INNOVATIONS ACROSS ASIA’S HEALTHCARE SUPPLY CHAIN

Written by Economist Intelligence Unit
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The healthcare environment in Asia is changing rapidly, driven by economic growth, increasing affluence, and higher educational levels. At today’s spending levels, Asia’s healthcare market will grow significantly. Asia’s per capita healthcare spend is markedly less than “Western economies” such as the US and Europe. Even Japan, the region’s biggest spender, is at 35% of US levels, whilst Asia’s most populous nations of China, India and Indonesia spend only US$308, US$132 and US$99 per capita on healthcare annually – 4%, 2% 1% respectively, of US-spend.

The Asian healthcare landscape is heterogeneous, with vastly different levels of development across countries; within countries, the urban-rural divide continues to widen. Whilst infectious diseases remain prevalent in many areas, the emergence of lifestyle-related chronic illnesses is creating a new challenge for Asian countries – to continue their efforts in reducing infectious diseases, and managing the acceleration of chronic diseases.

These trends have posed huge challenges to governments trying to deliver a satisfactory level of care across the spectrum – from prevention to treatment to palliative care.

Public – private sector collaborations are now leading the way in healthcare innovation with a common goal of reaching new levels of effectiveness and efficiency, and, they are also looking beyond the healthcare industry in their bid to find innovative solutions.

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OECD Health Data 2011
Preface

This report is published by UPS and written by the Economist Intelligence Unit (EIU). The views expressed by the EIU do not necessarily reflect those of UPS.

Our sincere thanks go to the following interviewees (listed alphabetically by organisation) for their time and insights:

- Dr Kenneth Hartigan-Go, professor, Dr Stephen Zuellig Center for Asian Business Transformation, Asian Institute of Management
- Sanjay Prabhakaran, general manager for China and Hong Kong, Baxter
- Yuhang Zhao, head of global development in Asia, Bayer Healthcare Pharmaceuticals
- Zarif Munir, partner and managing director, Boston Consulting Group Malaysia
- Rick Evans, chairman, Columbia Asia
- Dr Young Kyung Do, assistant professor for programme in health services and system research, Duke-NUS Graduate Medical School Singapore
- Dr Fock Kwong-Ming, assistant chief executive officer, Eastern Health Alliance
- Dr Meenakshi Gautham, founder-director, First Care
- Dr Gilberto de Lima Lopes, Jr., senior consultant in medical oncology and assistant professor of oncology, Johns Hopkins Singapore International Medical Centre and Johns Hopkins University
- Dr Jeremy William Fox, director, Centre for Health Policy and Management, National University of Singapore
- Dr Alberto Romualdez, former secretary of health, Republic of the Philippines Department of Health
- Wayne Spittle, senior vice president & commercial leader of Asia Pacific, Philips Healthcare
- Dr Anand Tharmaratnam, chief executive officer and head of Asia, Quintiles
- Dr. Juha Teperi, head of R&D Unit, Sendai-Finland Wellbeing Center
- Hiroshi Yoshimura, deputy head of R&D Unit, Sendai-Finland Wellbeing Center

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Asia faces diverse and difficult healthcare challenges. Poorer economies in the region grapple with dire shortages of drugs and doctors, and the inadequacies of healthcare systems that cannot reach patients in remote locations. Richer countries face policy quandaries over resource allocation, and achieving the right balance between public and private provision.

Meanwhile, Asia’s healthcare environment is changing dramatically, with rising incidence of developed-world non-communicable diseases such as hypertension, cancer and diabetes, even as the region struggles to stamp out infectious diseases such as malaria, AIDS and polio. This confluence of persistent basic health problems and the onset of rich world diseases is creating unprecedented challenges for Asian societies and health systems.

Yet as much as there is risk, there is opportunity. Governments in Asia have been striving to improve healthcare provision, but the task is far too onerous to tackle with public resources alone. Private sector healthcare firms have been drawn to Asia, given the region’s tremendous growth potential.

This paper, published by UPS and written by the Economist Intelligence Unit (EIU), focuses on how healthcare firms at each point of the supply chain in Asia are innovating, or should innovate, in order to meet the task of healthcare provision, and benefit from the sector’s rapid growth in Asia. Among the report’s key findings are the following:

• Asia’s healthcare sector has been growing rapidly, creating numerous growth opportunities for firms right across the healthcare supply chain. Several broad trends, including rising household incomes, increased government expenditure on healthcare, higher life expectancies, consumer health awareness, and the growing incidence of chronic developed-world diseases associated with changing lifestyles have all boosted demand for healthcare products and services in the region. The annual average per capita healthcare spending in Asia and Australasia has more than doubled between 2001 and 2011, from US$150 to US$362, according to the Economist Intelligence Unit (EIU). The EIU expects this spending to reach US$546 by 2016.

