

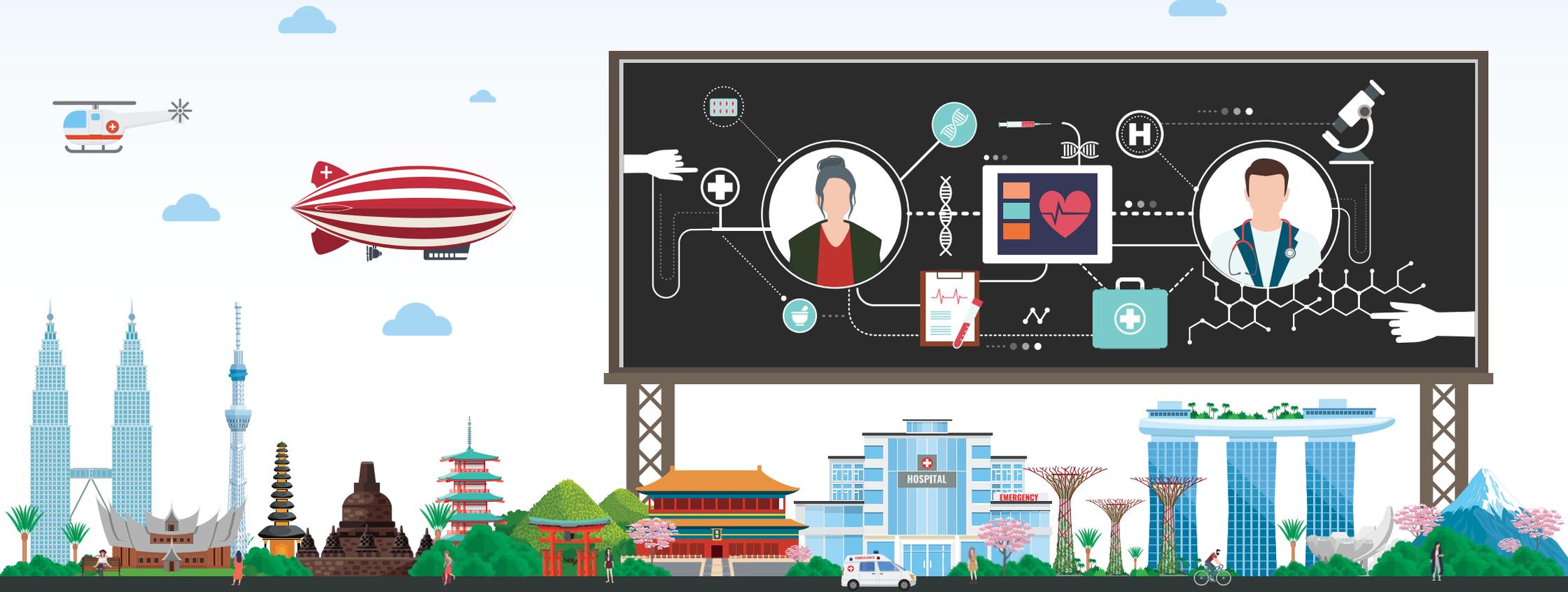
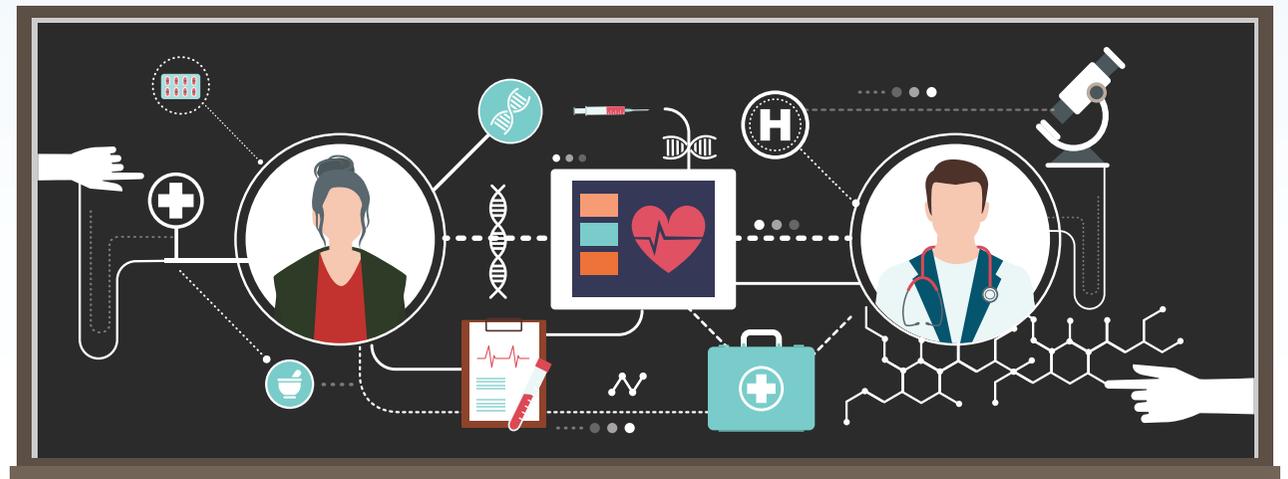
what the tech?

