evolving

Meanwhile, AIA and Prudential have also been working to construct health and wellness ecosystems to complement their core life insurance and savings proposition through AIA's Health and Wellness Ecosystem and Pulse by Prudential, respectively. The main differences of AIA and Prudential's progress and strategy versus Ping An is that (i) AIA and Prudential started significantly later in their health ecosystem development; (ii) progress has been mainly through a combination of investments, joint ventures and partnerships rather than development of services in-house; and (iii) the health and wellness propositions for AIA and Prudential need to be tailored to local regulations, languages and customs in the markets across Asia in which the companies operate. Although Ping An operates in the sizeable mainland China market, it is worth bearing in mind that there are variations in how the healthcare system works at the local level.

There are significant barriers to entry

In our view, the development of successful health ecosystems is likely to require qualified doctors, networks of quality hospitals, clinics, diagnostic facilities and pharmacies, providers of effective remote consultations, wellness propositions, rules for use of customer data and managing technology security risks – all of which will need to navigate different healthcare systems across Asia. There are a limited, albeit growing, number of such providers that insurers may be able to partner with, so early mover advantages and scale benefits should be sizeable.

Equally, early movers are likely to accumulate more data that is potentially more granular and integrated into improving the overall health ecosystem over time through artificial intelligence, big data, internet of things and machine learning as well as potentially being able to price risks more effectively, given data advantages, to attract customers.

The protection and health opportunity

- Health and protection accounts for around a third of new business volumes – but approximately two-thirds of value – across Asia ex-Japan; health insurance is c10% of overall premiums and rose 26% pa over the past five years
- Further significant growth is expected with the health protection gap equivalent to 2.1x of current healthcare expenditure and mortality protection gap 0.8x of life industry new business premiums
- Ageing populations, increasing urbanisation, and high medical cost inflation are additional drivers with both health insurance and critical illness policies used to complement government cover

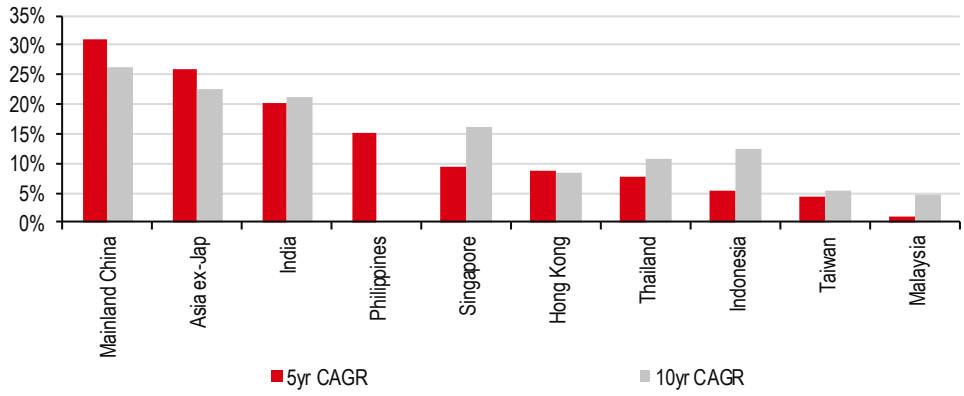
In this section, we review the scale of the health and protection opportunity in Asia ex Japan. We consider the health protection gap, the mortality protection gap and the existing healthcare spending in the region. In the following sections, we consider healthcare systems across the region and associated traditional insurance business models, as well as emerging health and wellness ecosystems with case studies on the ecosystems developed by Ping An, AIA and Prudential Asia.

A sizeable opportunity

- The combined health and protection opportunity remains sizeable, despite Asia ex Japan's health insurance premiums rising above healthcare spending at 26% per annum over the past five years. Countries with lower insurance penetration rates typically have higher health protection and mortality protection gaps as shown in Exhibits 2-4. We think it is relevant to look at both since health insurance policies and riders are purchased to cover only healthcare requirements and account for c10% of industry premiums in Asia ex Japan. Meanwhile, critical illness which represents around a third of Asia ex-Japan life premiums has a broader use as it is not tied to specific expenditure but to cover income replacement and unforeseen events (including healthcare). One or both policies and riders tend to be attached to life savings products and represents a key opportunity for life businesses.
- Swiss Re estimates Asia's health protection gap was USD1.8 trillion in 2017 and Asia's mortality protection gap was USD83 trillion in 2019. The health protection gap is equivalent to 2.1x the current level of private health and out-of-pocket expenditure combined in Asia ex Japan, while the mortality protection gap is equivalent to 0.8x the current level of the aggregate life (savings, health and protection) industry's new business premiums in Asia.

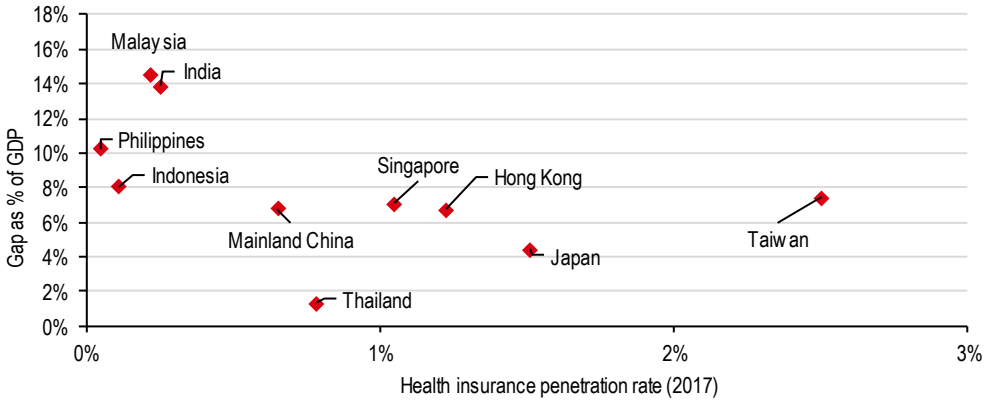
- There is likely to be further upward pressure on healthcare spending with higher healthcare cost, driven by ageing populations, increasing urbanisation, and medical cost inflation above general inflation levels. Moreover, historically lower healthcare spending in Asia ex Japan has translated into lower levels of healthcare resources than in G7 economies.
- Asia ex-Japan healthcare expenditure was 4.7% of GDP compared with a G7 average of 11.4% of GDP in 2017. Asia ex-Japan healthcare expenditure per capita ranged from USD69 to USD2,600 compared with the G7 from USD2,800 to USD10,200 in 2017. Total health spending (the sum of public, private insurance and out-of-pocket) for Asia ex-Japan increased c12% pa vs the G7 at mid-single digit, local currency terms over 2000-17.
- Asia ex-Japan out-of-pocket healthcare expenditure was 37% and private insurance expenditure c16% compared with 14% for both in the G7 in 2017. Out-of-pocket spending grew 10% pa over 2000-17 and 8% pa over 2010-17, while private insurance expenditure grew 11% pa and 9% pa, respectively. This remains the key focus of additional life new business growth with the ultimate aim to reduce the burden of out of pocket spending.
- The public sector represented an average of 46% of healthcare costs in Asia ex Japan versus an average of 72% for the G7 in 2017. Asia ex Japan government spending on healthcare increased 14% pa over 2000-17 and 12% pa over 2010-17, in local currency terms.

Exhibit 1: Asia ex Japan health insurance premiums – historic growth rates



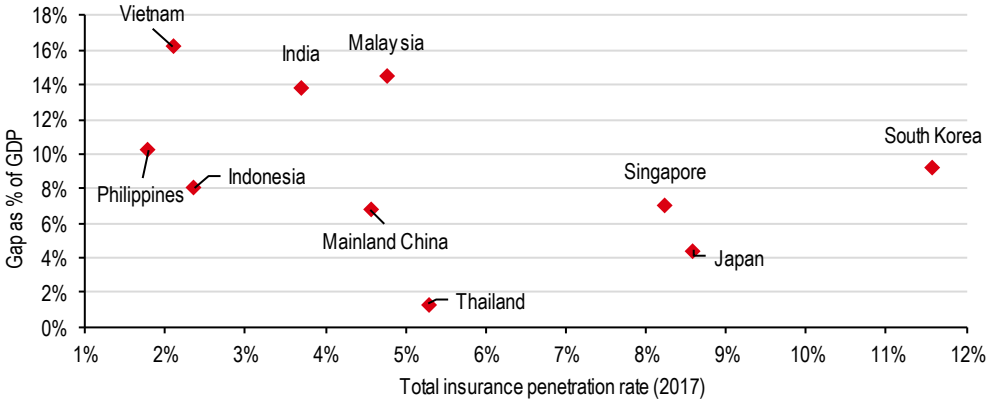
Note: Premiums include accident and health business from both life and P&C companies; Indonesia and Thailand's latest numbers are 2018; Malaysia is for P&C insurers only; Philippines and Singapore from life insurers only.
Source: Country regulators and insurance associations, HSBC

Exhibit 2: Health insurance penetration rate vs health protection gap as a percentage of GDP in selected Asia markets, 2017



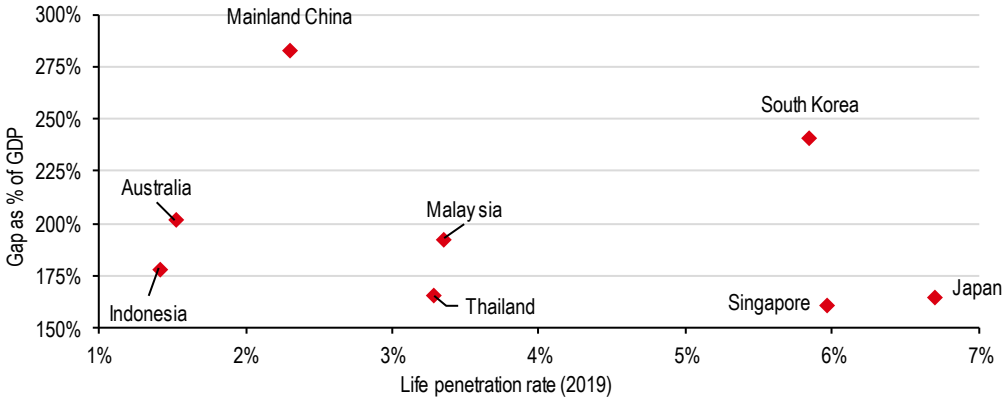
Note: South Korea: 9.2% gap as a percentage of GDP and health insurance penetration not available; Vietnam: 16.2% gap as a percentage of GDP and health insurance penetration not available.
Source: Swiss Re Sigma Health Protection Gap 2018, Swiss Re Sigma No. 3/2018

Exhibit 3: Insurance penetration rate vs health protection gap as a percentage of GDP in selected Asia markets, 2017



Note: Hong Kong: 17.9% insurance penetration rate and 6.7% gap as a percentage of GDP; Taiwan: 21.3% insurance penetration rate and 7.4% gap as a percentage of GDP.
Source: Swiss Re Sigma Health Protection Gap 2018, Swiss Re Sigma No. 3/2018

Exhibit 4: Life penetration rate vs mortality protection gap as a percentage of GDP in selected Asia markets, 2019



Note: Hong Kong: 18.3% life penetration rate and 109% gap; India: 2.8% life penetration rate and 584% gap.
Source: Swiss Re Sigma Mortality Protection Gap 2020, Swiss Re Sigma No. 4/2020

Health and mortality protection gap remains sizeable

Health protection gap

The health protection gap is defined as the potential stress households are exposed to due to unpredictable medical expenses. It has two components:

- Financial shortfall to cover current and future medical expenses – this relates to medical costs not covered by the government or private insurance
- Cost of non-treatment – this is difficult to measure but is largely a function of a lack of affordability and/or accessibility

The health protection gap remains sizeable, despite 26% and 23% pa growth in health insurance premiums over the past five and 10 years, respectively. Swiss Re Institute estimates the health protection gap was USD1.8 trillion or 7.4% of GDP in Asia in 2017[1], consisting of USD1.4 trillion or 8.1% of GDP in emerging Asia and USD0.4 trillion or 5.9% of GDP in developed Asia[2].