• Partnerships between large Western companies and Asian institutions and firms are driving R&D innovation in the region. The West’s “Big Pharma” has invested heavily in innovation in China, India and elsewhere—tailoring clinical trials to local populations and seeking government buy-in and collaboration with local private sector, academic and medical institutions. Generic drug firms in Asia, particularly those from India, are energising the region’s pharmaceutical industry and have lately begun to invest in researching novel drugs. Despite their growing research capabilities, however, Asian firms are unlikely to challenge Big Pharma in the near future: they currently lack the resources and expertise to develop, launch and market innovative products globally.

• Drug development, not discovery, is the focus of research and development (R&D) in Asia at the moment. Pharmaceutical innovation in Asia is accelerating, but R&D efforts are focused more on cost-efficient “D” than pure “R”. This has led to an increase in the number of clinical trials—a vital phase in drug development—being conducted in low-cost Asia with its easy access to a high volume of patients, as pharmaceutical companies not only trim their R&D expenses but also localise their research into diseases, such as cancer and diabetes, which are becoming more prevalent in Asia.

• The challenges for R&D in Asia include uncertain returns on investment and weak patent protection. Given that the region’s R&D facilities are relatively new and the lead time from drug discovery to global

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“2This is the sum of public and private health expenditure on a per capita basis
marketing relatively long, novel drug discovery from these centres may not materialise soon. Investors will have to contend with this uncertainty. This is compounded by governments’ prioritising broad-based healthcare at low cost, and worries over intellectual property protection and enforcement in key emerging markets. Although Western pharmaceutical firms have invested heavily in manufacturing and outsourcing of clinical trials in Asia, their core R&D activities still come under the purview of corporate headquarters.

- **Innovations in technology and business models are enabling a deeper, wider reach for healthcare delivery in Asia, with the use of fewer resources.** Healthcare professionals in brick-and-mortar facilities located in urban areas are the typical providers of healthcare services in Asia. But the innovative use of technology like mobile communications devices, or the creative adaptation of hospital business models, equipment or operation procedures, can help to deliver healthcare to the masses cheaply and efficiently. However, these innovations face resistance from doctors and institutions with entrenched interests who are unable to move away from traditional models of health services delivery.

- **Low-cost healthcare innovations are helping to create a new class of competitors for traditional healthcare institutions.** The innovative application of technology and business models is enabling the emergence of medical-delivery outfits that are smaller, nimbler and cheaper, and that pose a threat to existing hospitals with high overhead costs. Third-party payers, such as insurance companies or employers, will likely drive the shift to lower-cost health-services provision, enabling smaller facilities to survive and succeed. These third-party payers have a huge incentive to send premium-holders or employees to smaller, faster, cheaper medical outfits.

- **Adapting to innovations requires both basic and fundamental changes in institutions, and an integrated approach.** On one level, healthcare providers can continually add on new layers of technologies and systems, such as digitised health records or new surgery equipment, with few changes to their operations. However, the rising incidence of non-communicable diseases is going to require a fundamental remodelling of the whole healthcare system. Traditional institutions and professionals have to be part of a multiple-level, integrated solution that extends well beyond the healthcare system, to enable care from “prevention to palliation”. This approach requires cooperation between multiple stakeholders, from schools and community care centres to family clinics and public communication channels.
INTRODUCTION
Asia faces many different healthcare challenges, in keeping with the diverse social, economic, and political environments found throughout the region. Emerging Asian economies, which often grapple with large populations, under-resourced healthcare systems and massive geographic spread, find it difficult to get basic medical services to the far reaches of the country. In India, Indonesia and the Philippines, for instance, healthcare is reasonably delivered in the major cities, but underprovided in rural areas. In China, Malaysia and Thailand, which have all made significant progress in recent years, healthcare provision is much more equitable but still far from ideal.

Only in Asia’s developed markets—Hong Kong, Japan, South Korea, Taiwan and Singapore—is healthcare delivery widespread, leveraging partly on the efficiencies of digitised medical systems. Nevertheless, these countries still contend with policy dilemmas over resource allocation, the balance between public and private provision, and expensive universal healthcare coverage that is at risk of being outstripped by public demand.

Yet as much as there is risk, there is opportunity. Several broad trends have been driving the booming growth in Asia’s healthcare market. The first is demographic change—including higher life expectancies (see Figure 1), population growth, and the overall ageing of some populations—which has pushed up demand for a variety of healthcare products and services, including treatments for the elderly.

Figure 1: Life expectancy, selected Asian countries (years)

Source: US Bureau of Census; Economist Intelligence Unit
Rising incomes in Asia have also enabled people to afford better treatments. Meanwhile, higher literacy rates and educational standards in Asia have contributed to heightened health awareness, prompting more widespread consumption of healthcare products and services.

