

POLICY BRIEF

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A brief overview of the digital health landscape in Malaysia

Highlights

- Investing in digital solutions could **dramatically improve productivity and efficiency**, with benefits in both patient outcomes and cost.
- It could help address the challenge of **maintaining and growing Malaysia's healthcare services** and ensuring quality, affordable, universal, and patient-centric care.
- Improving the availability of analytics and understanding of the analysis of digital health data at the policy level are essential to **ensure that better and improved strategic decisions are made**.
- Allows for **optimizing of scarce resources; bring greater efficiencies** and development of an integrated and responsive healthcare system.
- Technology is helping to deliver **individualised and personalised treatments and care** through patient centric solutions intended to help patients take responsibility for their own health and meet needs at different stages of their healthcare journey.
- Challenges include concerns over privacy and security of patient's health and medical information, lack of regulatory frameworks or guidelines, capacity, clinical leadership and accessibility issues for those who are technologically illiterate, lack access to electronic devices, internet and electricity.
- It may not benefit regions with poor internet connectivity or coverage gaps, those in the lower income bracket or living in remote areas.

Background

Malaysia has a dual-tiered system of healthcare services: one led by the government and funded by taxpayers, and the other provided by the private sector. Together, they provide universal health coverage through a public-private model. Citizens are free to choose between the two. The Ministry of Health acts as funder, service provider and regulator.

Improvements in primary healthcare, sanitation, food safety and protection against infectious and communicable diseases, have contributed towards increased life expectancy with gains of more than twenty years since 1957. As a result of healthcare success, people are living longer. However, this has not necessarily translated to better quality of life.

The National Health and Morbidity Survey 2015 found that obese Malaysians currently make up 17.7 percent of the population, compared to 4.4 in 1996. 17.5 percent aged 18 years above have diabetes, compared to 11.6 in 2006.

The growing burden of non-communicable diseases is arguably the most significant health and financial threat to the sustainability of the existing healthcare system.

Investing in digital solutions, if affordable, could dramatically improve productivity, and efficiency, with benefits in both patient outcomes and cost, including dealing with the burden of NCDs.

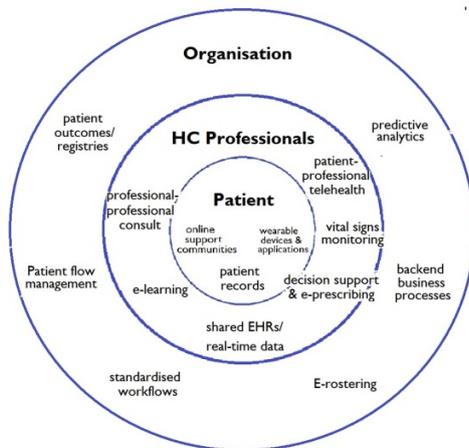
It could help address the challenge of maintaining and growing Malaysia's healthcare services and ensuring quality, affordable, universal, and patient-centric care.

Where we are today – opportunities for transforming healthcare

The **Malaysian Health Transformation Initiative** under the Ministry of Health aims to bring public and private health systems together as part of efforts to build a sustainable and resilient health system providing equitable, affordable and accessible high quality health service.

The healthcare sector has large amounts of data for the purposes of patient care, compliance and record-keeping. **Improving the availability of analytics and understanding of the analysis of that data at the policy level** are essential to ensure that better and improved strategic decisions are made. It allows for the possibility of optimizing scarce resources; bring greater efficiencies and development of an integrated and responsive healthcare system.

This is behind the emphasis on big data in the **Malaysian Health Data Warehouse** project undertaken as part of healthcare reform (see *Examples of government and private sector initiatives*).



The evolving digital health landscape

In the area of **healthcare predictive analytics**, historical data on medicine and equipment utilization, and doctors mobilisation will help guide and manage decision-making regarding resource mobilisation, capacity building and improving operational efficiency.

Tapping into the increase in the availability of highly detailed data about health and fitness, gathered from sensors on wearable technology to health-tracking applications and devices, there is an evolving emphasis on **patient-centred healthcare where technology helps to deliver individualised and personalised treatments and care**.

Digital health solutions provide tools to **help consumers or patients take responsibility for their own health** and

meet their needs across different stages of their healthcare journey — from diagnosis and treatment, to post-discharge follow-up (see *Examples of government and private sector initiatives*).

It can help patients **achieve improved health outcomes** through better understanding of health data (e.g. blood pressure, glucose levels), better adherence to medication, provide mental health support or address the problem of long-distance monitoring of patients.

Healthcare providers are also exploring the potential of digital health, in monitoring and treating patients remotely via Internet-connected sensors and medical devices.