INSIGHTS BY FINN ASIA

ACCESS  
health international

YING  
FINN  
PARTNERS

# IMPACT OF DIGITAL INNOVATIONS ON HEALTHCARE IN ASIA





# Why technology is just what the doctor ordered



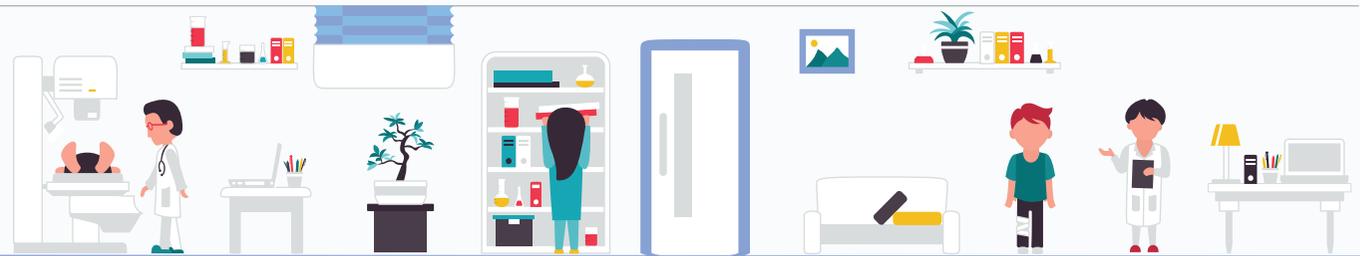
Healthcare is a complex industry that is rapidly evolving, with new technologies emerging every year that have the potential to drastically impact how people access and pay for care, how doctors diagnose and treat disease, and how researchers study human health and glean insights from patients' everyday lives.

By 2026, the [Asia Pacific healthcare market](#) is expected to have grown 19% to reach a value of US\$2.2 trillion, almost double that of healthcare markets in the US and Europe<sup>1</sup>. Industries that are both traditional to healthcare, such as pharmaceuticals and medical device, and nontraditional healthcare partners, from banks supply chain management and telecommunications, are well-poised to play a role in increasing access to high quality, affordable healthcare.

In this report, we take a look at how technology and digital innovation is transforming the *delivery, financing and discovery* of healthcare in Asia Pacific.

---

This is a What the Tech Report jointly produced by [ACCESS Health Futures](#) and [Ying Communications](#), A Finn Partners Company



*Healthcare in the Digital Age*



# Digital health brings patient care to where it is needed the most



IoT is enabling advanced diagnostics, at-home monitoring and ICT-enabled access to specialist care.

