Malaysia: a primary health care case study in the context of the COVID-19 pandemic

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Executive Summary

Malaysia is a multicultural society, comprising a federation of 13 states and three territories in a parliamentary democracy. As an upper-middle-income country, Malaysia's society and economy has transformed in recent years, with the population benefiting from a well-established health care system that offers equitable and universal access, and strong social and economic growth. This case study examines key aspects of primary health care (PHC) in Malaysia to inform future policy and practice, incorporating lessons learned during the COVID-19 pandemic between January 2020 and April 2022. It identifies opportunities to strengthen PHC, including re-orienting services towards wellness, improving community empowerment, and harnessing the potential of digital health and public-private partnerships.

Malaysia spends approximately 5.1% of its annual gross domestic product (GDP) on health care (public and private), with a pledge to further increase this spending (1). Health care services are primarily funded from taxes supporting public primary care centres and hospitals, with a fast-growing private sector of clinics and hospitals funded via out-of-pocket (OOP) expenditure and supplemental financial coverage such as employer-based insurance. Established to provide rural health services, the primary care system provides care across the continuum with an approach that is inclusive of vulnerable groups and that involves initiatives to enhance community involvement and empowerment. As the main provider, funder and regulator of health services, the Ministry of Health (MoH) delivers services via a network of primary care clinics, including clinics that incorporate dental services. However, these services are under strain due to workforce shortages, and the demographic and epidemiological transition.

The COVID-19 pandemic further strained efforts to provide primary care. Nonetheless, primary care services were effectively mobilized to conduct screening and contact tracing and to implement a national immunization programme.
Introduction and national context

This case study examines key aspects of PHC in Malaysia to inform future policy and practice, incorporating lessons learned during the COVID-19 pandemic between January 2020 and April 2022.

Malaysia is a federation of 13 states and three federal territories in a parliamentary democracy. The country has a multicultural society, with an estimated population of 32.6 million people (92.6% citizens, 7.4% non-citizen). The multi-ethnic population is 69.9% Bumiputera (Malay and Indigenous), 22.8% Chinese, 6.6% Indian and 0.7% of other ethnicities. Since the First Malaysia Plan (1966–1970), health systems development has been a consistent focus of national development plans, including in the latest one, the Twelfth Malaysia Plan for 2021–2025 (2). Malaysia currently spends approximately 5.1% of its GDP on health care, where public spending accounts for 2.9% (3,4). In 2020, PHC accounted for 25.9% of total expenditure on health (THE) for the public and private sectors (5).

Two principal successes to date have been the strong financial risk protection afforded to the population, especially to the poor, and the broad and equitable access provided through the public health care service delivery system. Accomplishing equitable coverage remains a fundamental health care goal. The WHO World Bank 2021 Global Monitoring for Universal Health Coverage report gives an index value of 76 for Malaysia (6), an increase from 70 in 2018 (out of 100).

The public health care system is built on tax-based financing (7), which allows for universal provision of health care with nominal user charges, while the private sector provides services from clinics to hospital-based care, funded from private health insurance and OOP expenditure. Both sectors deliver primary care services, with public health clinics, community clinics, and maternal and child health clinics operating in the public sector. While these clinics are primarily managed by the MoH, services are also provided by the Ministry of Defence and the Ministry of Women, Family and Community Development, as well as the Ministry of Higher Education. The private sector includes private general practitioners (GPs), non-profit organizations and educational bodies. From 2011 to 2016, health clinic density stood at around 32 clinics per 100 000 population (ranging from 32.1 to 32.7 clinics per 100 000 population) (8). In 2020, there were 2890 public clinics, including maternal and child clinics and rural clinics, while the private health sector had 8222 registered clinics (9). The public primary care sector provides almost two-thirds of outpatient care, where most people seek care for noncommunicable diseases (NCDs).