The health protection gap is most sizeable in mainland China and India in absolute terms but also in Malaysia, Vietnam and India as a proportion of GDP – see Exhibit 5. Moreover, the health protection gap per household is highest in Singapore, Hong Kong and Korea, highlighting high healthcare costs. The health protection gap equates to 1.4-8.3x the current level of private health and out-of-pocket expenditure combined with it being the most significant in ASEAN but relatively less material in mainland China, Hong Kong and Taiwan.

We believe the health protection gap will continue to grow due to factors such as ageing, rising healthcare costs, increasing urbanisation (lower reliance on family networks) and changing lifestyles, particularly since insurance penetration remains low.

The role of insurers in closing the gap

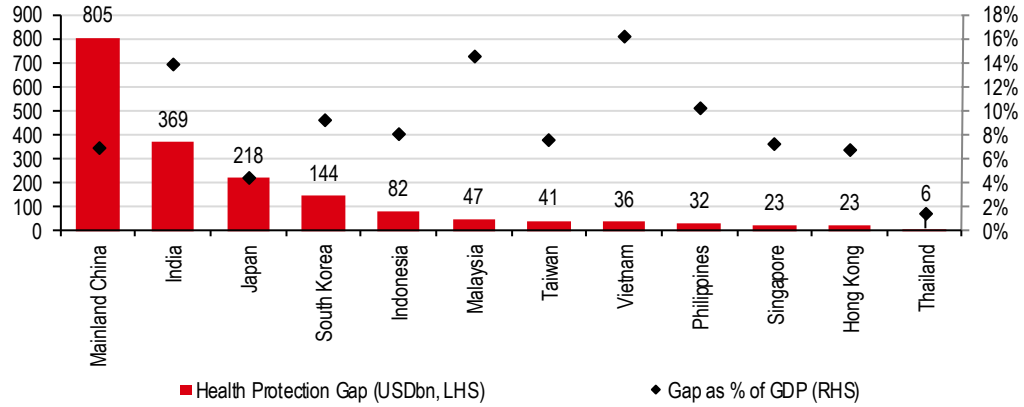
In our view, the size of the health protection gap leaves significant potential for insurance products and services to be developed independently by the private sector and/or in partnership with governments to encourage private sector participation. Historically, the role of insurers has been to offer products that pay-out upon diagnosis of illness, which in many cases involved insurers partnering with medical networks to limit fraud and control claims costs, but this may not provide policyholders with choice, desired treatments, and quality.

In recent years, this has extended into a broader product and services ecosystem offering. We discuss such developments in greater detail in the following section; however, at the macro level, these should help support a reduction in the health protection gap by potentially:

- Developing more appropriate products and services,
- Improving accessibility through increasing healthcare supply with online complementing often stretched offline channels,
- Improving affordability, especially for out-patient services, and
- Reducing the risk of illness through health awareness and wellness programmes.

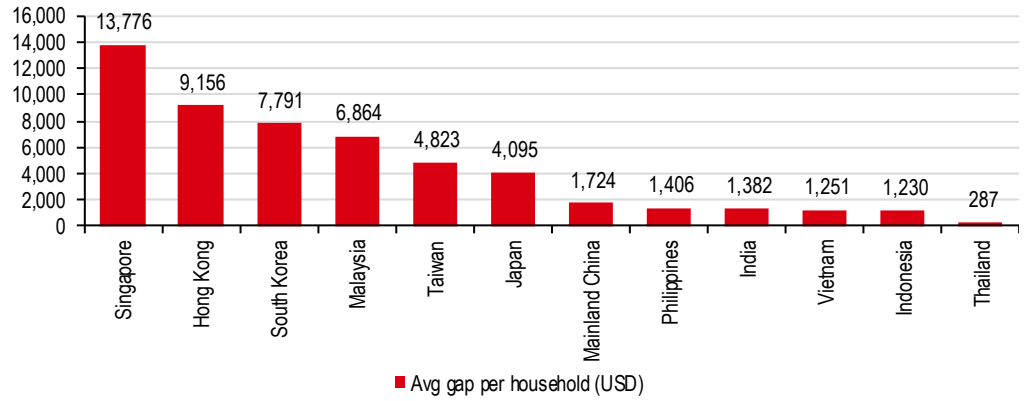
1 Swiss Re Institute: Asia Health Protection Gap: Insights for building greater resilience, October 2018.
2 Emerging Asia is defined as mainland China, India, Indonesia, Malaysia, the Philippines, Taiwan, Thailand and Vietnam. Mature Asia is Hong Kong, Japan, Singapore, South Korea and Taiwan, which are consistent with Swiss Re Institute's 2018 Health Protection Gap Study.

Exhibit 5: 2017 Asia health protection gap, by market



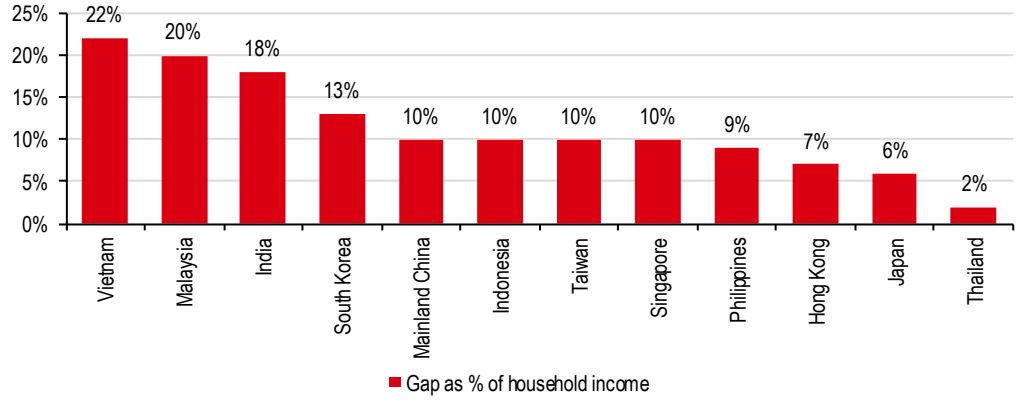
Source: Swiss Re Sigma Health Protection Gap 2018, Swiss Re Sigma No. 3/2018

Exhibit 6: 2017 Asia health protection gap per household, by market



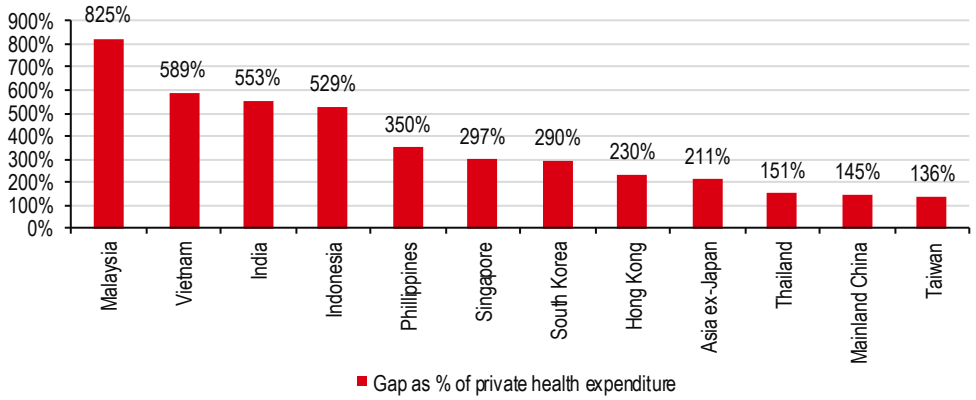
Source: Swiss Re Sigma Health Protection Gap 2018

Exhibit 7: 2017 Asia health protection gap as a % of household income, by market



Source: Swiss Re Sigma Health Protection Gap 2018

Exhibit 8: 2017 Asia health protection gap as a % of private health expenditure, by market



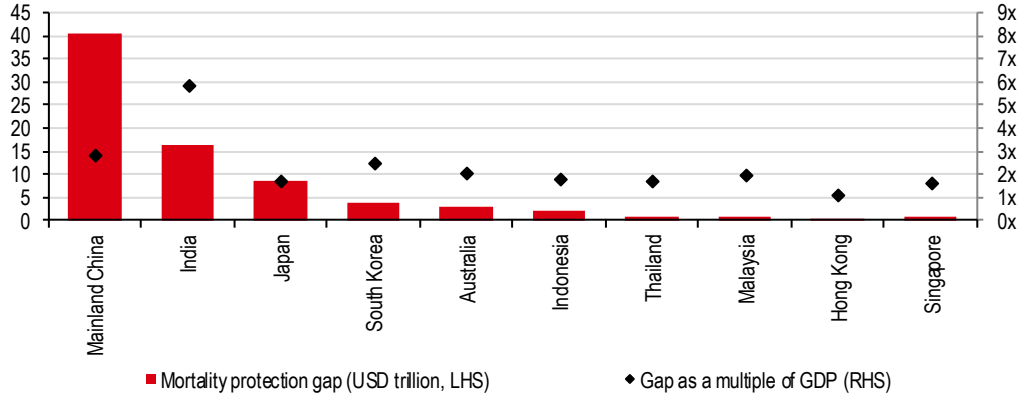
Source: Swiss Re Sigma Health Protection Gap 2018, WHO, HSBC

Health protection gap vs mortality protection gap

The health protection gap is defined as the potential stress households are exposed to due to unpredictable medical expenses, while the mortality protection gap is a household's lack of financial resources to maintain living standards should the main income earner(s) die. The 2017 Asia health protection gap was USD1.8 trillion or 7.4% of GDP, while, the 2019 Asia[3] mortality protection gap was estimated at USD83 trillion, which may translate into USD292bn in annual premiums, according to the Swiss Re Institute. The upside to industry premiums is summarised in Exhibit 10 with India, Indonesia and mainland China having the most upside potential, in our view.