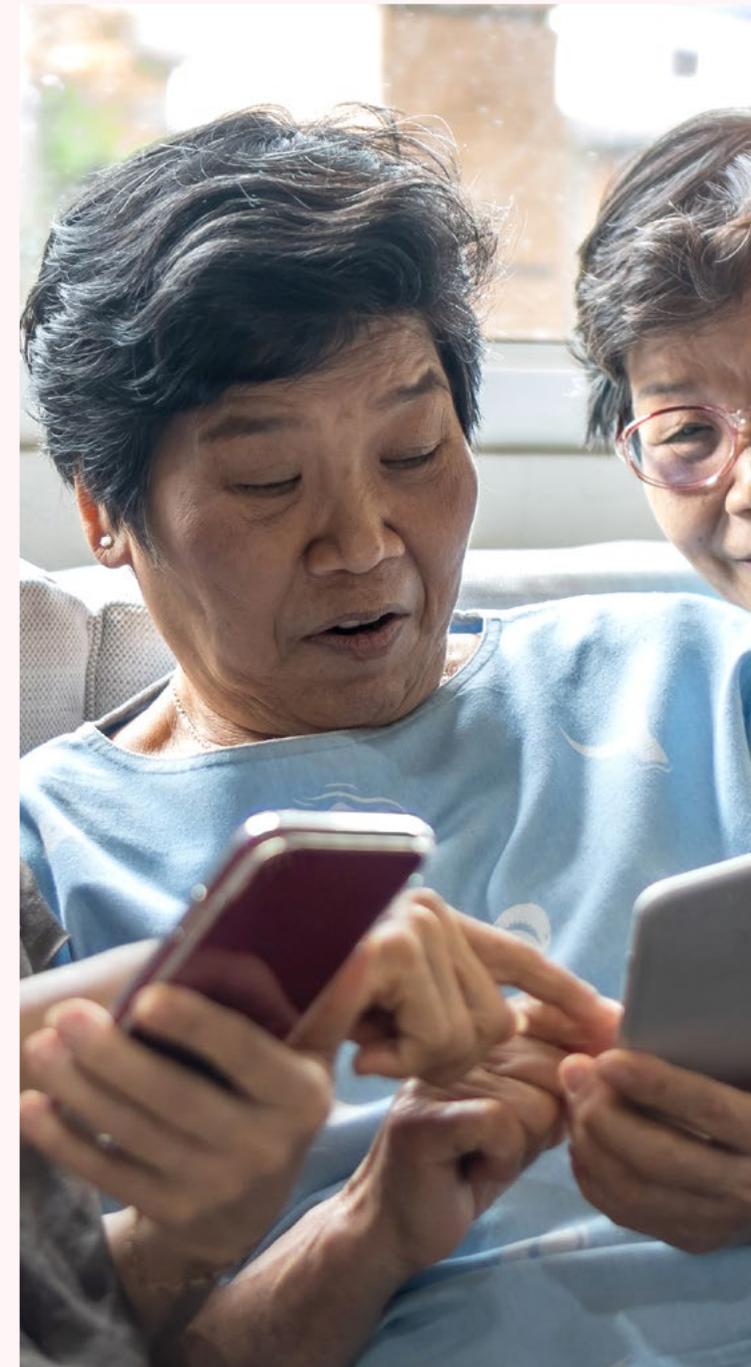
Increasingly, people have better access to a smart phone than to a doctor in most parts of Southeast Asia<sup>1</sup>. Less than a quarter of skilled health workers are stationed in rural areas<sup>2</sup> where half of the world's population reside. In contrast, even the most remote islands in Southeast Asia have internet connectivity<sup>3</sup>.

The urban-rural divide creates a stark difference in access to high quality healthcare, presenting ICT-enabled healthcare or “digitalhealth” as an immediate and practical answer to health worker shortfalls and rising demand for care. Digital technology is transforming how people access healthcare services, with telemedicine emerging as a fast-growing and high impact mode of diagnosis and treatment.