Governance of public primary care services is overseen by the Family Health Development Division of the MoH. The State Health Departments and District Health Offices implement various programmes at the grassroots level. Within the MoH, the focus on primary care services also encompasses oral health services. The public primary care system covers a wide range of services, from outpatient care and ambulatory care, through to specialized care such as rehabilitation services, mental health and health services for specific populations. Private services offer clinical care, screening and vaccination. In contrast to the public...
sector, where gatekeeping requires referrals for secondary care, in the private sector clients can access specialist care directly. The private sector is governed through the Private Health care Facilities and Services Act 586, which requires the licensing and registration of private facilities to meet basic standards. At the time of writing in 2022, there was no regulation to govern the performance of the private sector.

Malaysia has achieved notable health gains from its well-developed health system, good access to clean water and sanitation, and strong economic programmes. For example, maternal mortality rates improved from 30.6 per 100 000 women of reproductive age in 2000 to 29.4 per 100 000 women of reproductive age in 2020. As a result, the country experienced significant population growth since the 2000s and improvements in health status (see Table 1). Nevertheless, challenges include a demographic transition towards an ageing population, an epidemiologic transition to NCDs and the persistent presence of communicable diseases (Fig. 1). The emergence of COVID-19 in 2020 challenged PHC.

Figure 1. Five principal causes of death in Malaysia (2020, %)

- Malignant neoplasms of trachea, bronchus and lung: 2.5%
- Transport accidents: 2.9%
- Cerebrovascular diseases: 8.3%
- Pneumonia: 11.4%
- Ischaemic heart diseases: 17.0%

Source: Department of Statistics, 2021 (10).
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Table 1. Key demographic and health indicators in Malaysia

<table>
<thead>
<tr>
<th>Population and vital statistics</th>
<th>2000</th>
<th>2010</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total population (million)</td>
<td>23.30</td>
<td>28.60</td>
<td>32.58</td>
</tr>
<tr>
<td>Total population density (per km²)</td>
<td>71</td>
<td>87</td>
<td>99</td>
</tr>
<tr>
<td>Annual population growth rate (%)</td>
<td>2.4</td>
<td>1.8</td>
<td>0.2</td>
</tr>
<tr>
<td>Total fertility rate (number of live children born per woman of reproductive age)</td>
<td>2.9</td>
<td>2.1</td>
<td>1.7</td>
</tr>
<tr>
<td>Crude birth rate (per 1000 population)</td>
<td>24.5</td>
<td>17.2</td>
<td>14.4</td>
</tr>
<tr>
<td>Crude death rate (per 1000 population)</td>
<td>4.4</td>
<td>4.6</td>
<td>5.1</td>
</tr>
<tr>
<td>Maternal mortality ratio (maternal deaths per 100 000 live births)</td>
<td>30.6</td>
<td>26.1</td>
<td>29.4</td>
</tr>
<tr>
<td>Neonatal mortality rate (per 1000 live births)</td>
<td>5.0</td>
<td>4.3</td>
<td>3.9</td>
</tr>
<tr>
<td>Infant mortality rate (per 1000 live births)</td>
<td>6.5</td>
<td>6.7</td>
<td>5.7</td>
</tr>
<tr>
<td>Under-5 mortality rate (per 1000 live births)</td>
<td>8.9</td>
<td>8.4</td>
<td>6.9</td>
</tr>
<tr>
<td>Life expectancy at birth (in years)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>70.2</td>
<td>71.7</td>
<td>72.8</td>
</tr>
<tr>
<td>Female</td>
<td>75.0</td>
<td>76.8</td>
<td>77.8</td>
</tr>
</tbody>
</table>

Sources: Ministry of Health Malaysia, 2019 (8); Department of Statistics, 2021 (10).

Methodology

Five strategic actions from the WHO Regional Framework on the Future of Primary Health Care in the Western Pacific Region (11) guided data collection and analysis of PHC strengths and challenges. These are: i) appropriate service delivery models; ii) empowered individuals and communities; iii) fit-for-purpose PHC workforce; iv) PHC financing; and v) a supportive and enabling environment.