We believe the opportunities from a lack of health and mortality coverage are complementary. First, markets with high health protection gaps also have high mortality protection gaps and low insurance penetration rates – see Exhibits 2-4. Second, Asia's insurance company product offerings tend to bundle and/or offer customers to buy a combination of savings, life protection and medical cover with policyholders also potentially using critical illness products to fund medical expenses, given less onerous restrictions on the use of payouts (vs health insurance).

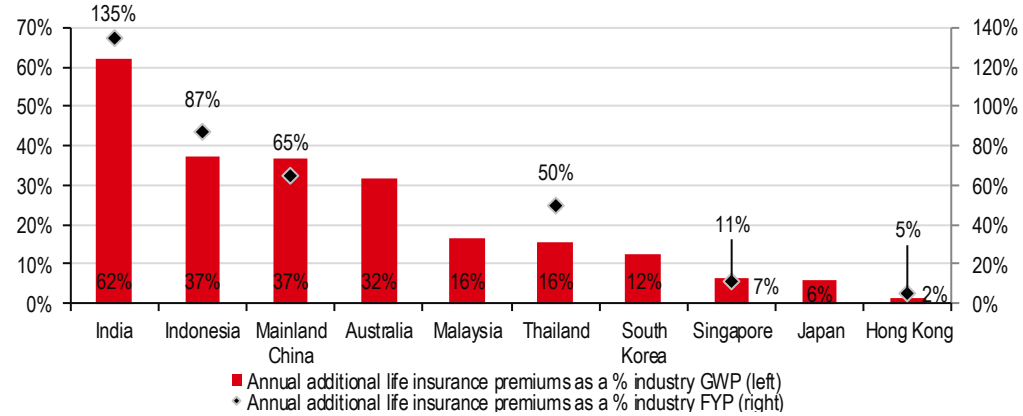
Exhibit 9: 2019 Asia mortality protection gap, by market



Source: Swiss Re Sigma Mortality Protection Gap 2020, Swiss Re Sigma No. 4/2020

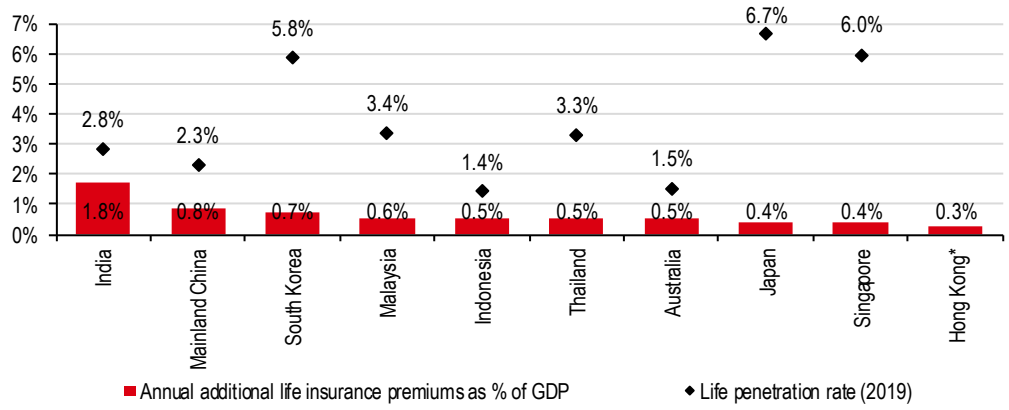
3 Swiss Re Institute: Closing Asia's mortality protection gap defines Asia slightly differently as mainland China, Hong Kong, India, Japan, Indonesia, Malaysia, Singapore, South Korea, Thailand and Australia.

Exhibit 10: 2019 annual additional life insurance premiums as a % of life industry GWP and FYP



Source: Swiss Re Sigma Mortality Protection Gap 2020, Swiss Re Sigma No. 4/2020, country regulators, life and non-life associations

Exhibit 11: 2019 annual additional life insurance premiums as a % of GDP compared with 2019 life penetration rate



Source: Swiss Re Sigma Mortality Protection Gap 2020, Swiss Re Sigma No. 4/2020. Note: Hong Kong life penetration rate is 18.3%.

Asia healthcare expenditure in a global context

Asia ex-Japan total healthcare expenditure totaled USD1.1 trillion, which is the equivalent of 4.7% of GDP or USD69-2,619 per capita in 2017 after a 14% CAGR over 2000-17 on a local currency basis, according to data from the World Health Organisation (WHO). This is lower than healthcare expenditure in developed economies, where the G7 average for healthcare expenditure as a proportion of GDP was 11.4% and USD2,840-10,246 per capita in 2017.

South Korea (7.6%), mainland China (6.4%) and Vietnam (5.5%) spent the most, while Indonesia (3.0%) spent the least as a percentage of GDP in 2017. In per capita terms, Singapore (USD2,619) and South Korea (USD2,283) spent the most with mainland China (USD560) a long way behind in third, India (USD69) and Indonesia (USD115) spent the least.

On a local currency basis, total healthcare expenditure increased at the highest rate in Indonesia (17%), Vietnam (16%) and mainland China (14%) over 2000-17, while total healthcare expenditure increased at the highest rate in mainland China (14%), the Philippines (10%) and Singapore (10%) over 2014-17.

Total healthcare expenditure in Asia ex Japan can be split as follows (see Exhibits 12-19):

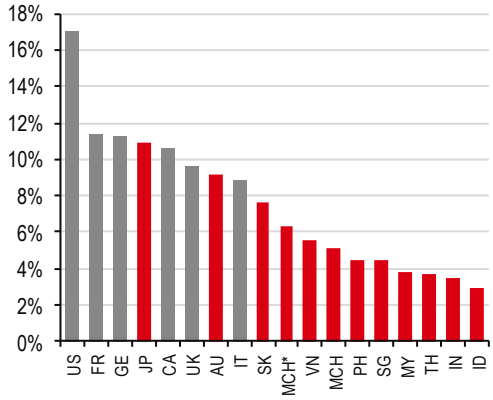
- 46% of spending is from the government with contributions as a proportion of overall healthcare spending most significant in Thailand (76%) and South Korea (57%), and least significant in India (27%) and mainland China (29%), which are below the average of 74% in G7 economies.
- 53% of total healthcare expenditure is from private expenditure. This covers expenditure provided by households, corporations and non-profit organisations, including private health insurance schemes and out-of-pocket expenditure (i.e. paid by individuals to healthcare providers due to under-coverage, desire to upgrade treatment plans, policy deductibles and/or co-insurance arrangements). Health insurance premiums increased 26% per annum in Asia ex-Japan over the past five years with over 20% pa growth in mainland China and India but only 1% pa in Malaysia.
    - Out-of-pocket spending averages 37% of healthcare expenditure across Asia ex Japan, with out-of-pocket spending highest in India (62%), the Philippines (53%) and Vietnam (45%) and lowest in Thailand (11%) and mainland China (29%). It has increased 10% pa in 2000-17.
    - Private insurance spending averages 16% of healthcare expenditure across Asia ex Japan with mainland China (42%), Singapore (20%) and Indonesia (17%) the highest, rising 11% pa over 2000-17.
- External healthcare expenditure (funding from foreign transfers) is a small contributor.

The opportunity for the insurance sector is mainly through private healthcare expenditure – insurance and out-of-pocket expenditure. In our view, the opportunity is twofold:

- How can insurers encourage individuals to spend on health insurance to reduce risks from high out-of-pocket expenditures currently incurred by individuals due to under-coverage, desire to upgrade treatment plans, policy deductibles and/or co-insurance arrangements.
- How can insurers make health insurance products and services more attractive and less commoditised to attract higher contributions (through private or social insurance premiums).

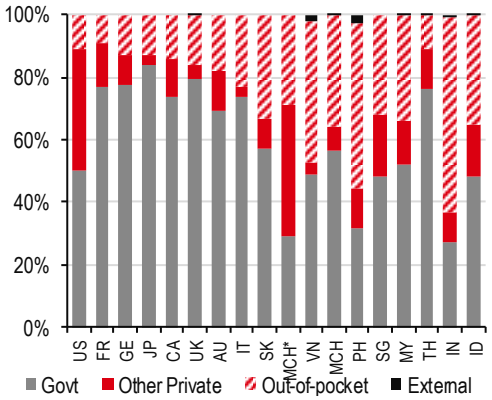
Healthcare expenditure as a % of GDP in selected markets

Exhibit 12: Total healthcare expenditure as % of GDP, 2017



*Mainland China (MCH) from the National Health Commission
Key: US = USA, FR = France, GE = Germany, JP = Japan, CA = Canada, UK = United Kingdom, AU = Australia, IT = Italy, SK = South Korea, VN = Vietnam, MCH = Mainland China, PH = Philippines, SG = Singapore, MY = Malaysia, TH = Thailand, IN = India, ID = Indonesia
Source: WHO

Exhibit 13: Breakdown of total healthcare expenditure as a % of GDP, 2017



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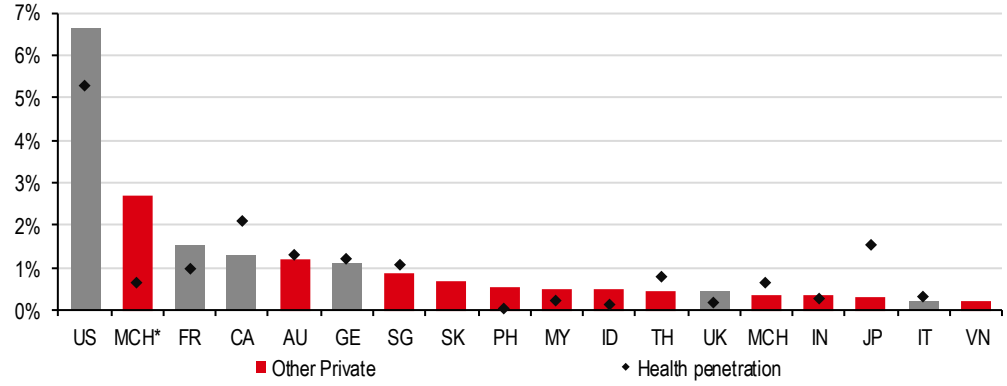
Source: WHO