As Asians’ lifestyle patterns have begun to change, there has been an increase in the incidence of developed-world, non-communicable diseases such as hypertension, cancer and diabetes. China and India now have the largest diabetic populations in the world, comprising some 51m and 43m people, respectively. Experts expect diabetes prevalence in Asia to rise rapidly between now and 2030 (see Figure 2). Meanwhile, infectious diseases such as malaria, AIDS and polio remain a real threat.

Figure 2: Diabetes prevalence, selected Asian countries (%)

Source: Shaw et al., “Global estimates of the prevalence of diabetes for 2010 and 2030”, *Diabetes Research and Clinical Practice*, Vol 87, Issue 1, Jan 2010, pages 4-14
In other words, Asia is getting introduced to these first-world diseases at a rapid pace, even while it is still dealing with basic healthcare and infectious diseases. This confluence of persistent basic health problems and the onset of rich-world diseases is creating unprecedented challenges for Asian governments, societies and health systems. But it is creating new markets for firms specialising in the treatment of these illnesses.

In response, total healthcare expenditure has been rising rapidly (see Figure 3). The annual average per capita healthcare spending in Asia and Australasia has more than doubled between 2001 and 2011, from US$150 to US$362, according to the Economist Intelligence Unit (EIU). The EIU expects this spending to reach US$546 by 2016.

Figure 3: Healthcare spending (per head, US$)

Note: Total public and private expenditure on healthcare, per capita.
Source: Epsicom; WHO; Taiwan’s Department of Health, EIU
Meanwhile, total consumer expenditure on healthcare in Asia and Australasia has risen to US$550.3bn in 2011 from US$214.8bn in 2001. The EIU expects this figure to reach almost US$1trn by 2016.

This growth in expenditure has benefited many firms in the healthcare space. Consider the pharmaceutical sector. According to the EIU, the total combined revenue of pharmaceutical companies listed in Asia almost tripled between 2004 and 2009, from US$27.4bn to more than US$73bn. Foreign firms have also been rushing in. Between 2004 and 2011, fDi Markets, a data provider, recorded 653 cross-border investment projects in Asia from 321 companies in the pharmaceutical and biotechnology space, worth a total of US$28.6bn.

Thus Asia’s healthcare sector is changing fundamentally, as the region’s health profile evolves while public- and private-sector players—local and foreign—position themselves to address market needs. To operate successfully in this rapidly changing environment, healthcare companies and professionals at every link in the medical supply chain—from drug discovery and development, to use of medical equipment and technology, to provision of medicine and therapies, to hospitals and clinical services—have had to adapt and innovate.

Asia’s healthcare innovations also involve mind-set shifts. Policymakers and healthcare administrators need to adopt a holistic approach to the region’s challenges, working with stakeholders from sectors such as housing and urban planning to education, to tackle healthcare issues in an integrated way.

This includes expenditure by households on medical products and healthcare

“Asia Competition Barometer: Pharmaceuticals”, The Economist Intelligence Unit, Mar 16th 2012
INNOVATIONS IN DRUG DISCOVERY AND DEVELOPMENT
Traditionally, Western pharmaceutical companies have viewed Asia as either a destination market or a manufacturing location for drugs and devices. They have taken existing products—usually vaccines, generic drugs or patent-protected medicines—from a global portfolio developed in their US or European bases, and customised them, sometimes at manufacturing centres set up in Asia, to fit price points for sale in the region.

As the global economy’s growth momentum shifts towards Asia, that approach is beginning to change a little, partly because Western pharmaceutical companies are not getting sufficient returns at home on their huge investments in R&D. They need to drive down expenses, and one way of doing so is to outsource clinical trials—an essential stage in drug development—to the low-cost, high-demand environment of Asia.

This trend has developed progressively over the past decade, but has gathered pace recently, as incomes in Asia have grown and the region has become more attractive as an end market for these drugs. Regulatory reforms have also helped. Meanwhile, Asian governments are offering greater incentives, such as grants and tax breaks, to attract Western drugs and devices companies to their countries. For instance, Singapore has invested a great deal of time and money to attract biomedical companies to set up high-end R&D operations in the city.

At this relatively early stage, initiatives in Asia tend to be weighted heavily towards the “D” rather than the “R” in research and development, says Sanjay Prabhakaran, general manager for China and Hong Kong for Baxter, a diversified healthcare firm. He believes that for the moment, the development, rather than the discovery, of drugs and related therapies has a better chance of success in Asia: hence the rapid growth of clinical trials. In 2009 Asia contributed 10% of total patients recruited globally for such trials, double the number in 2003.

Indeed, R&D centres in Asia have some way to go before they replicate the kind of novel drug discoveries made in the West, especially given that many of the Asian facilities are relatively new and the lead time from drug discovery to chemist’s shelf is relatively long (anywhere between 10 and 17 years).