As urban cores become increasingly congested with traffic, telemedicine companies such as [HaloDoc](#) in Indonesia are delivering doctor visits and medication without delay. Public and private healthcare systems

are also experimenting with such solutions. In Singapore, [Raffles Medical Group](#) is launching a telehealth service and KK Women's and Children's Hospital releasing a triage [chatbot](#) in 2019.

The Internet of Things (IoT) is enabling advanced diagnostics, at-home monitoring and ICT-enabled access to specialist care. In women's health alone, startups such as [Biorithm](#), a wireless fetal heart rate monitoring device, and [UELifesciences](#), which has two products to detect and diagnose breast cancer and cervical cancer in lower and middle income countries, are increasing the quality and accessibility of women's healthcare.



<sup>1</sup> [Reaching 650 Million People: The role of digital technology in achieving universal health coverage](#), ACCESS Health and Cisco Systems (2019)

<sup>2</sup> [Rural health inequities: data and decisions](#), The Lancet (May 2015)

<sup>3</sup> The International Telecommunications Union (ITU) estimates that in seven ASEAN countries, over 90% of their populations have mobile connectivity. [Measuring the Information Society Report Volume 2 2018](#), ITU Publications, Geneva

Handheld radiology equipment, such as portable ultrasounds like the [Philips Lumify](#), can help physicians triage patients who live in remote areas, and can incentivize women to seek prenatal care.

At the systems level, digital health records are enabling integrated care pathways, putting data at patients' and physicians' fingertips, and helping national governments to match healthcare investments to local population health needs. With the use of technology, frontline health workers are working with startups such as [Allied World Healthcare](#) to upgrade their skills, collect robust household and community level data, and provide last mile delivery of care in Cambodia and the Philippines.

Clinical decision support systems are becoming standardized across healthcare systems, ensuring healthcare workers follow best practices and variability of care is reduced. With companies such as [Health Catalyst](#), robust data science has become a critical tool for continuous quality improvement.