Exhibit 14: Other private healthcare expenditure as a % of GDP vs health insurance penetration rate, 2017



*Mainland China (MCH) from the National Health Commission
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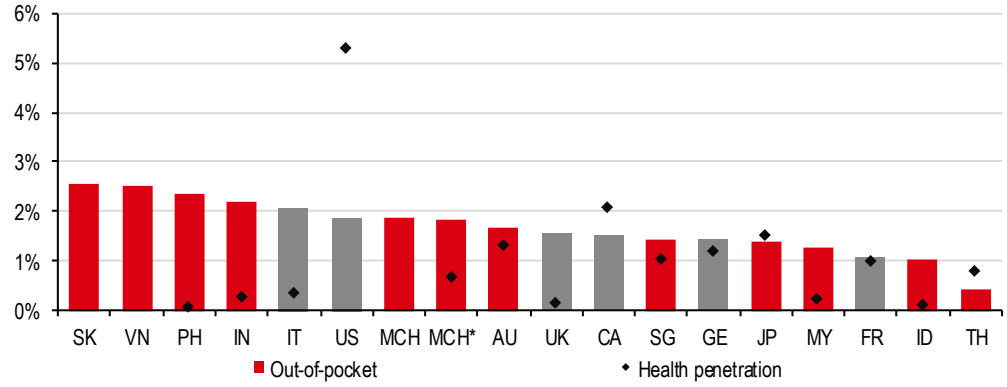
Source: WHO, country regulators, life and non-life associations

Exhibit 15: Out-of-pocket healthcare expenditure as a % of GDP vs health insurance penetration rate, 2017

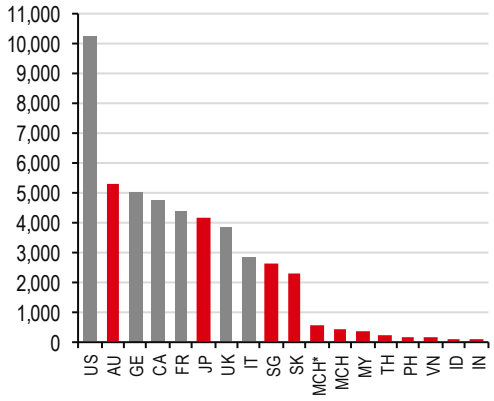


*Mainland China (MCH) from the National Health Commission
Key: US = USA, FR = France, GE = Germany, JP = Japan, CA = Canada, UK = United Kingdom, AU = Australia, IT = Italy, SK = South Korea, VN = Vietnam, MCH = Mainland China, PH = Philippines, SG = Singapore, MY = Malaysia, TH = Thailand, IN = India, ID = Indonesia
Source: WHO, country regulators, life and non-life associations

Note: We calculate the health insurance penetration rate by identifying premiums attributable to health in individual country life and P&C industry data as a proportion of GDP.

Healthcare expenditure per capita in selected markets

Exhibit 16: Total healthcare expenditure per capita (USD), 2017



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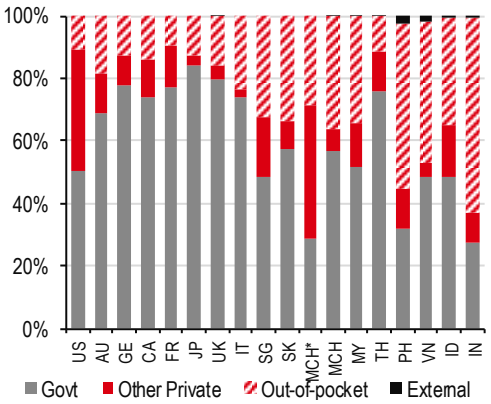
Source: WHO

Exhibit 17: Breakdown of total healthcare expenditure per capita (USD), 2017



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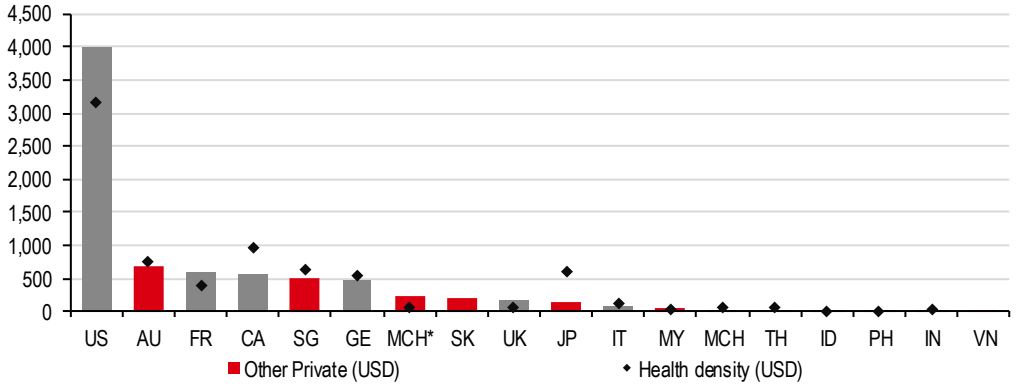
Source: WHO

Exhibit 18: Other private healthcare expenditure per capita vs health insurance density, 2017



*Mainland China (MCH) from the National Health Commission
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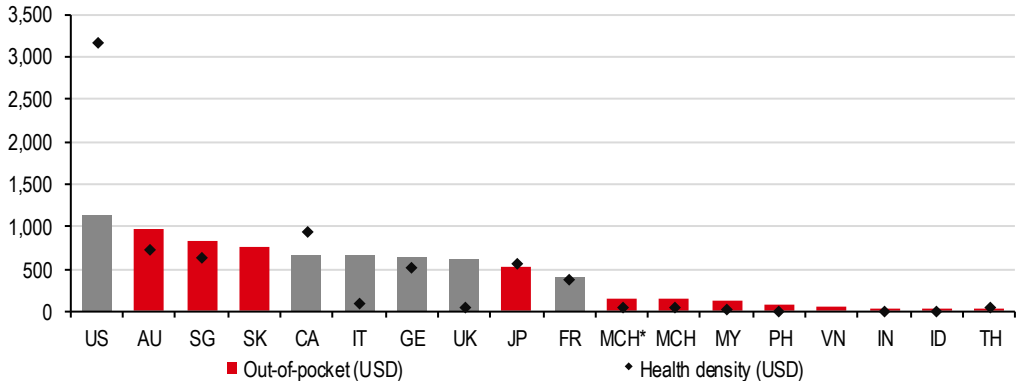
Source: WHO, country regulators, life and non-life associations

Exhibit 19: Out-of-pocket healthcare expenditure per capita vs health insurance density, 2017



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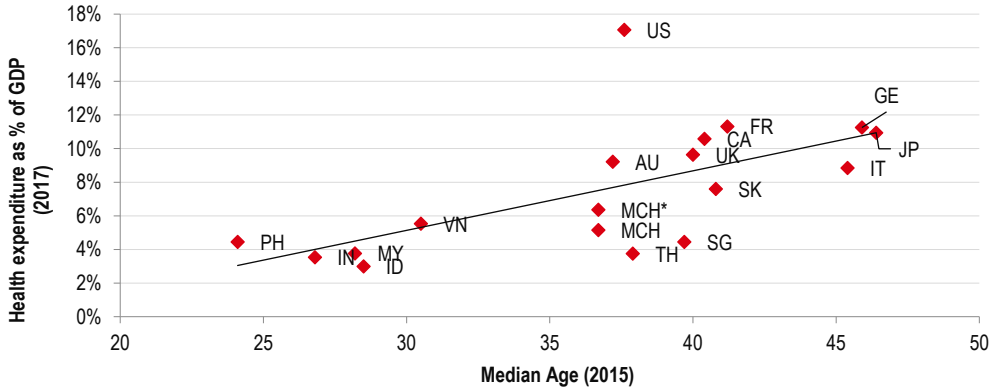
Source: WHO, Country regulators, life and non-life associations

Note: We calculate health insurance density by identifying premiums attributable to health in individual country life and P&C industry data per capita.

Healthcare cost to continue rising as the population ages …

Moreover, healthcare cost is likely to continue rising as the population ages, despite the 14% per annum healthcare spending growth in local currency terms in 2000-17. Exhibit 20 shows the positive correlation that exists between healthcare cost as a proportion of GDP and median age.

Exhibit 20: Healthcare expenditure as a percentage of GDP vs median population age

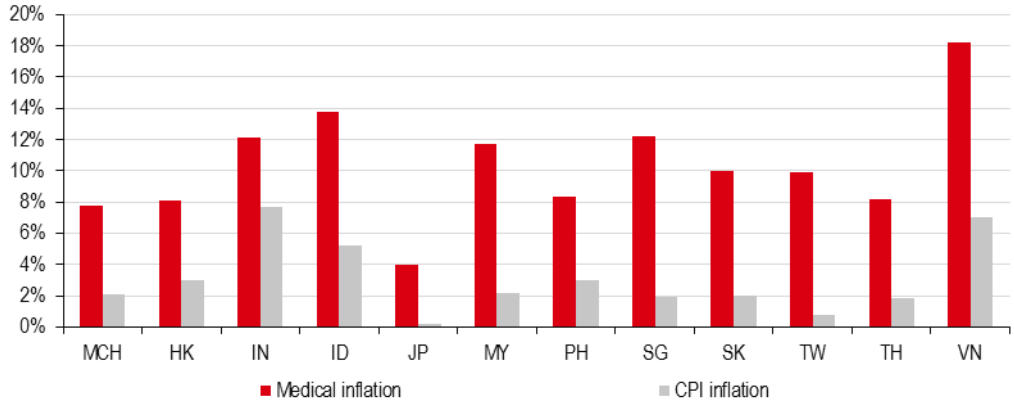


*Mainland China (MCH) data from National Health Commission
Key: PH = Philippines, IN = India, MY = Malaysia, ID = Indonesia, VN = Vietnam, MCH = Mainland China, AU = Australia, TH = Thailand, US = USA, SG = Singapore, UK = United Kingdom, SK = South Korea, CA = Canada, FR = France, IT = Italy, GE = Germany, JP = Japan.
Source: WHO, UN

… healthcare cost inflation is another significant driver …

Exhibit 21 summarises the additional pressure on healthcare funding from medical cost inflation, which has historically been significantly higher than domestic inflation levels.