Dr Anand Tharmaratnam, chief executive officer and head of Asia for Quintiles, a US-based biopharmaceutical services company, says that patience is required. “There needs to be an understanding that the industry is young in Asia, and the nature of what we do has a long gestation period,” he says. “It is too early to say that all this innovation has yet to come to market and [therefore] is not succeeding. We’re just not there yet.”

Thus although they have invested billions of dollars in manufacturing and outsourcing of clinical trials in Asia, Western pharmaceutical heavyweights still face some R&D challenges in the region.

For a start, a fair bit of uncertainty hangs over the returns that would come out of R&D centres in Asia—far more than the uncertainty over R&D returns at home, which are under pressure from high costs and the imminent expiry of a wide range of patents. Commercialisation of a breakthrough drug is a complex process and presupposes a market for that discovery. A handful of high-priced innovations to satisfy a few patients would not justify biomedical companies’ R&D investment in Asia. A greater R&D focus on maladies common in Asia would provide a larger market for new drugs and therapies.

Big pharmaceutical firms also worry about poor intellectual property (IP) protection. China and India have made noteworthy strides in IP regulation but concerns linger about

*2011 CMR International Asia-Pacific R&D Pharmaceutical Factbook, CMR International, Thomson Reuters*
enforcement. Quintiles’ Dr Tharmaratnam says the entire industry needs to work with regulatory authorities to achieve this “regulatory innovation”, but he stresses that it is a challenge that must be met.

As a clinical research organisation, Quintiles participates in the clinical trials for which Western pharmaceutical companies are turning increasingly to Asia. Besides being able to enrol enough patients in the region at a fraction of the usual cost at home, they can also localise research for certain diseases with a higher incidence in Asia, such as diabetes and cancers of the liver and stomach. For instance, AstraZeneca, a British pharmaceutical firm, opened its Innovation Centre China in Shanghai in 2007 to collect data on cancer in Chinese patients. For its part, Bayer HealthCare Pharmaceuticals of Germany collaborates on cancer R&D activities with hospitals and research institutions in Singapore. Such customisation helps to make the drugs and therapies that arise from the research more relevant for Asian patients, and cuts down the lead time to bring them to local markets.

Meanwhile government plays a pivotal role in drug discovery and development in Asia. Besides setting healthcare policy, legislation and pricing, it also fosters private companies’ partnerships with state agencies, as well as medical universities and institutions. For Western biomedical companies in Asia, such collaboration with local stakeholders not only cuts R&D costs but also taps local expertise that can be applied across the region. “Synergistic industry partnerships are evolving to meet the challenges of healthcare today,” notes Yuhang Zhao, head of global development in Asia with Bayer HealthCare, which has a global R&D centre in Beijing (see case study).

Since 2009, the firm has had a strategic partnership with Tsinghua University in Beijing through the Bayer-Tsinghua University (Institute of Biomedicine) Joint Research Centre for Innovative Drug Discovery. Scientists from the institute collaborate with Bayer on the company’s therapeutic research in oncology, cardiology, haematology and gynaecology, as well as eye disease. Similarly, Pfizer, an American pharmaceutical firm, signed a pact with Samsung Medical Centre in South Korea to analyse liver cancer among Koreans to generate gene-expression profiles that may help to direct therapeutics for the region.

Importantly, Asian companies are also developing significant R&D capabilities themselves, which make them potential research partners. For instance, Piramal Life Sciences, an independent research-driven pharmaceutical company in India, has an agreement with Eli Lilly to develop and commercialise a select group of the US company’s pre-clinical drug candidates across multiple therapeutic areas. Piramal Life Sciences is also contracted to discover and develop new drugs for two new oncology targets provided by Merck of the US. In December 2011, Hutchison MediPharma, an R&D company that is majority-owned by the China-based Chi-Med healthcare group, made a global collaboration deal with AstraZeneca to develop and commercialise novel cancer therapy. In addition, Asian generics firms are beginning to invest in R&D; according to CMR International, a research company, Indian generic companies led their peers worldwide in generating the largest new drug pipeline between 2006 and 2010. Despite their swift progress in R&D, Asian companies are unlikely to pose a major threat to their Western counterparts soon. Although Asia’s pharmaceutical industry is
Innovations in drug discovery and development are booming, local companies tend to focus on local markets and generics; they do not yet have the infrastructure, resources or expertise to follow the long, expensive road from discovery to clinical trials to approval by European or US authorities to global marketing of a drug. Even the better-equipped, better-experienced Japanese pharmaceutical companies could find this process intimidating; it will be challenging for newer kids on the block from places such as China and India to do it alone—hence their willingness to forge alliances with Western firms. In time, though, blockbuster drugs may well come out of R&D in Asia, and the patience urged by Dr Tharmaratnam will be rewarded.
Case Study: Bayer HealthCare Pharmaceuticals

Research and deliver

“Asia, in particular China and India, is not just a market and manufacturing powerhouse for the pharma industry, but could make a key contribution to drug discoveries as well in the future.” So says Yuhang Zhao, head of global development in Asia with Bayer HealthCare Pharmaceuticals.