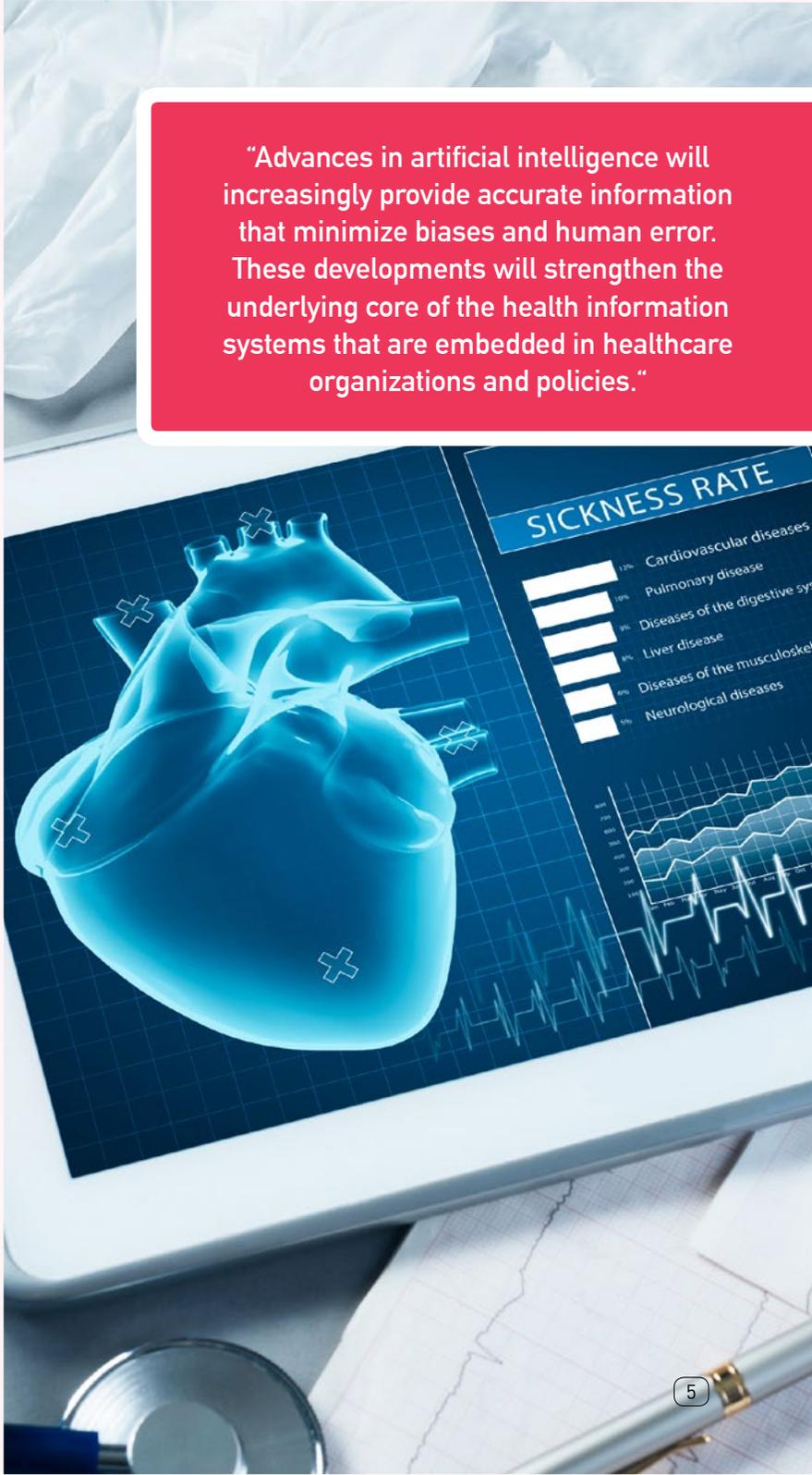
Advances in artificial intelligence will increasingly provide accurate information that minimize biases and human error. These developments will strengthen the underlying core of the health information systems that are embedded in healthcare organizations and policies.

Precision medicine, along with precision prevention and care, will rely on data from platforms and apps that capture people's biological markers and risk factors, wellness and health activities, as well as lifestyle activities such as spending and socialization, to provide a complete picture of the individual. This data can then be used to provide tailored health solutions.

National governments can enable data sharing and usage with robust cybersecurity and privacy laws that evolve with technological advances, national digital health metadata and data standards, and the human capital necessary to ensure regulations are implemented and enforced. As innovative startups and technologies gain regulatory clearance in Asia Pacific, these new models of care will proliferate.



**“Advances in artificial intelligence will increasingly provide accurate information that minimize biases and human error. These developments will strengthen the underlying core of the health information systems that are embedded in healthcare organizations and policies.”**





## Innovative fintech solutions deliver affordable healthcare to Asia

**O**ne of the most difficult aspects of healthcare is paying for it. Every year, 100 million people globally are pushed into extreme poverty due to healthcare costs. In eight out of ten Southeast Asian countries, more than a third of healthcare expenses are paid out-of-pocket by individuals.