Exhibit 21: Medical inflation vs CPI across selected markets in Asia, 2008-17



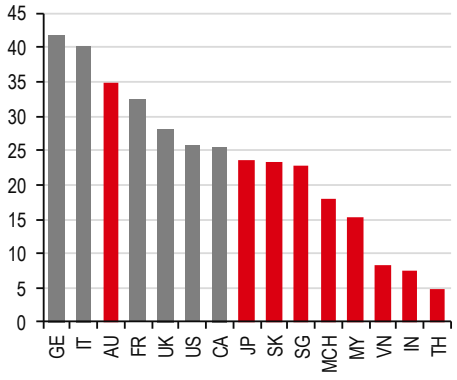
Key: MCH = Mainland China, HK = Hong Kong, IN = India, ID = Indonesia, JP = Japan, MY = Malaysia, PH = Philippines, SG = Singapore, SK = South Korea, TW = Taiwan, TH = Thailand, VN = Vietnam
Source: AON, Swiss Re, Willis Towers Watson

… but medical resources are scarce

Exhibits 22-27 compare medical resources in selected markets in Asia and G7 economies. It shows that markets in Asia, generally, have a lower number of physicians, medical doctors, nurses, midwives, pharmacists and dentists than the respective average in G7 economies. Growing demand is only likely to exacerbate such shortfalls, which is why innovation is essential to improving the effectiveness of scarce medical resources.

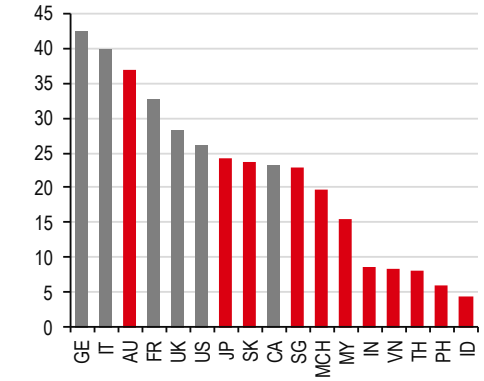
Medical resource availability across selected markets

Exhibit 22: Physicians (per 10,000 population), 2017



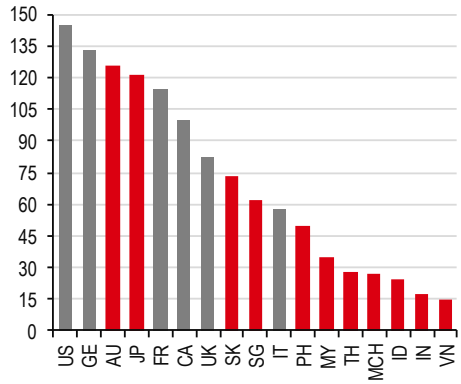
Key: GE = Germany, IT = Italy, AU = Australia, FR = France, UK = United Kingdom, US = USA, CA = Canada, JP = Japan, SK = South Korea, SG = Singapore, MCH = Mainland China, MY = Malaysia, VN = Vietnam, IN = India, TH = Thailand
Source: WHO

Exhibit 23: Medical doctors (per 10,000 population), 2017



Key: GE = Germany, IT = Italy, AU = Australia, FR = France, UK = United Kingdom, US = USA, JP = Japan, SK = South Korea, CA = Canada, SG = Singapore, MCH = Mainland China, MY = Malaysia, IN = India, VN = Vietnam, TH –Thailand, PH = Philippines, ID = Indonesia
Source: WHO

Exhibit 24: Nursing and midwifery personnel (per 10,000 population), 2017



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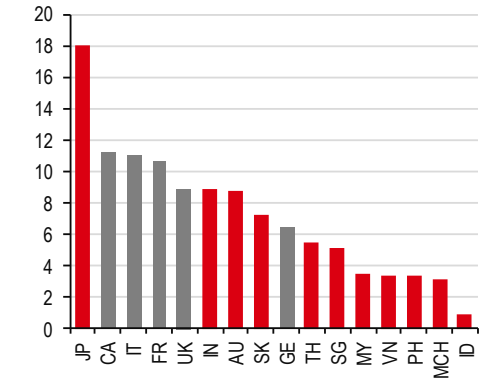
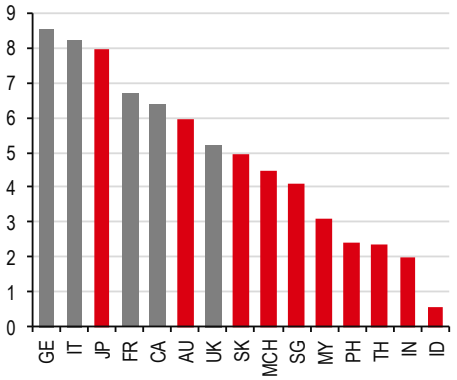
Source: WHO

Exhibit 25: Pharmacists (per 10,000 population), 2017



Key: JP = Japan, CA = Canada, IT = Italy, FR = France, UK = United Kingdom, IN = India, AU = Australia, SK = South Korea, GE = Germany, TH = Thailand, SG = Singapore, MY = Malaysia, VN = Vietnam, PH = Philippines, MCH = Mainland China, ID = Indonesia.
Source: WHO

Exhibit 26: Dentists (per 10,000 population), 2017



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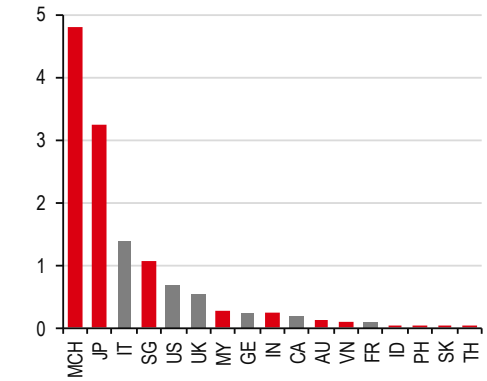
Source: WHO

Exhibit 27: Biomedical engineers (per 10,000 population), 2017



Note: MCH = Mainland China, JP = Japan, IT = Italy, SG = Singapore, US = USA, UK = United Kingdom, MY = Malaysia, GE = Germany, IN = India, CA = Canada, AU = Australia, VN = Vietnam, FR = France, ID = Indonesia, PH = Philippines, SK = South Korea, TH = Thailand
Source: WHO

Notes:
1) Medical doctors includes generalists, specialist medical practitioners and medical doctors not further defined (may also include practising (active) physicians only or all registered physicians). – WHO
2) Pharmacists includes graduates of any faculty or school of pharmacy, duly licensed or registered to practise pharmacy and actually working in the country in pharmacies, hospitals, laboratories, industry, etc. applying pharmaceutical concepts and theories by preparing and dispensing or selling medicaments and drugs. – WHO
3) Biomedical engineers design, evaluate, regulate, maintain and manage medical devices, and train on their safe use in health systems around the world. –WHO

Healthcare systems across Asia

- Traditionally, governments have acted as payers and providers of healthcare with the private sector focused on being payers through insurance policies to top up basic coverage
- The role of insurers is confined to being a payer of healthcare expenses (health insurance) or provide a payout based on diagnosis of specified illnesses (critical illness)
- Such systems are under pressure from other priorities for government spending, rising healthcare cost from ageing populations, urbanisation and inflation, creating a growing role for insurers

Government funding for healthcare remains sizeable across Asia, albeit lower than in developed economies. At least half of healthcare spending emanates from the government in mainland China, Malaysia, South Korea, Thailand and Vietnam, according to WHO data.

Government spending allocated to healthcare in Asia increased c12% pa over the past three years, compared with c14% pa over 2000-17, in local currency terms, meaning it outstripped GDP growth in all markets across Asia ex Japan (except Malaysia).

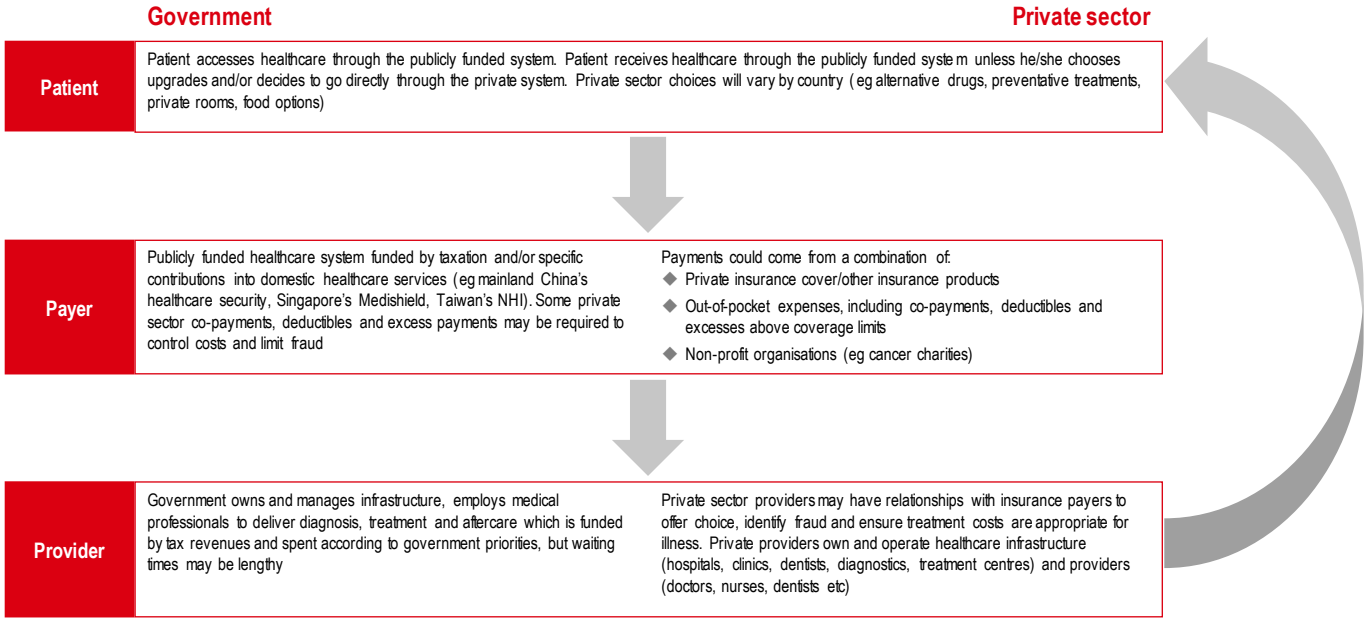
Meanwhile, funding from the private sector and out-of-pocket has increased at a rate faster than GDP growth in most markets across Asia ex Japan (except Indonesia, the Philippines and Thailand). Health premium growth was 26% pa over the past five years. Nevertheless, we believe the healthcare sector remains a significant opportunity for the insurance sector since government contributions are likely to be under pressure and insurers have a role to play in supporting households to move away from precautionary savings and/or borrowing to fund out-of-pocket healthcare spending towards private insurance policies.