The two Asian giants are certainly a focus for the German company. Since February 2009, China has been the third location, besides Germany and the US, for a Bayer global research and development (R&D) centre. The Beijing-based facility includes a Global Development Asia Hub, the objective of which is to build a world-class organisation that will lead drug development not only for China but also for other Asian countries. “The aim is to systematically include Asian patients earlier in global drug development, breaking the tradition of the ‘US and EU first’,” says Mr Zhao.

Meanwhile, in 2011 Bayer formed a joint venture called Bayer Zydus Pharma with Zydus Cadila, an Indian pharmaceutical firm, for the sale and marketing of both companies’ products, including future patents in the pipeline, in India.

Bayer also sees excellent research and partnership possibilities in Singapore. In January 2011 Bayer HealthCare, along with Regeneron Pharmaceuticals, launched a new Phase III clinical trial in collaboration with the Singapore Eye Research Institute to investigate the efficacy and safety of VEGF Trap-Eye, an ophthalmic solution to treat retinal disorders. The trial, called MYRROR, originated in Japan and has since been extended to other Asian countries, including Korea, Singapore and Hong Kong, with Taiwan likely to join soon. Separately, in December 2010, Bayer earmarked S$14.5m (US$11.4m) to enhance R&D activities for cancer with hospital and research institutions in Singapore. “The oncology collaborations in Singapore will improve our understanding of molecular mechanisms of cancers with a high prevalence in Asia, such as hepatocellular carcinoma or liver cancer,” says Richard Nieman, head of medical affairs in Asia with Bayer HealthCare. “Comparing Asian and Caucasian populations will also help us to define differences in pathway activation by our development candidates.”

Bayer’s pharmaceutical development pipeline for 2012 and beyond is well stocked, with 44 innovative projects currently in phases I to III of clinical testing. In Asia, Bayer has recently gained approval in Japan and Malaysia for its once-daily oral anticoagulant Xarelto for the prevention of stroke and systemic embolism in patients with certain conditions; in Malaysia, Xarelto was additionally approved for the treatment of deep vein thrombosis. Further approvals are planned in other Asian countries, depending on feedback from their respective health authorities. In China, a new Phase III clinical trial for VEGF Trap-Eye started in 2011.

Bayer has ambitious innovation and expansion plans in Asia-Pacific for the rest of the decade. It plans to invest further in R&D, taking into account the particular needs of the region. Bayer also wants to improve access in Asia to its new medicines by integrating Asian patients into the early stages of global research and deliver.
development programmes, and plans to submit new medicines for registration concurrently in Asia, Europe and the US.

According to Mr Zhao, partnerships with scientific academia and start-up companies will continue to be highly important in Bayer’s R&D strategy in Asia. The goal, he says, is “to participate in the region’s transition to an innovation hub of the globalised world.”
INNOVATIONS IN ACCESS OUTSIDE THE HOSPITAL
Like drug discovery and development, which is inhibited in part by high R&D costs, provision of healthcare services in Asia is hampered in part by the expense of building brick-and-mortar hospitals. Typically these facilities are constructed in urban areas and, particularly when privately owned and run, cater to well-off patients.

“We have a rich minority that has access to the best healthcare in the world, and a poor majority that is living in the dark ages as far as health is concerned,” says Dr Alberto Romualdez, a former secretary for health in the Philippines and a former director for the Western Pacific with the World Health Organisation. Healthcare’s incomplete reach especially plagues geographically widespread countries such as China, India, Indonesia and the Philippines.

Simply building more full-scale hospitals is not the answer. “Such solutions miss the point altogether. Infrastructure is not getting to that last mile,” notes Dr Jeremy Fox, who heads the National University of Singapore’s Centre for Health Policy and Management. Wayne Spittle, chief executive officer in Asia-Pacific for Philips Healthcare, a healthcare-equipment maker, agrees. “People are demanding more and better healthcare,” he says. “You cannot build enough hospitals, you cannot train enough doctors and nurses to meet the demand. No matter what you do, you cannot catch up.”

This is where technological innovations can help. If costs and geography limit the building of enough serviceable hospitals in remote areas, then technology can be harnessed for more effective use of community health centres and basic laboratories in those locations. The hub-and-spoke model of healthcare delivery, assisted by remote technology, gets basic equipment to outlying facilities, and then sends information back to central analysis units.