The case study was conducted in two phases. First, published documents relevant to the Malaysian PHC system were identified. The MoH website was selected as the primary source of government documents. This was supplemented with the identification of other grey literature through stakeholder consultations, followed by snowballing to identify sources on other websites and from reference lists. Data were extracted and synthesized narratively against the five PHC strategic actions. Second, stakeholder consultations with representatives from the Ministry of Health Family Health Development Division, Nutrition Division, Oral Health Programme and Pharmaceutical Health Programme were conducted to obtain insights into national PHC policy processes and triangulate findings.
Appropriate service delivery models

Primary care services were established prior to independence in 1957 with a focus on maternal and child health. Since then, services were expanded to address conditions including NCDs, communicable diseases and oral health. Policies have been developed centrally, then implemented at state and district levels by health offices led by a public health physician. The scope of services ranges from preventive and promotive to curative and rehabilitative elements, striving for a life-course perspective from newborns through to older persons (Fig. 2).

To further strengthen primary care provision, the MoH introduced family medicine specialists (FMS) in 1997, in parallel with the development and enhancement of primary care facility infrastructure. This was followed by the Family Doctor Concept in 2014, introduced under the MoH Transformation Programme that ensured 170 clinics have an established PHC team. To tackle the growing NCD epidemic, the Enhanced Primary Health care (EnPHC) initiative was introduced, covering activities on community empowerment and health awareness, person-centred care bundles, and integrated care networks, as well as a systematic modified workflow with task-shifting and empowerment of paramedics. The introduction of a care coordinator role further empowered paramedics to perform standardized NCD screening and risk assessment, and medication refills resulting in better NCD care management (12,14). Other reforms included the implementation of a triaging system in clinics which improved patient traffic, clinical and prescribing audits to monitor the quality of patient care, and refinement to the patient referral flow within clinics and across facilities (14).

The MoH also focuses on services for rural locations using mobile health and dental teams. Primary care services are offered to detainees in police custody, immigration detention centres, National Anti-Drugs Agency Centres and amongst other prisoners. Primary care services also include both oral and mental health at public and private clinics (Fig. 3). The Oral Health Programme, MoH, is committed to improve oral health, with an emphasis on marginalized and vulnerable populations. Mental health screening services have been offered in all public clinics since 2011. A key programme is the Healthy Mind screening programme (Program saringan minda sihat) for those aged 13 years and above.

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**Figure 2. Snapshots of ‘womb-to-tomb’ services in Malaysia**

| Maternal health services | • A steady decline of MMR from 280 per 100 000 live births (LBs) in 1957 to 29 per 100 000 LBs in 2020 | • A pre-pregnancy care (PPC) programme targeting women with chronic diseases such as hypertension and diabetes mellitus was integrated in health clinics to reduce maternal deaths |
Child health services
- Comprehensive services from perinatal to less than 6 years old
- Newborn Screening Program
- National Immunisation Programme (NIP) since 1950 to reduce the burden of vaccine-preventable diseases (VPDs) and improve the under-5 children's health status.
- Perinatal and under-5 mortality surveillance.
- Services to improve quality of child health services such as approach to unwell children under 5 (ATUCU-5)
- Under-5 mortality rate has reduced to more than 50% from 1990 to 2015.

School health services
- Program Bersepadu Sekolah Sihat (PBSS) is a programme based on Health Promoting School and Healthy Setting concept by WHO.
- The PBSS put emphasis on the physical, mental and social well-being of the students and to create a more conducive school environment.

Adolescent health services
- Aims to develop and strengthen health programme and services for the adolescent population through the National Adolescent Health Policy and Plan of Action.
- In response to the WHO evidence that adolescent mothers (age 15-19) are more likely to die in childbirth the adolescent health programme (AHP) contributed to a reduction in the adolescent birth rate (ABR) from 28 per 1000 in 1991 to 8 per 1000 in 2020.

Person-with-disabilities (PWDs) health services
- Domiciliary health care services and palliative care in PHC facilities were also conducted for adult PWDs.