In this section, we briefly outline how the public and private sectors complement each other in existing healthcare systems in selected markets across Asia with insurance companies largely confined to the role of “payer” alongside the government and out-of-pocket expenditure. In the next section, we look at how these business models are evolving to make private healthcare propositions more attractive across a multitude of stakeholders.

Key features

Governments across Asia still have responsibility for providing healthcare to the population. Exhibits 28-31 summarise the basic healthcare models adopted across Asia.

Exhibit 28: Structure of healthcare systems across selected markets in Asia



Source: HSBC

Exhibit 29: Summary of healthcare systems across selected markets across Asia

Market	Healthcare expenditure per capita (USD)	Healthcare expenditure as a % of GDP	Funding split Government	Private and out-of-pocket	Tax incentive for private insurance	Role Government	Private and out-of-pocket	Availability and funding for telemedicine
Mainland China	**441**	**5.2%**	57%	43%	Annual cap at RMB2,400 (cUSD350) per taxpayer for tax-exempt products	Universal basic coverage	Higher quality services; drugs, treatments and services outside government lists	High availability for follow-up visits at both public and private facilities; high CHS coverage but limited coverage under private insurance
Hong Kong	**2,723**	**6.2%**	49%	51%	Annual cap at HKD8,000 (cUSD1,000) per insured person for VHIS	Universal comprehensive coverage	Faster access to potentially higher quality drugs, treatments and services	Limited availability at both public and private facilities; limited coverage under private insurance
India	**69**	**3.5%**	27%	72%	Annual cap at INR25,000 (cUSD340) per taxpayer	Hospitalisation coverage for limited population	More comprehensive coverage	Early stages of development
Singapore	**2,619**	**4.4%**	48%	52%	Total cap at SGD80,000 (cUSD58,000) for CPF and MediSave contributions	Universal comprehensive coverage	Higher quality treatments and services	Limited coverage under MediShield and MediSave, but rising number of private players
South Korea	**2,283**	**7.6%**	57%	43%	Annual cap at KRW1m (cUSD850) per insured person	Universal comprehensive coverage	Higher quality services; drugs, treatments and services outside of government lists	Early stages of development
Taiwan	**1,603**	**6.4%**	25%	75%	Annual cap at TWD24,000 (cUSD820) per taxpayer	Universal comprehensive coverage	Higher quality services; drugs, treatments and services outside government lists	Limited availability at public and private facilities; limited coverage under NHI and private insurance

Note: All data related to 2017 from WHO (except Hong Kong and Taiwan); funding percentage may not add up to 100% as external funding is not included and rounding; Taiwan's statistics incorporate government contribution to NHI in government funding but employer and employee contributions to NHI in private funding
Source: WHO, Local government sources, HSBC

Government expenditure supports the provision of items highlighted below, but the cost of care and demand for high-quality care continues to rise as a result of ageing populations, medical cost inflation, rising urbanisation and growing middle classes, in particular, across Asia:

- Physical infrastructure – hospitals, surgeries, clinics, diagnostic centres, pharmacies and treatment centres for both in-patient and out-patient requirements, as well as dentists, care homes and hospices
- Physicians and other medical practitioners – dentists, doctors, nurses, pharmacists, specialists, surgeons, therapists, as well as care staff
- Hardware – centralised record keeping, medical equipment and drugs

Private sector contributions mainly come from insurance policies and/or out-of-pocket expenses to supplement public sector coverage of healthcare costs. Private funding in healthcare systems across Asia is required for co-payment, deductibles and/or excess payments for specific drugs (not on approved lists), alternative treatments, dentistry, additional nursing care, private rooms and alternative food options that are not covered under the public healthcare system. They may also be needed to pay for homecare and/or hospice care.

- Private insurance typically includes cover for medical expenses, disability income, long-term care and critical illness. Medical expense reimbursement policies (in-patient, out-patient or both) can only be used to cover medical expenses and are generally a fixed benefit to avoid exposure to claims inflation in addition to fraud and frequency. Meanwhile, critical illness policies are often used as a substitute to cover medical expenses, given these offer a lump-sum pay-out for a defined list of illnesses but the use of proceeds is not tied to specific items. Policies need to be tailored by market, so they can pay for items not covered by the public healthcare system and/or focused on only private sector healthcare products and/or services. In most markets, health insurance policies are classified under both life and P&C segments based on different policy durations and/or products with which they are bundled.
- Out-of-pocket expenditure tends to cover deductibles and co-insurance payments (related to public and private sector cover), as well as excess healthcare costs (e.g. drugs and treatments) not covered by the public sector and/or insurance policies. It also includes full healthcare costs where no public cover is available and/or private cover has not been purchased.

It is worth noting that insurers have generally stayed away from full reimbursement or indemnity policies, given a lack of standardised treatment protocols, standardised pricing, low bargaining power vs hospitals, over-prescription and fraud to name a few of the potential risks associated with such policies.

Strengths

The positives of the traditional approach from the perspective of the main stakeholders are:

- Governments
  - Full healthcare coverage for the population
  - The government controls healthcare infrastructure and system, which should bring scale benefits and improve its ability to respond to medical emergencies (e.g. pandemics)
  - The government can allocate resources where most needed
  - Limited domestic competition for healthcare resources (e.g. doctors, nurses, drugs, medical equipment) that should help to limit costs

- Policyholders
  - Full access to emergency, in-patient and out-patient healthcare services with payments designed to deter fraudulent claims and/or overtreatment
- Insurers
  - Insurers mainly provide medical cost reimbursement and critical illness policies with fixed benefits, so they are only exposed to frequency risk, which is relatively easy to price
  - Insurers may not have to finance or manage any private healthcare-related facilities and/or services since they are only financing top-ups for the public sector healthcare system

Weaknesses

The key drawbacks of the traditional approach from the perspective of key stakeholders are:

- Governments
  - The government needs to fund rising healthcare costs, which will continue to rise due to healthcare cost inflation and growing demand for high-quality healthcare as a result of ageing populations, rising urbanisation and growing middle classes
  - The government has the administrative burden of owning and managing the majority of a country's healthcare infrastructure and hardware, as well as being responsible for employing medical practitioners
  - Data collected is likely to be under-utilised
  - Limited incentives for innovation
- Policyholders
  - Limited choice in the basic system and a likelihood of long waiting times, given resource constraints
  - May not receive the highest quality treatment or the most effective drugs due to government cost considerations and/or a lack of competition and innovation
  - Under-coverage must be funded out-of-pocket either directly or by purchasing insurance policies
  - Where private sector healthcare is covered purely by private insurance, the policyholder has limited visibility on costs since contracts negotiated between insurers and healthcare providers, pharmacists and equipment providers are not transparent
  - Limited focus on preventative health and wellness measures, leading to a higher probability of illness
- Insurers
  - May be difficult to determine the difference between 'real' and 'fraudulent' claims, given claims are likely to be assessed in the public system and there are a limited number of private sector providers. Historically, fraud and over-prescription have been common
  - Limited access to data that would help improve pricing, products and services
  - Limited focus on preventative health and wellness measures, resulting in higher claims frequency and costs
  - In economies with limited private sector healthcare options, policyholders are likely to question the need for insurance cover

Health & wellness ecosystems

- Health and wellness ecosystems allow insurers to move away from being just a payer to a payer and provider of healthcare products and services as well as a risk influencer
- Such business models allow insurers to move towards a more holistic customer relationship with better experience, loyalty, higher number of touch points, and better health outcomes …
- … this provides a conduit for additional new business opportunities with scope for higher insurance and non-insurance revenues, helping to reduce the health and mortality protection gaps

In this section, we look at how health insurance business models are evolving to make healthcare propositions more attractive to a broad range of stakeholders as patients, payers and providers become more closely intertwined. Healthcare strategies have evolved in this direction in recent years because the private sector burden for healthcare has been rising as governments allocate proportionately less to healthcare spending, while insurers seek to become more than just payers to avoid commoditisation and disintermediation.

Such trends have presented opportunities for the private sector to develop health and wellness facilities, products and services that should naturally have high volumes (especially given population sizes across Asia), collect valuable data (to improve pricing, healthcare facilities, products and services, as well as improving detection and prevention of diseases and illnesses), and improve health outcomes with a layer of provision that builds a complementary layer on the existing government-funded infrastructure and system.

This evolution should allow insurers to enhance their capabilities to acquire, engage and retain customers, resulting in increased sales of health and critical illness policies to drive further NBV growth. It may also lead to additional, non-traditional sources of revenue and allow insurers to reduce the risk of commoditisation and disintermediation from only being a payer.

Key objectives for insurers

In our view, insurers have been paying greater attention to the health and wellness opportunity beyond merely from the perspective of medical cost reimbursement and/or critical illness products, because if they can get the business model and propositions right, it could lead to the following favorable outcomes across a number of stakeholders:

- Move the customer relationship away from being transactional to more holistic, so that it enhances customer experience, improves loyalty, increases touchpoints, improves cross-selling opportunities, as well as generating higher quality data.

- Improve risk management through access to both more and higher quality data, so that insurers can also identify further strategies to reduce risks (e.g. through early diagnosis, offering health and wellness programmes).
- Scope to lower the cost of insurance, as well as improving profitability by increasing policyholder touchpoints and loyalty, leading to a better claims experience, lower acquisition costs and increasing cross-sell opportunities.
- Higher NBV and/or other revenues from additional top-line growth from insurance products and/or non-insurance products and/or services (e.g. health and wellness subscriptions, drug prescriptions, and nutritional supplements).
- Support individuals to mobilise precautionary savings by purchasing protection provided by insurance products, which should ultimately reduce the burden of out-of-pocket spending, thereby potentially supporting consumer spending in the broader economy.
- Support societal initiatives for people to live longer, healthier, better lives and make the best use of limited public resources, as well as benefit from up to 30-50% of primary care being conducted through televisits in the coming years, according to Oliver Wyman. Such objectives should also support broader ESG considerations that are growing in importance.