Consider Philips Healthcare’s eICU programme. According to Mr Spittle, eICU enables a more responsive and efficient treatment of people in remote areas who have suffered a heart attack or stroke and may not have the wherewithal to get to the nearest good hospital. By tending to the patient immediately, and sending pathology slides to a central system for analysis, the technology-based model allows monitoring, a care regimen, and outcome adjustments to be made in a few hours. By facilitating the movement of data rather than people or buildings, such technological innovations enable healthcare institutions to handle a larger number of patients, without investment in more hospitals or physicians.

Ophthalmology advancements also highlight how technological innovations are complementing the traditional hospital model. New lasers for treating eye pathologies can now cauterise and sterilise at the same time. This allows ophthalmology units to bring a 65-year-old patient into a small operating room, remove his cataracts and put in artificial lenses, and send him home—all in the span of three hours or less. This allows a reach that was previously unimaginable. Teams at the Himalayan Cataract Project, an NGO created in 1994 to build an eye-care infrastructure in the Himalayan region, travel on foot to remote parts of Nepal, set up mobile eye camps in dusty schoolrooms, and perform cataract surgeries at international standards for as little as US$20. The eICU and the ophthalmology initiatives are examples of innovations that can benefit patients who live in remote areas in almost every Asian country.

Many of these innovations have not been adopted more comprehensively partly because of the reluctance of doctors and institutions with entrenched interests in the traditional models of health-services delivery. “The technologies that we’ve got at our disposal today will actually allow us to cut costs,” observes Rick Evans, chairman of Columbia Asia, a Kuala Lumpur-based hospital chain. “However, there’s a lot of built-in resistance...
to this idea. Doctors’ organisations don’t like to hear about people cutting costs, and traditional hospitals cannot compete with the new, low-cost outfits that surface as a result of the new technologies.”

By resisting new innovations, traditional hospitals leave the door open for smaller, nimbler outfits to nip in, operate more frugally and win market share. Columbia Asia, which builds and operates low-cost hospitals in India, Indonesia, Malaysia and Vietnam, is hoping to do just that. In Malaysia, its no-frills medical facilities provide general care for a variety of simple and common ailments more economically than higher-end providers. These hospitals can go further into rural Malaysia than larger hospitals, which have higher overhead costs; they tap a market segment that previously had to use either over-utilised government hospitals or expensive private ones.

Third-party payers, such as insurance companies or employers, will likely drive the shift to lower-cost health-services provision, enabling smaller facilities to survive and succeed. These third-party payers have a huge incentive to send premium-holders or employees to smaller, faster, cheaper medical outfits. Columbia Asia’s hospitals in Malaysia, for example, currently earn about 70% of their revenues from such third-party payers. “Third-party payment methodology is changing very fast all over Asia, and it will change healthcare forever,” Mr Evans says.
Bringing protocols, not professionals, to India’s villages

Healthcare in India suffers from a shortage not only of hospitals, but also of doctors. This shortage is particularly acute in the country’s villages, home to almost 70% of the population. A rural Indian often may live up to 20km away from the nearest hospital, with limited transportation available—difficult circumstances in a medical emergency.

Filling the void are “halfway doctors”, locally based practitioners with no formal qualifications in medicine, who nonetheless provide many villages with basic healthcare, where previously they had none. Some halfway doctors have a background in laboratory technology or pharmacy; others have no certification at all, but have assisted in a doctor’s clinic for a few years.

Further boosting their efficacy is First Care, an initiative that uses information technology to increase the halfway doctors’ knowledge and skills, create patient health record systems, and develop simple diagnostic services. Set up in 2007, First Care began operations by literally walking the ground, locating rural halfway doctors, and convincing them to join a pilot scheme it developed with the Indian Institute of Technology in Chennai. Regularly shunned by the formal medical establishment, the halfway doctors were happy to join this scheme—a distance-learning programme that was sent in modules over the Internet—largely because of First Care’s readiness to engage with them on their terms and in their own language.

By 2008, the programme was showing initial signs of success but was hindered by narrow Internet bandwidth, prompting a move towards mobile technology. Acting on the requests of their pilot pool of rural practitioners, First Care built a step-by-step mobile phone guidance system called mguide, which rural healthcare providers can use when managing patients. mguide informs the practitioner what questions to ask, what signs and symptoms to look for, what examination to perform, how to distinguish a serious condition from a mild or moderate one, and how to rule out various probable aetiologies related to the condition, thereby narrowing possibilities until an accurate diagnosis and prescription can be made. If needed, the practitioner can download more comprehensive videos and visual aids on the mobile device.

Field tests show that the programme has increased both protocol compliance and standardisation of treatment. For example, untrained rural practitioners who previously were unaware that paracetamol dosages for children should be adjusted to body weight, can now draw upon World Health Organisation-developed standardised protocols for managing diarrhoea, fevers, respiratory conditions, and children and infant illnesses, by following the steps of mguide, in a language and via a medium with which they are comfortable.