Adult health services
- National Cervical Cancer Screening Programme and Breast Cancer Prevention Programme were some of the multi-sectoral programmes to promote awareness, health education and for early detection of cervical and breast cancer.
- The National Men's Health Action Plan 2018-2023 is a foundation used to promote gender equity, enhance men's health and quality of life.

Elderly health services
- Holistic elderly services were provided in line with the National Health Policy for Older Persons and moving towards healthy ageing.
- Activities such as health promotion, health screening and assessment, medical examination consultation, rehabilitation services, as well as recreational and social activities through Kelab Warga Emas (senior citizens club in health clinics).

Sources: Family Health Development Division, 2019 (12); Prime Minister's Department, 2015 (13).
Key service delivery strengths include strong political commitment to providing quality health care. The National Policy for Quality in Health Care (NPQH) is a government initiative launched in 2021 to strengthen the current monitoring, evaluation and stewardship of quality commitment in health care (15). This policy assures the sustainability of quality in health care and continuous improvement of services provided by the public and private sector (15).

Primary care quality is monitored using several indicators, such as chronic health disease management, average waiting time for patients, as well as average reporting time for notifiable diseases. The continuous improvement of health care is reflected in various key initiatives, including the antimicrobial stewardship programme established in 2019. The programme aims to optimize antimicrobial use to reduce the pressures that drive the emergence of resistance and reduce excessive costs due to suboptimal antimicrobial use (12). Clinical audits and surveillance findings are routinely reported in this programme, which encourages accountability among health care practitioners to enhance quality of care.

The private sector can opt for a voluntary accreditation through the Malaysian Society for Quality in Health Medical Clinic Accreditation (16). This accreditation provides GPs with an effective means to assess their level of performance against applicable national standards and sets a benchmark against which private
providers can assess organizational performance. A limitation to this monitoring tool is that it only encompasses basic competency sets and the infrastructure of private practitioners.

Key service delivery challenges include the demographic transition and ageing population. To address this, the MoH at the time of writing is launching the Malaysia Health White Paper (1), which will emphasize wellness, health promotion, preventive care and community-level health care delivery, highlighting the role and importance of PHC (1).

As in many countries, COVID-19 was a massive challenge (17). COVID-19-specific response strategies were introduced such as dedicated triage and screening for suspected cases. Essential services were continued under new norms, including home visits for ante/postnatal care and childhood vaccination. Oral health essential services were also provided following new norms, such as for school dental services. Pharmaceutical “value-added services” were promoted to avoid NCD patients defaulting on their medications, which involved prescription medicines being dispensed via mail or drive-through pharmacies. Nevertheless, the pandemic adversely impacted multiple population groups, especially migrant workers and refugees.

The COVID-19 pandemic highlighted the importance of a systematic approach towards resource management, public-private collaboration and harnessing digital technologies in primary care models. As part of the pandemic response, virtual COVID-19 assessment centres were established, guidelines and protocols for home monitoring were developed, and targeted mobilization of health care personnel was implemented, while the private sector was involved in screening and vaccination activities.

The National COVID-19 Immunization Programme (PICK) was established as a multi-ministerial endeavour and various approaches were taken to reach target groups, from human resource mobilization, mobile teams, private sector involvement and volunteerism. By March 2023, 84.3% of Malaysians were vaccinated against COVID-19, including 91.9% of adolescents aged 12–17 years and 43.5% of children aged 5–11 years (18).

**Empowered individuals and communities**

A collaborative approach engaging communities as partners in health care is essential to achieve equitable, people-centred PHC. Multiple programmes aim to encourage community participation in health care planning, including to identify the needs of the community and develop strategies to address them. Programmes to support community-based health initiatives and provide capacity building are implemented at both national and local levels and involving training and educating the community on health-related topics, such as disease prevention, health promotion and health care management. These community-
Empowered individuals and communities

led and multisectoral initiatives have been implemented since the 1990s, and highlight the important role played by community volunteers to prevent disease and promote well-being.