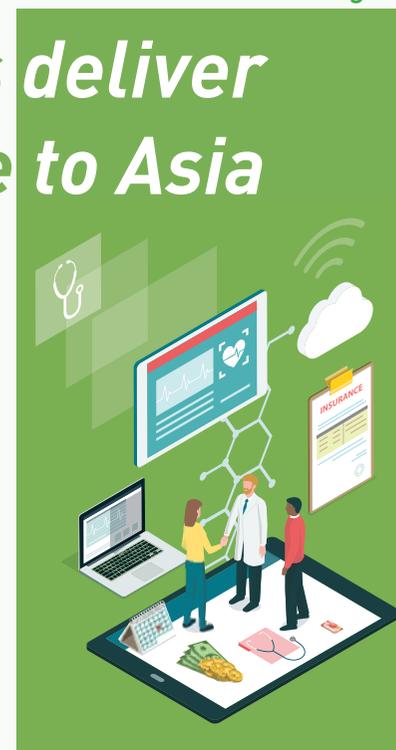
At the same time, cumbersome supply chain management, procurement and billing processes add significant backend costs to the healthcare system, driving up the cost of supplies, overhead expenditures and administrative costs, before a doctor ever sees a patient or fills a prescription.

Digital technology has an important role to play in helping people pay for and access the care that they need, when they need it, while avoiding financial hardship. Digital finance technology, or fintech, is commonly defined as the use of technology to deliver financial services. The digital financial products and services most relevant to healthcare include

digital payments, digital lending, crowdfunding, enterprise solutions and insurtech<sup>4</sup>.

While these products were developed for the finance industry, their applications in healthcare abound. Mobile phone-based healthcare savings accounts help individuals and families save for anticipated out-of-pocket medical expenses. [M-TIBA](#) is an innovative mobile health wallet solution started in Kenya which enables subscribers to save, send, receive and pay for medical treatment through their phone. A similar platform would be highly applicable in Southeast Asia.

healthcare financing



**In 8 out of 10 Southeast Asian countries, more than a third of healthcare expenses are paid out-of-pocket by individuals, without the aid of insurance or other financial support.**

<sup>4</sup>[The ASEAN FinTech Ecosystem Benchmarking Study](#), Cambridge Centre for Alternative Finance, the Asian Development Bank Institute (ADBI) and FinTechSpace



Digital technology has an important role to play in helping people pay for and access the care that they need, when they need it, while avoiding financial hardship.

Low-to-no interest loans obtained at the point of care, such as India-based [Arogya Finance](#), help patients to access care immediately and avoid the risk of seeking funds from informal lenders or of skipping treatment entirely. Crowdfunding platforms, such as [Shuidi](#) in China and [Kitabisa](#) in Indonesia, have taken off as an alternative to private insurance in areas with large coverage gaps and can help patients cover the cost of expensive medical treatments. In Singapore, SingHealth patients are using mobile payment options integrated into the [Health Buddy](#) app.

While digital financial applications are being tested and used in healthcare globally, they are still limited in size

and number, particularly in Southeast Asia. There is a significant and growing interest in testing, adapting and scaling these models in this region.

The most transformative and underappreciated impact of digital technology may happen behind the scenes, with more efficient procurement, billing and claims reimbursement; more efficient supply chain management; and less manpower-intensive administration. An expansion of enterprise micro-lending solutions can help small clinics to establish credit, keep medicines in stock and invest in facilities and services upgrading<sup>5</sup>, thereby improving the quality of care provided and access to such care.

At the same time, integrated partnerships between financial services companies and healthcare services organizations, including digital health companies, will have a significant role in bringing high quality, affordable care to where people live and work.

<sup>5</sup> [Fintech for Health](#), Health Futures (Oct 2017)



“

Digital technologies—be they mobile applications, computer games, or wearable devices—are generating more and better input data for medical and health research.