Many doctors and policy makers support the goals of First Care, according to Dr Meenakshi Gautham, its founder-director. But First Care may face opposition in some states in India where local governments are less welcoming of informal rural practitioners.

Before First Care can grow further, therefore, the legal landscape needs
to change. Dr Gautham and her associates have filed a public interest litigation case in the Delhi High Court and have asked the government and the Medical Council of India to initiate shorter training programmes for certifying a future cadre of rural mid-level healthcare providers. At the same time, she is lobbying the government to create a training programme for rural mid-level healthcare providers that will allow them to enhance their knowledge while keeping up their practices. In order to be comprehensive and sustainable, therefore, First Care’s innovation must also simultaneously address India’s training and legal environments.

First Care is an example of an innovation that could be implemented in other Asian countries where local healthcare practitioners are needed to fill service gaps in rural areas.
INNOVATIONS IN CARE DELIVERY IN HOSPITALS AND OTHER HEALTHCARE INSTITUTIONS
The incidence in Asia of so-called developed-world diseases—including cancer, diabetes and heart ailments—has shown an alarming increase, as people have begun to dramatically alter their traditional eating habits and lifestyles.

But Asia is not well equipped to handle this emerging epidemic of non-communicable diseases (NCDs). Burdened in most parts by poverty and inequitable access to healthcare, the region is still coping with continuing high rates of infectious diseases. Exacerbating the situation is the inadequacy of the traditional acute model of healthcare, in which a patient seeks out a doctor, treatment is dispensed, and the affair concluded until the next bout of illness.

“The problem is that many people don’t know they have an NCD,” says Dr Do Young Kyung, assistant professor for programme in health services and system research at the Duke-NUS Graduate Medical School in Singapore. “Even if they know, they don’t feel they need care. Or if they feel they need [care], it is very expensive. If they can get the care, many of them don’t follow through with it because it needs self-management—they need to watch what they eat, exercise regularly and change their lifestyles. The problem is not something you can address at one point.”

Indeed, patient self-management is perhaps the first and most critical step in a holistic approach towards NCD care. Early intervention, awareness campaigns and technologies are crucial innovations to aid it. For example, the success of tobacco control advocacy, manifested in taxation and bans, has had an impact on the incidence of cancer. There is strong potential for similar awareness or prevention programmes to tackle other chronic diseases. More countries in Asia will see such patient- or provider-led campaigns in the coming years. They will also see innovative financing schemes, by which some of the revenue from taxation is used on health promotion or insurance at the primary healthcare level. Technology can also lend a hand through, for example, smartphone applications that help diabetes patients to better manage their blood-sugar levels. To keep up, healthcare institutions must innovate at all levels. Dr Fock Kwong-Ming, who is on the faculty of Changi General Hospital in Singapore and serves as a senior consultant there, has put in place a Disease Management Unit that acts as a hub to monitor patients in between their medical visits. Nurse tele-care operators call patients at home to guide them on self-maintenance of their chronic health problems. The unit’s first diabetes-control programme has had positive results, and encouraged the rollout of other schemes for chronic obstructive pulmonary disease, ischemic heart disease, stroke and hip-fracture patients.

Integrated care is gaining in popularity, and a number of advanced Asian countries have been exchanging generic frameworks and best practices, localising them where necessary. For example, in delivering integrated healthcare to diabetes patients, tele-care operators are helped by scripts that run through key points about eating and exercise, in a consistent and comprehensive manner. This involved creative reapplication of other business models, including borrowing information technology systems from computer firms and adapting customer relationship management processes from the banking sector into a patient relationship management system. The scripts used by the tele-care operators have been contextualised to the extent that they anticipate and offer tailored dietary advice for Muslim patients during the fasting month.

One difficulty with integrated healthcare is that it means different things to different people. For some, it suffices to integrate...
Innovations in care delivery in hospitals and other healthcare institutions.

In- and out-patient care. For others like Dr Fock, it should be end-to-end, or what he terms “prevention to palliation”, starting from before a disease takes root to the point where there is no recourse other than to ensure a certain quality in a patient’s remaining life. This approach requires cooperation between multiple stakeholders, from schools and community care centres to family clinics and public communication channels.

Integrated healthcare also depends on smooth workings between different parts of the healthcare supply chain outside the immediate physician-patient interaction. Take the new job of tele-carer. To optimise their contribution, a healthcare institution needs not only to develop this new skill set, but also to motivate the tele-carer whose contact with patients is mostly remote. Human-resource management innovations, such as town hall meetings, will help tele-carers to see the results of their work on their patients.

Integration can also have a societal dimension. For instance, in response to the different levels of care needed for a rapidly ageing population, several Asian countries have built dedicated compounds for the elderly, where they can live together with relevant healthcare personnel and facilities at close call. Two examples are the Chang Gung Health and Culture Village in Taiwan and the Sendai-Finland Wellbeing Center in Japan (see case study).