One such programme is Komuniti Sihat Perkasa Negara (KOSPEN) which was established in 2012 to empower community volunteers as agents of health to reduce the increasing burden of NCDs. The programme involves detailed stakeholder mapping when recruiting potential volunteers and champions from the local community, support for multidisciplinary teams to collaborate and technical support and training for volunteers (19). The programme demonstrates effective use of communication channels, including social media, print materials and community interactions, which ensured that messages reached the community members. These lessons were useful during the PICK, a multi-sectorial collaborative endeavour established to roll out the COVID-19 vaccination programme (20). This was coupled with an extensive public education programme, partnering with NGOs, community leaders and religious organizations to reach out to underserved populations and address concerns over the safety and efficacy of the vaccines. Additional examples of initiatives that focus on the empowerment of communities are summarized in Table 2 (19–23).

Table 2. Examples of multisectoral initiatives to build healthy communities

<table>
<thead>
<tr>
<th>Initiative</th>
<th>Objectives</th>
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<tbody>
<tr>
<td>Komuniti Sihat Perkasa Negara (KOSPEN)</td>
<td>Aims to reduce NCD risk factors through community-based interventions at residential housing estates, workplaces and government agencies.</td>
</tr>
<tr>
<td>Communication for Behavioural Impact (COMBI)</td>
<td>Encourages communities to change or adopt behaviour to prevent or control diseases that affect their health and community. Focuses on prevention and control of dengue fever.</td>
</tr>
</tbody>
</table>
| Health Promotion in Learning Institutions | Raises awareness and encourages healthy lifestyles among students through:
  • Program Tunas Doktor Muda for preschoolers,
  • Program Kelab Doktor Muda for primary and secondary school students,
  • IMFree Programme (smoking prevention programme) for primary school students,
  • Program Ekspresi Anak Remaja Lestari (PEARL) to reduce risky behaviour and develop resilience among secondary school students,
  • Program Siswa Sihat (PROSIS) to empower students at higher educational institutions to lead a healthy lifestyle. |
**PHC workforce**

Public primary care facilities are staffed by a multidisciplinary team comprising, but not limited to, FMS, medical officers, dental officers, assistant medical officers, nutritionists, nurses, pharmacists, medical laboratory technologists, pharmacist assistants, radiographers, occupational therapists and physiotherapists. The team becomes more expansive within a particular clinic as the scope of services offered increases. In comparison, private primary care services are mainly delivered by single or chain practices, which are often staffed by GPs and nurses.

New graduates entering the health workforce are required to undergo compulsory training services before being appointed as permanent health care personnel. However, there has been a recent imbalance between the rapid increase in new graduates and available posts for permanent health care personnel due to a lack of funding to hire graduates. A service contract was introduced in 2016 for doctors, dentists and pharmacists in public health care facilities (24), in addition to limited permanent contract posts. This helped to underpin service continuity in the short term, with solutions being sought in the immediate future.

With a ratio of 18.9 doctors per 10 000 population, Malaysia has a lower than the average ratio compared to many upper-middle-income countries (21.5 doctors per 10 000 population) and Organization for Economic Cooperation and Development (OECD) countries (38.6 doctors per 10 000 population) (25). Similar trends have been observed for other health care professionals such as...
dentists, pharmacists and nurses (25). Some disparities are reported across different states such as the state of Sabah with a ratio of 1:776 compared to the more urbanized state of Selangor, which has a ratio of 1:455 (26).

To enhance and strengthen the delivery of health services to cope with the increasing burden of NCDs, the emergence of infectious diseases and the ageing population, the MoH commenced investing in the training and accreditation of health care professionals within public facilities. For example, FMS courses are offered through public universities as well as through parallel pathways. Additionally, there are also career paths offered for nurses, paramedics and other health care professionals at a post-basic training level. To enhance health care personnel competency and strengthen service provision, an accreditation programme is also offered for advanced core, specialized and optional procedures that are offered by the MoH. The MoH also promotes continuous professional development (CPD) to ensure that the knowledge and skills of its health care workforce are up to date. Despite this, workforce attrition remains a challenge, with many health care professionals leaving to pursue opportunities in other countries.