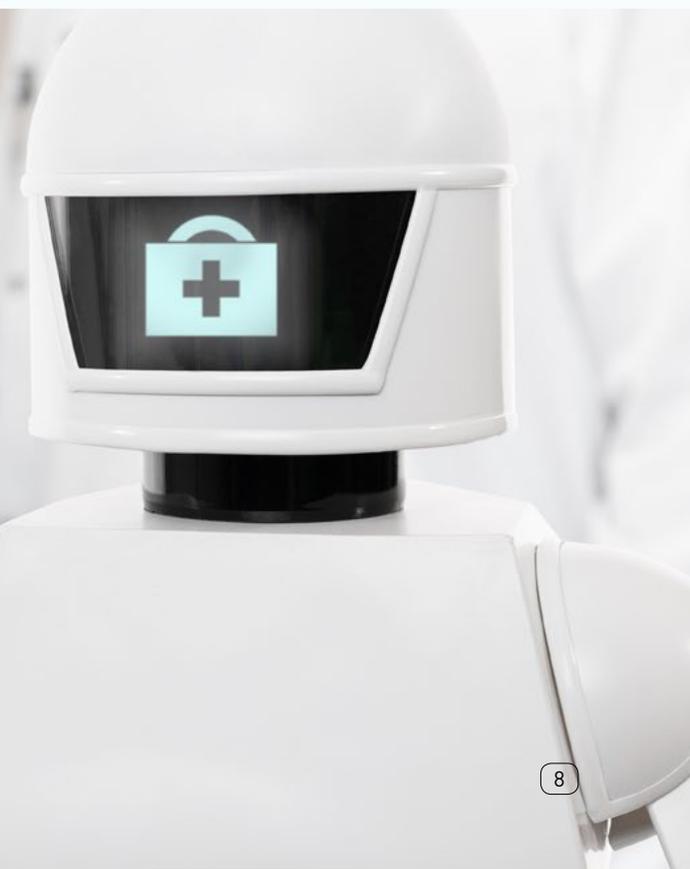
”

Digital technologies designed to treat or prevent a specific disorder or disease —namely digital therapeutic technologies— are on the rise, and they are making health data collection and aggregation easier.

In June 2018, a data center quietly opened in China’s Guizhou province. It was the final piece of the puzzle to complete China’s national health data network—an ambitious project combining five data centers across the country, each tasked to collect detailed health profiles for citizens under the center’s jurisdiction.

China’s move to extensively collect citizens’ health profiles reflects data trends of the current era. Today, improved digital technology makes harvesting health data easier, faster and less expensive for researchers.

There were a few ways researchers could use data from digital and medical technologies. One is through basic data analytics using statistical inference. Researchers have also used computer simulations to test hypotheses about the efficacy of certain health interventions. Machine learning methods are also beginning to take hold in the medical and health industry. In fact, machine learning and artificial intelligence are moving data-driven health research beyond simple testing of hypothesis into *predictions*.



**More data, better insights  
delivered by AI and machine learning**

healthcare discovery

For instance, [Wellthy Therapeutics](#) is an AI-powered mobile application designed in India to help Type-2 diabetes patients change their lifestyle. Applications like this could generate personalized data that then feed into research on effectiveness of lifestyle changes for Type-2 Diabetes patients.

Other AI-powered medical advices—for example, [Ping An Good Doctor](#) from China—or health management solutions such as [Babylon](#) from the UK—can also produce high-quality health data that inform research on the effectiveness of certain health interventions.

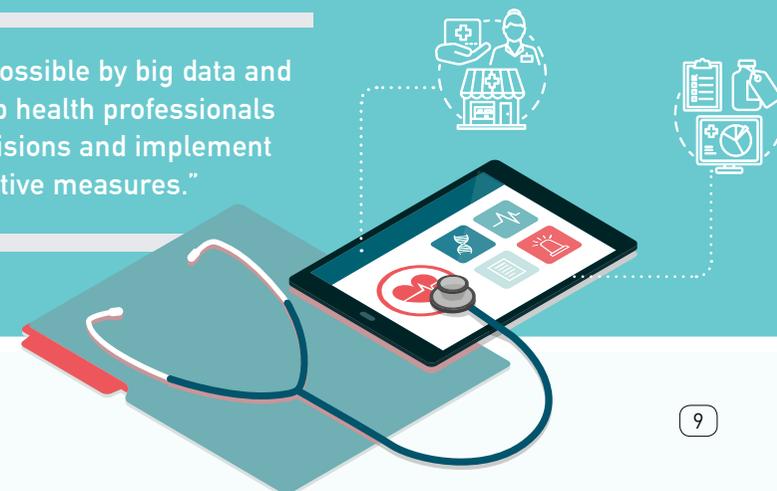
In Asia, where mobile phone and internet penetration is high, researchers have also made use of user posts on social media to monitor adverse drug reactions among patients. Researchers in Korea's Yonsei University are developing computer games that can detect a child's risk of cognitive and emotional problems. In Singapore, a health technology startup, [RingMD](#), uses wearable devices to collect patient's heart rate and body temperature data. Singaporean researchers are also exploring how genomic information and medical records can feed into precision medicine research, which means providing personalised medicine best suited for the patient.