But opinions of such compounds are mixed. Some cheer the creation of dedicated healthcare and lifestyle facilities for the elderly, while others express discomfort at any initiative that may homogenise the needs of a varied elderly population. There is also often cultural resistance towards placing elderly parents and relatives in a “home”, no matter how well equipped it is.
Collaborating multiple skills and facilities to care for the elderly

On ending her daily call to her grandson in Tokyo, Emiko Nakamura uses a special programme on her mobile phone to check that her major health points are in a satisfactory range. If anything looks worrisome, she can ask for a professional healthcare specialist to visit her private room in the special village for the elderly where she resides. There is no cause for concern this morning, so she may take her pick of several leisure activities, ranging from Nordic walking to an aqua exercise pool. She decides to stroll to the gym, where she can use cutting-edge equipment for the specialised Bone Exercise activities, which, she has recently been taught, will help improve her bone density and prevent osteoporosis.

Emiko Nakamura is an imaginary person, but the Sendai-Finland Wellbeing Center is not. Dedicated to developing, testing and marketing healthcare innovations for elderly care, the Center has been in operation since 2003 in Sendai, a city in northeast Japan. Such elderly villages are beginning to appear across developed Asian nations as governments seek ways to provide for ageing populations.

Sendai-Finland Wellbeing Center stands out on several levels. First, it comprises a number of institutions rolled into one. It marries a nursing home called Sendan-no-Yakata to an intensive R&D unit. Sendan-no-Yakata, based on a Finnish model and run by the non-profit Tohoku Fukushi Corporation, provides rehabilitation and other services to elderly people within a residential environment.

The R&D Unit develops technology, services and policy innovations for ageing societies, and is supported by both the Sendai city and Finnish authorities.

Second, the Sendai-Finland Wellbeing Center is committed to engaging with the 11 entities, representing government, academia and business, which comprise it. In addition, other companies and universities from Japan and Finland have been roped in as major stakeholders. The consortium’s primary role is to invite potential players to join them and to facilitate collaboration, according to representatives from the Center.

They view the Center’s greatest innovation as the sustained collaboration among the public sector, academia and private companies, and the mingling of care with research facilities. The industry-specific, problem-oriented tactic has allowed a more strategic approach, where expertise from individual projects and initiatives can be accumulated and built upon over a period of time. But the Center’s greatest innovation is also one of its greatest challenges. Facilitating collaboration is a long-term and arduous activity—and requires the careful building of understanding and trust among the different parties.

The Sendai-Finland Wellbeing Center is an example of an innovation that can be replicated in other Asian countries dealing with ageing populations with a certain level of income.
CONCLUSION
As Asia’s healthcare market continues to grow exponentially, so too will the innovations emerging from the region. “I can’t think of anything that’s going to stop the continued improvement of healthcare in Asia,” says Mr Evans at Columbia Asia, echoing the views of several healthcare professionals.

Indeed, many expect Asia to be the frontrunner in healthcare innovation—spurred on by the demands of a burgeoning middle class for more accessible and equitable healthcare, the greying demographics of the region, and a business environment that is conducive to the rapid development and adoption of innovative drugs and therapies.

Although novel drug discovery may not happen soon in Asia, at least the stage is being set for the possibility of a blockbuster drug to come out of the region, if the R&D efforts of Western pharmaceutical companies, and their sprightly local counterparts are any indication. Meanwhile, Asia will enhance its participation in drug development through clinical trials, which will also shape the research for certain diseases that are becoming more prevalent locally.

Meanwhile, gaps in the healthcare system will offer opportunities for new hospital models, and pioneering ways to provide healthcare. Traditional medical institutions will have to adapt to meet this challenge, or fall behind. In Asia’s more developed countries, there is a good chance that publicly funded hospitals and healthcare systems can muster the resources and political support to become frontrunners in integrated healthcare delivery.

Absorbing and implementing these innovations will affect how healthcare institutions operate. But failure to innovate may lead to these institutions losing their competitive edge to smaller, nimbler, lower-cost providers. It may also exacerbate the serious threat that the rising incidence of non-communicable diseases poses to the whole healthcare system. Traditional institutions and professionals have to be part of a multiple-level, integrated solution that extends well beyond the healthcare system.

Indeed, one of Asia’s major healthcare challenges is not so much epidemiology, demographics or resources, but people often forgetting that “the solution to health access is not in the realm of health professionals or experts alone”, says Dr Kenneth Hartigan-Go, a professor specialising in healthcare at the Asian Institute of Management. “It involves the entire community, business and politics. It is everybody’s business. It takes a society to heal a patient.”

Healthcare firms at each point of the supply chain need to prepare themselves for the rapid changes facing the sector in Asia. Those that act early and innovatively to tackle Asia’s changing healthcare demands may well become the leaders in its future healthcare landscape.