Like in many countries, Malaysia faced a shortage of health care workers during the COVID-19 pandemic. Various initiatives for human resource mobilization were implemented, which included mobilizing retired health care workers, those in training facilities and redeploying existing health care workers to areas of need to support the COVID-19 response. These strategies aimed to increase the availability of human resources at facilities and avoid burnout among existing teams (17, 27). While these measures helped to mitigate shortages of health care workers during the pandemic, health workforce shortages and maldistribution remain a challenge.

PHC financing

The public primary care system is heavily subsidized by government general revenue. Malaysians pay a nominal fee, which covers registration, consultation, investigations and medications. This provides the population with access to quality health services without encountering catastrophic expenditure, and demonstrates strong financial risk protection (28,29). Public health spending is only 5.1% of GDP and a relatively low proportion (1.06%) is spent on primary care (1) compared to the global spending average of 3.1% of GDP on primary care (30). This suggests that greater investment in public health services, and especially primary care services, is needed.

In parallel, there is a pressing need to reorient health care budget allocations and service delivery away from hospital-centric acute care to a model that emphasizes the promotion of health, disease prevention and effective management of chronic illness through comprehensive PHC, incorporating community-based services and community engagement. This has prompted the government to consider options for future sustainable health care financing. While total health expenditure has been rising over the past decade as a
percentage of GDP, this is insufficient to support population needs (29). The epidemiological burden (e.g., of NCDs and COVID-19) and other factors such as the country’s demographic profile, nutritional transition and economic growth mean that there are changing demands and needs.

Against this backdrop, private health care providers play an important role in addressing gaps, including in providing outpatient care for low-income groups in urban areas. Although consultation and procedure fees of private providers are regulated through the Fees (Medical) Order 1982, private-administered fees are still higher than those of the public health care system. Therefore, to enable the public to receive treatments that have a higher cost attached to them, measures are available to the population such as being able to use up to 10% of Employee Provident Fund savings for medical expenses, private insurance enterprises (personal and employer insurance), and the Medical Assistance Fund (28).

A key initiative relevant to PHC financing is Skim Peduli Kesihatan untuk Kumpulan B40 (PeKa B40), an effort to reduce the burden of NCDs through early screening, treatment and increased access to quality health care. This targeted population-based screening allows beneficiaries to access private- or public-sector facilities for screening with additional incentives to reduce OOP expenditures for certain health services (e.g., cancer treatment). The initiative was initiated by the government to improve the well-being of the population and initiate preventive actions against increasing NCDs among targeted low-income groups. Additionally, the initiative seeks to strengthen public–private partnerships while prioritizing PHC. There are plans to expand the initiative nationwide and to include other services such as minor ailments and chronic disease management (1).

A supportive and enabling environment

Key PHC enablers include regulatory and policy structures that support primary care provision and government-led initiatives incentivising multisectoral collaboration.

Key regulatory and policy structures

As the main provider of health care and employer of health care professionals, the MoH regulates its own facilities and members of staff. Regulatory frameworks guide the expected level of care and the necessary infrastructure, resources and human resources needed to provide quality care. However, a potential challenge is the lack of an independent external body to regulate the performance of the public sector.

To improve responsiveness of services to community health care needs, the current MoH Strategic Plan (29) was developed in line with the priorities of the Twelfth Malaysia Plan (2), with four core strategies to: 1) reinforce health care services, 2) strengthen health financing, 3) increase community health awareness and well-being, and 4) utilize technology and innovation in health care. Investments in expanding access to services, enhancing quality of care
and strengthening primary health care financing mechanisms are likely to contribute to improving health outcomes.