Critically, digital technologies also allow various forms of data to be aggregated for research. The [Smart Health-Assist](#) program in Singapore, for instance, developed at-home sensors to monitor patients, and researchers are exploring possibilities to incorporate sensor data with other forms of medical, economic, geographical or personal identification information.

In China, disease-specific data aggregation platforms are on the rise. The China Kidney Disease Network, for instance, brings together different sources of data on kidney diseases. The rise of cloud-based medical platforms also helps to combine health and medical data. As large digital ecosystem creators such as Health Catalyst enter Asia Pacific, patients in remote areas will be connected to clinical trials across the world, and thereby able to access the most innovative treatments, while furthering medical research.

Digital technologies—be they mobile applications, computer games or wearable devices—are generating *more* and *better* data for medical and health research. This will translate into better discovery and ultimately, better patient care—the ultimate goal of everyone in the healthcare ecosystem.

“Predictive analytics, made possible by big data and new data analytics, will help health professionals make better diagnostic decisions and implement more effective preventive measures.”





## Digital health is the future

Despite slower economic growth in Asia Pacific due to trade uncertainties, according to the World Bank, the region is still expected to grow at a rate of 5.8% in 2019<sup>6</sup>. Demand for high quality healthcare products and services will continue to rise as the middle-income segments of the population grow and age or as lifestyles change.

The biggest opportunities for growth and impact will be through non-traditional partnerships. As the world watches to see how the [Amazon, Berkshire Hathaway, and JP Morgan joint venture](#) will influence care in the U.S., industry players in Asia Pacific are taking note of the transformations will take place in their region.

In the same way that digital payments and e-commerce have disrupted the banking and retail industries, less expensive, more ubiquitous usage of technology will disrupt traditional healthcare service provision to bring about better and more patient-centric care.



To find out more about communicating in the brave new world of tech and health, talk to us at [whatthetech@finnpartners.com](mailto:whatthetech@finnpartners.com)

To find out more about how you can partner with innovators in the healthcare ecosystem, talk to Access Health International at [healthfutures@accessh.org](mailto:healthfutures@accessh.org)

<sup>6</sup>[East Asia Pacific Economic Update, October 2019: Weathering Growing Risks](#), World Bank



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

Find us at <https://accessh.org/>



Founded in May 2001, Ying Communications, a Finn Partners company, provides integrated communications services to some of the world's most innovative companies. We specialize in developing creative and compelling programs for industries from technology to health, oil & gas to travel that build brand awareness, engage communities, and generate and nurture leads for our clients. We bring your stories to life in Asia

Find us at [yingcomms.com](http://yingcomms.com) and [LinkedIn](#)



Founded in 2011, FINN is an award-winning, integrated marketing agency on pace with the pulse of health. Navigating the health ecosystem requires communication skills in aligning patient, payer, policymaker and product innovator interests. FINN Health clients span biopharma, devices, diagnostics, health systems, patient groups, service and technology sectors. The agency represents many of the world's largest and most innovative healthcare companies. FINN has won the Holmes Healthcare Agency of the Year and is included among the Top Five Global Healthcare Agencies.

Find us at [finnpartners.com](http://finnpartners.com) and [LinkedIn](#)