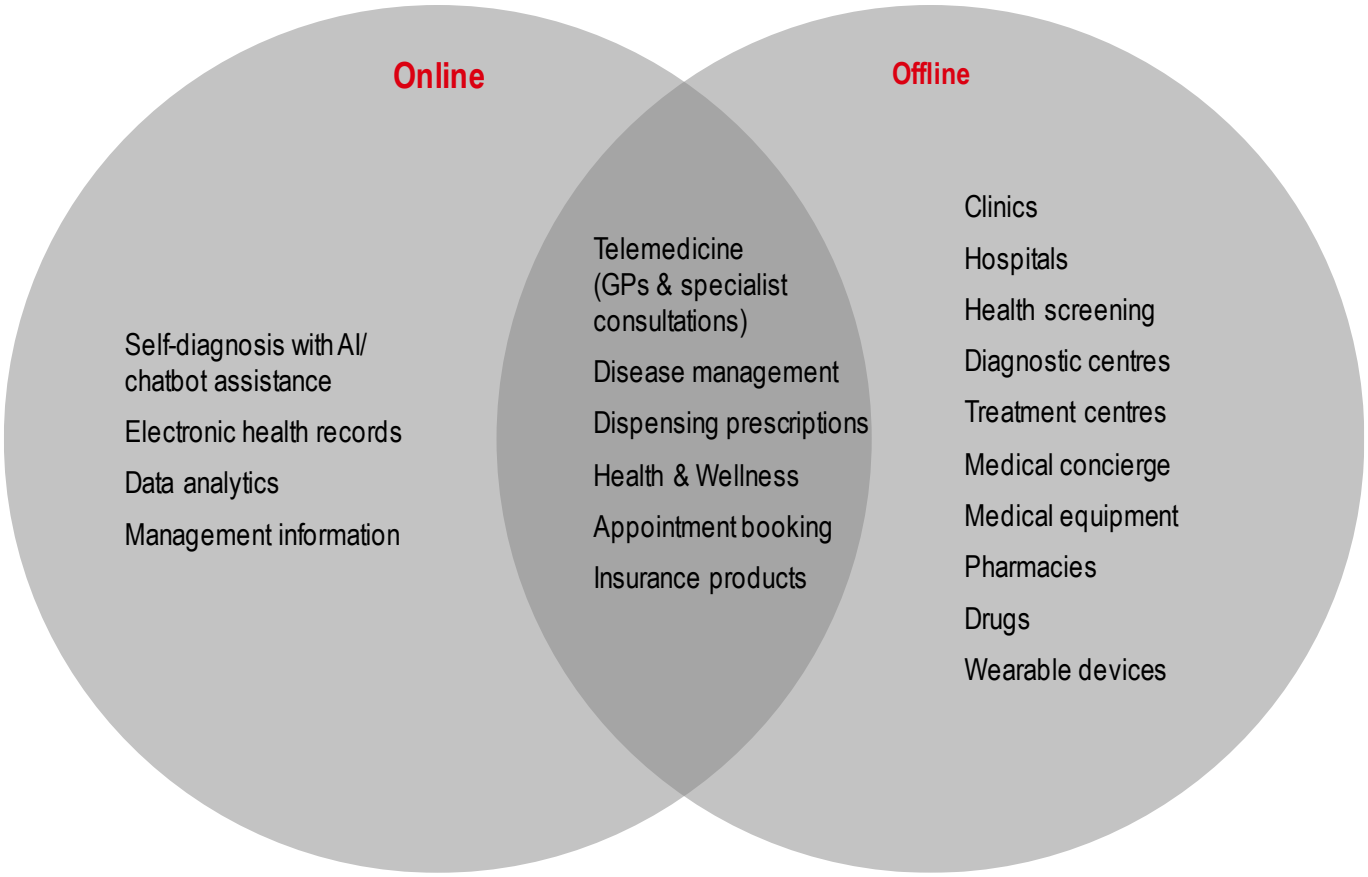
The journey begins

As a result, private insurers are designing health and wellness ecosystems with a combination of online and offline facilities, products and/or services (Exhibit 30) developed and owned either in-house, through partnerships or joint ventures, focused on delivering the following favourable outcomes for individuals and society (and summarised in Exhibit 31):

- **Predict** diseases and illnesses quickly through, for instance, health and wellness products and services, as well as regular health screenings, offline or online health consultations with general practitioner (GPs) and specialists.
- **Prevent** diseases and illnesses with regular health screenings, as well as health and wellness propositions to provide early indicators to reduce an individual's risk factors by suggesting lifestyle changes.
- **Diagnose** diseases and illnesses accurately and quickly through online and/or offline consultations with GPs and/or specialists with shorter waiting times, supported by artificial intelligence tools for diagnosis (both self- and doctor-led) and appointment booking with the most appropriate professionals and institutions in the best available location.
- **Treat** diseases and illnesses appropriately, effectively and quickly by finding the most appropriate, cost-effective treatments with the best available professionals and facilities in a timely manner.
- **Recover** from diseases and illnesses through effective recovery programmes (e.g. advice, physiotherapy), as well as tailored health and wellness programmes.

Although there are market-specific differences, it is worth noting that payers and providers within health ecosystems continue to be a mixture of the public sector and the private sector. Generally, the private sector seems to be focused on developing innovative, online, technology-inspired propositions to complement and improve the effectiveness of traditional healthcare systems run by governments. The public sector benefits from better and more effective outcomes from scarce resources, while the private sector benefits from high volumes, which should ultimately help improve offerings and outcomes.

Exhibit 30: Functions available across online vs offline healthcare providers

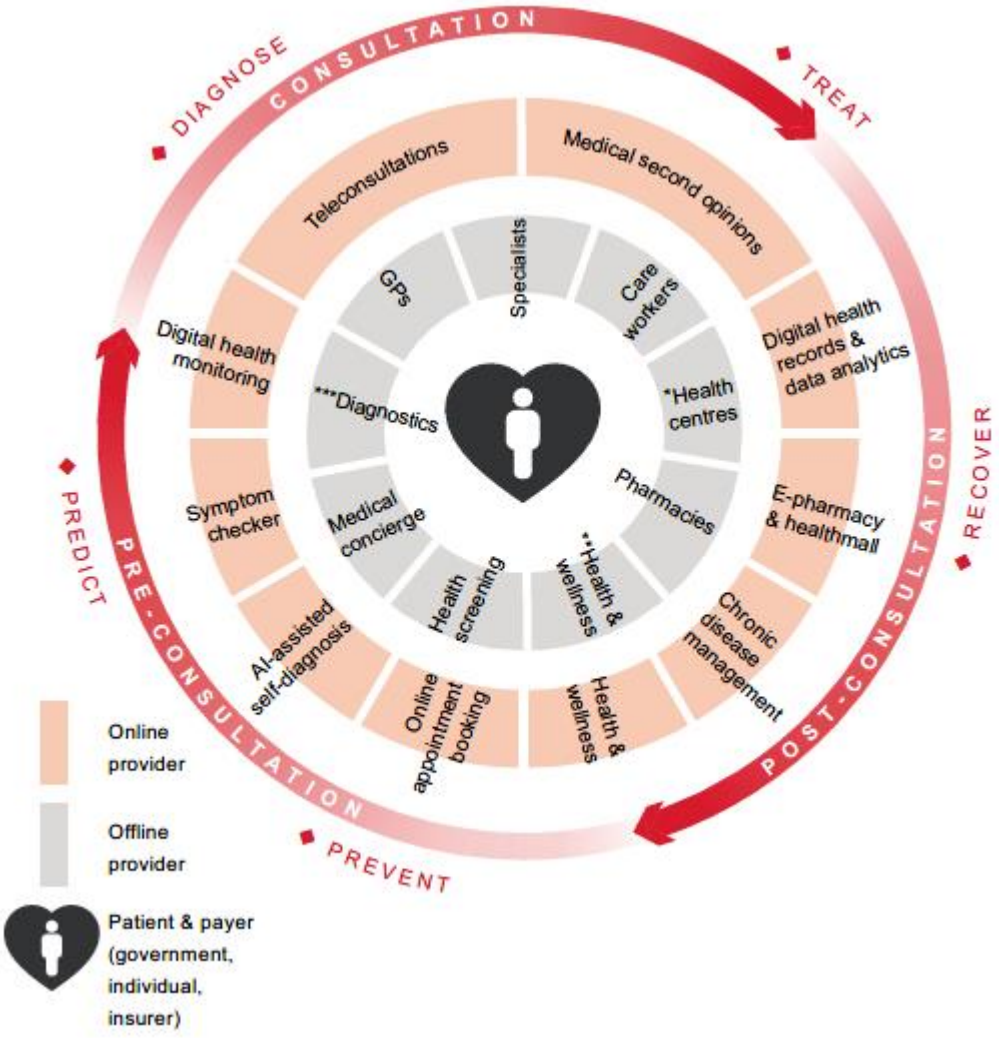


Source: HSBC

Ecosystem models

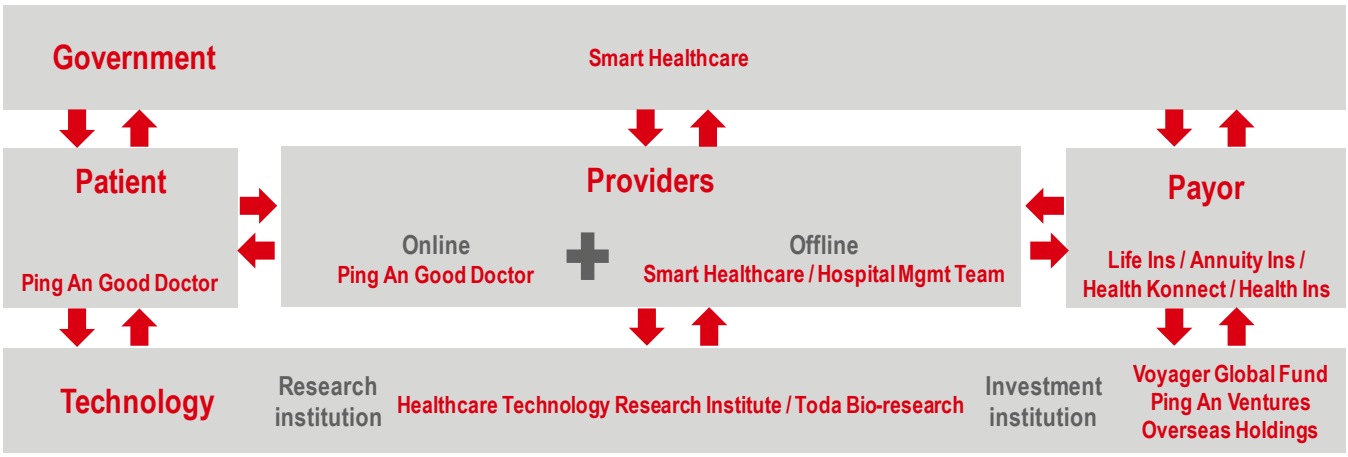
Insurance companies across Asia are taking different approaches to deliver broadly similar health and wellness ecosystems that incorporate and complement existing government and private sector facilities, and products and services to deliver better health outcomes. We review the health ecosystems that have or are being developed by Ping An, AIA and Prudential in the following sections, but we provide an overview of their respective ecosystem in Exhibits 32-34.