This will potentially be valuable in **the management and treatment of chronic conditions** which affect the aging population, allowing them to receive medical check-ups in the comfort of their own homes, and bring medical care to communities in remote locations.

By fully embracing digital transformation of healthcare systems, Malaysia will be better positioned to achieve the objectives of **improving the patient experience; improving clinician experience and productivity, lowering the healthcare cost per capita, and improving population health and access to care**.

Limited resources and increasing demand driving innovation

Although the quality of Malaysia's healthcare system is rated the best among upper-middle-income countries, households face higher out-of-pocket health expenditures compared to their counterparts in those countries. Malaysia's budget for healthcare is actually 3 percent lower than the World Health Organisation (WHO) recommendation of 7 percent.

Healthcare inflation in Malaysia stood at 11.5 percent last year, the third-highest out of 11 Asian countries surveyed. This is projected to rise up to 12.7 percent in 2018.

The digital space is seen by patients as **an alternate medium to push back against rising medical inflation**. For example, brick and mortar clinics are forced to compete against online services which provide medical consultation at competitive rates.

The challenges of limited public resources, rising costs, increasing demand for more diverse healthcare services, and higher expectations on the availability, efficiency and quality of care, have led to the **private sector to respond with innovative digital solutions through mobile phone applications, websites, and wearable technology**.

Challenges

Concerns over privacy and security of patient's health and medical information could be a barrier in the adoption of digital healthcare. Data in cloud storage is vulnerable to breach and compromise.

A significant challenge faced in digital health in Malaysia, is that **clear frameworks, policies and guidelines have yet to be firmly established** to regulate the evolving Malaysian landscape. Capacity and clinical leadership to support participation continues to be present.

Digital health services would also only be accessible to those who are technologically literate with access to electronic devices, internet and electricity. **It may not be able to reach regions with poor internet connectivity or coverage gaps, and the most vulnerable of communities, such as the poor and those living in rural and remote locations.**

Examples of government and private sector initiatives

The Malaysian Health Data Warehouse (MyHDW)

The Malaysian Health Data Warehouse acts as a central electronic database compiling and streamlining health-related information from public and private hospitals to supply key data and information for the optimal running of the health system, health surveillance and research.

Currently in Phase One where data from 2.5 million inpatients from all government and public hospitals, military hospitals and day care unit services is being collected.

Phase Two aims to collect 70 million outpatient medical data from other healthcare facilities such as health and specialist clinics.

A possible outcome for this project is when a person's medical records are shared among all public health institutions, the patient's journey is simplified from primary to tertiary care, as any doctor treating the patient would have full access to his or her medical records

MyHDW is being developed by the Ministry of Health in collaboration with Mimos Bhd, a technology provider under the Ministry of Science, Technology and Innovation.

Microsoft – CREST (Collaborative Research in Engineering, Science & Technology) Health Innovation Hub

This hub focuses on five core virtual health scenarios utilising Internet of Things (IoT) – Tele-health, smart access, remote patient monitoring, drug adherence, and corporate wellness.

It provides end-to-end services for developers, start-ups and researchers seeking to co-innovate and co-sell health solutions from conceptualization to creation, and domestic commercialization of products.

Dengue Outbreak Prediction platform

Artificial Intelligence in Medical Epidemics (AIME) conceived an algorithm-based approach to monitor dengue outbreaks based on epidemiological data.

Provides estimations of the exact geo location and timeframe of the next dengue outbreak, up to three months in advance, and can recommend anti-dengue measures for the area within a 400-metre radius. It has an improved average accuracy of 86.4%.

Currently utilised by the Government to support management and curbing dengue outbreaks.

DoctorOnCall Malaysia

DoctorOnCall is Malaysia's first online medical consultation platform which provides healthcare services via chat, audio and video calls. Online clinical consultation and non-emergency medical care is provided through consultation with healthcare professionals registered with the site. Services include delivery of medication

Boasts waiting times of between 5-7 minutes and affordable consultation fees (RM20 – 80).

Naluri

Naluri works with insurers, employers and hospitals to offer a psychology based preventive health program for at-risk policyholders and employees, and a rehabilitative program for chronic illness patients.

Through the Naluri app, users are connected to dedicated health psychologists who provide personalised coaching and use evidence-based Cognitive Behavioural Therapy and Motivational Interviewing techniques to strengthen users' mental resilience and resolve to achieve and sustain better health outcomes such as weight loss, better stress management, or reduction in blood pressure or blood sugar levels.

The Galen Centre for Health and Social Policy is an independent public policy research and advocacy organisation based in Kuala Lumpur, Malaysia. It is committed to an approach which supports individual freedom, choice, and innovation in the development of patient-centric and community-focused health and social sectors.

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