Exhibit 31: Structure of emerging health ecosystems



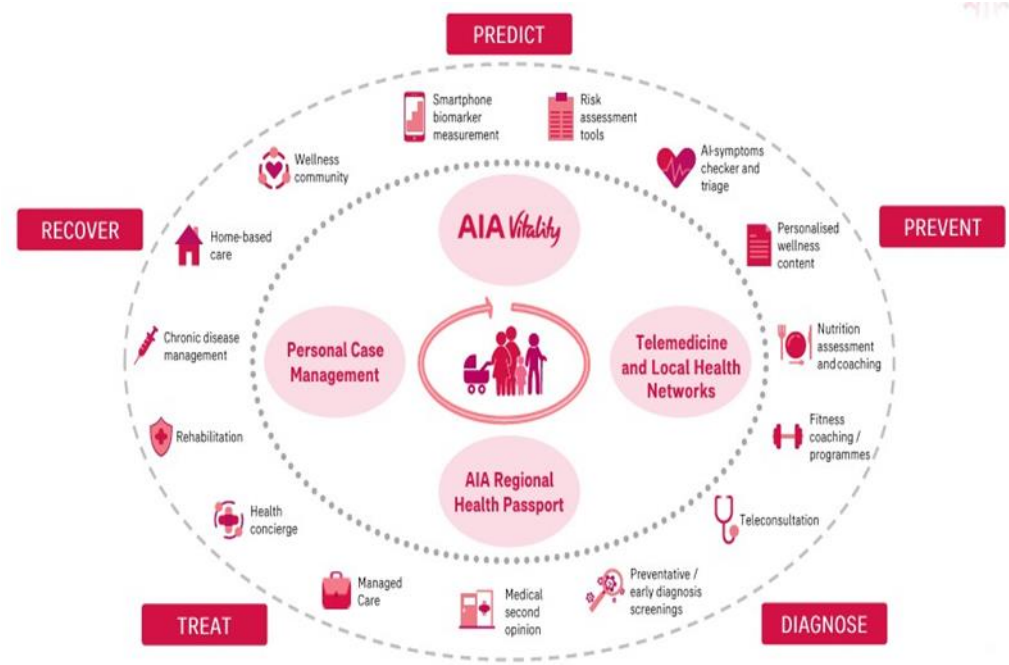
Note: *Clinics, hospitals, rehabilitation centres, surgeries, treatment centres; **Wearables, fitness programs, nutrition; ***MRI, ultrasound, X-ray
Source: HSBC

Exhibit 32: Summary of Ping An's health ecosystem



Source: Company data

Exhibit 33: AIA Regional Health and Wellness Platform



Source: Company data

Exhibit 34: Summary of Pulse by Prudential, Pru Asia's health ecosystem

Dual Language Options	Hospital Navigator
Digital Twin	Dengue Alert
Symptom Checker	Prayer Times
Selfie BMI	Health Updates
Telemedicine & Online Doctor Consultation	Health & Wellness Challenges
Facial & Biometric Login	Wrinkle Index
My Communities	My Rewards
My Notifications	Share with friends

Source: Company data

The main considerations when designing ecosystems insurers are paying attention to are:

Ecosystem ambitions and objectives

- Open or closed – will impact how the health ecosystem is integrated into the core insurance product offering and vice versa:

  - Open systems provide health ecosystem access to policyholders (or members) and non-policyholders. The ecosystem facilities, products and services are likely to be selected for both quality and function. This approach should allow the ecosystem to broaden its customer base, so that it has access to larger datasets. AIA, Ping An and Prudential have generally adopted this approach to aid customer acquisition.
  - Closed systems only allow access to policyholders (or members) with tight control of products and services offered on the platform. This allows the ecosystem provider to control the customer experience, generate customer loyalty and increase cross-selling opportunities. This could be applied to certain products and services such as access to an insurer's medical network.

- Platform or ownership – build by selecting and integrating third-parties into the ecosystem or own and build in-house:
  - Build a platform for customers to access partner services. This approach is asset-light, less risky, and potentially more agile and could deliver faster growth if partner propositions are advanced and well-developed. The insurer would need to determine how to share benefits, depending on whether there is a servicing agreement or the businesses are partners. However, there are a limited number of such partners, meaning first mover advantages can be significant. This is the approach taken by AIA and Pru Asia for the majority of products and services in its respective health and wellness ecosystem.
  - Acquire, white-label and/or develop health ecosystem facilities, products and services in-house. This approach would allow insurers to create one brand and control the customer offering. In cases where there is full ownership, there would be no scope of value leakage to partners, allowing the provider to control data acquired. This is the approach taken by Ping An, although it does not own 100% of the economics in most cases.
- Customised or standardised:
  - Health ecosystems may need to be customised by geography to take account of local contexts and availability of partnership offerings for those adopting the platform approach. This allows insurers to scale up the operations that work but also eliminate ideas that do not work. AIA and Prudential have either customised their respective ecosystem by market or have different partners for the same products and/or services across different markets, given differences in culture, language and local preferences.
  - Standardised ecosystems would have consistent branding, experience and offerings across geographies to improve brand awareness, while also having stronger control of the operations and risk management. Ping An has adopted this approach in mainland China. Meanwhile, AIA and Pru have maintained consistent branding across the region, despite local customisation, sometimes with different partners.
- Data governance rules – the rules should cover how data is collected, stored, analysed, interpreted and utilised. This is essential to ensure customers retain confidence in the health ecosystem and the insurer. There may be additional complexities around ownership and sharing of data between platform vs ownership models, as well as across geographies.

Selecting ecosystem partners

In the platform and partnership models, it is important to select ecosystem partners that:

- Have a distinct competitive advantage or uniquely differentiated proposition.
- Can complement and/or supplement the existing ecosystem.
- Be clear about the customer segments they can serve and whether that is consistent with the insurer's targeted customer segments.
- Be aware of risks emanating from the partner such as regulatory, reputational, clinical and/or integration and other costs.

Benefits

The move towards health ecosystems allows insurers to either complement or integrate the public and private health systems we discussed earlier in the report, as well as supporting individuals to live "longer, healthier and better lives". This should enhance the ESG credentials of participants since it supports society in reducing the strain on government resources through more effective and efficient delivery of healthcare, while also intensifying efforts to manage and prevent illnesses in the first place. We consider the benefits for each of the key stakeholders below:

- Governments
  - More efficient use of resources across the medical value chain.
  - Better health outcomes, driven by combining public and private sector resources, as well as more effective data usage.
  - Better data collection, analysis and interpretation with support of advanced technologies (e.g. artificial intelligence and machine learning), leading to better quality R&D.
  - Increased take-up of insurance products to help reduce the health and mortality protection gaps, thereby reducing the burden on government resources.
- Policyholders
  - One-stop shop since healthcare services are integrated with core insurance products (and potentially public sector, depending on market) to deliver one, coordinated and seamless healthcare journey.
  - Convenient and timely access to high-quality healthcare services and resources; in many cases, allowing patients to self-diagnose in the case of light illnesses.
  - Improved access, choice and quality of healthcare services, including online and offline facilities, products and services such as telemedicine, managed care, case management and wellness.
  - Overcomes geographical barriers, which is especially important for those in more remote areas with complicated conditions needing specialist input and treatment.
  - Reduced travel and waiting times as health ecosystems offer both online and offline choice of services, which is likely to reduce demand on the latter, in particular.
  - Scope for more appropriate and effective risk pricing, given the use of a broader array of data points (along with the ability to influence risk factors through wellness) could lead to lower insurance premiums.

- Products and services can be tailored beyond just sick care to include, for instance, preventative care, lifestyle management and wellness, which could help reduce the policyholder's risk profile and potentially premiums.
- Data and services can be utilised to reduce and/or influence risk of future illnesses, which is positive for both individuals and society.

◆ Insurers

- Higher new business volumes as lower premiums, increased engagement and/or services designed to improve risk profiles lead to a higher take-up of medical insurance and/or expands the target market.
- Improved customer acquisition, engagement and retention capabilities lead to better loyalty, lower costs and higher business volumes over time.
- Captive user base generates more customer touch points across the value chain to improve revenue opportunities through cross-selling and up-selling, leading to higher case sizes for insurance products and scope for additional revenue opportunities.
- Wellness services offer opportunities to control and/or influence risk factors, as well as collect policyholder data through, for example, wearable devices.
- Leveraging data and analytics to tailor products and services to individual risk profiles.
- Improved profitability due to scope to reduce claims frequency and lower claims severity.
- Mutual benefits for technology partners and insurers since the latter gain access to the latest technologies and services without significant upfront costs while technology companies get access to the customer base and data.
- Early mover benefits, given data advantages and limited healthcare resources across most markets in Asia ex Japan.
- Bargaining power with healthcare providers since insurer might have preferred service providers to help control both claims frequency and severity.

◆ Doctors

- Access to artificial intelligence-assisted decision processes to support improved diagnosis and/or review of medical imaging (e.g. MRI, X-rays, etc.).
- Doctors may be able to work more flexibly than previously since they can work with online healthcare panels and do not incur the cost of running a clinic/surgery.
- Access to doctor networks, allowing for better information, sharing of information on the latest drugs, research and treatments, as well as providing training opportunities.
- Doctors can build client base and reputation to be compensated at market rates.

◆ Hospitals

- More effective utilisation of resources by better separating patients between those that can be diagnosed and treated online from those that need offline in-patient or out-patient services.
- Improved management systems to enhance operational efficiency through appointment booking systems, and better management of drug suppliers and other medical equipment.
- More secure, efficient and effective record keeping allows the healthcare system to maintain comprehensive records that might help enhance processes and procedures in future.

- Pharmacies
  - e-commerce opportunities that enhance the efficiency of sales and marketing.
  - Better data can drive future R&D in medicines.

Weaknesses

- Governments
  - Public sector resources subsidise private sector health ecosystems, but this may be justified if it ultimately leads to better health outcomes and more efficient use of scarce resources, as well as reduce the burden on public health systems.
  - Greater competition for scarce healthcare resources (e.g. doctors).
- Policyholders
  - There might not be sufficient competition across health ecosystems since there are a limited number of healthtechs in each market that can partner with different insurers as well as insurers with sufficient vision, scale and resources to develop their own health ecosystems.
  - Health ecosystems may not all be able to offer the same scope of products and services.
- Insurers
  - Health ecosystems may not support higher insurance take-up since less affluent customers may remain reliant on state resources, while online health products have not succeeded as a standalone product globally.
  - Customer loyalty and retention would suffer from reputational damage, service disappointments and clinical errors.

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Issuer of report

The Hongkong and Shanghai Banking Corporation Limited
Level 19, 1 Queen's Road Central
Hong Kong SAR
Telephone: +852 2843 9111
Fax: +852 2596 0200
Website: www.research.hsbc.com

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