**Multisectoral collaboration**

PHC is also supported by policies that incentivise multisectoral collaboration. A key initiative enabling both multisectoral collaboration and community engagement is the *Agenda Nasional Malaysia Sihat* (ANMS). ANMS aims to improve the population’s health status and quality of life by prioritizing health in all policies through collaboration between government agencies, nongovernmental organizations and private sectors nationwide. To prepare for an aged nation by 2030, attention is given to strengthening elderly health care and increasing awareness of community-oriented initiatives such as *Pusat Aktiviti Warga Emas*. By leveraging the strengths of multiple sectors, it is anticipated that these policies will help address complex health challenges and promote more effective and sustainable solutions at both national and subnational levels.

The ANMS is complemented by a redesign of programmes and services in private facilities to comply with the Private Aged Health Care Facilities and Services Act 2018 and Care Centres (Amendment) Act 2018. The redesign promotes multisectoral collaboration by emphasizing the need for holistic and comprehensive care. For instance, aged care facilities are encouraged to partner with social service agencies to provide social support services and educational programmes on ageing and to promote the health and well-being.

**Monitoring and information systems supporting telemedicine**

Monitoring and information systems and technology-enabled health care also contribute to an enabling environment for PHC in Malaysia. In 1997, Malaysia was one of Asia's first countries to conceive of a blueprint for telemedicine (31). The blueprint describes the government’s vision for the future of Malaysian health care and outlines the role of technology to achieve this vision (31). The Health Information Management System (HIMS) blueprint released in 2005 incorporates the telemedicine vision to strengthen the institutionalized data gathering activities (32). The HIMS is based on fixed-format aggregated reports, which were sent manually via the mail and, since the mid-1990s, electronically. When combined with other disparate legacy reporting systems, this resulted in inefficiencies and data quality issues (33). However, the nature of manual operations for data collection was also the greatest strength of the HIMS as it encompassed all health care facilities in Malaysia without additional investments required for infrastructure or the setting up of dedicated information systems in each facility.

Public telemedicine services were piloted in 2002 to enable seamless communication between health care providers in hospitals and primary care clinics and therefore continuity of care. The services, especially in the state of Sarawak, allowed rural health clinics to consult specialists for the benefit of
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The Teleprimary Care (TPC) system introduced in 2005 at selected clinics, and later the Teleprimary Care-Oral Health Clinical Information System (TPC-OHCIS) in 2017, incorporated services to meet PHC requirements while also digitizing the HIMS activities in participating clinics.

The COVID-19 pandemic accelerated local interest in digital health initiatives. This has been seen in increased use of the TPC-OHCIS as part of new norms in health care, online appointments and virtual consultations. The pandemic also led to the development of the MySejahtera application, which aimed to provide the public with pandemic-related information such as an outbreak tracker, health guidelines and health care service availability, while concurrently functioning as a tool for vaccination registration, self-reporting of positive results from self-testing, and the delivery of home quarantine orders (17). MySejahtera is now being expanded to store immunization and health screening records beyond COVID-19, as a steppingstone towards the creation of a lifetime health record.

At the national scale, the Malaysian Health Data Warehouse (MyHDW) was launched in 2017, under the vision outlined in the HIMS blueprint (31,32). It is an information gathering platform that allows comprehensive health care data analysis and reporting from government and private health care facilities. Under the “Build Once, Use Many” development concept, the platform utilizes the organic expansion approach to eventually cover all health care-related data collected by the government. In its current form, MyHDW gathers information from government and private inpatient services, six disease-specific clinical patient registries and the national NCD screening system (34).

The private sector actively contributes to national health datasets, for example by regularly submitting NCD screening data for targeted low-income groups under the PeKa B40 initiative. This facilitates cross-sectoral evaluation of usage and behaviour patterns relevant to health screening events.

The forecasted benefits from telemedicine and health informatics highlight the importance of continuous engagement between health care professionals, researchers and industry partners. Yet as has been recognized greater efforts are needed to address data fragmentation (29,35). For instance, there is currently no requirement for mandatory reporting from the private sector except for some communicable diseases. Furthermore, there are significant gaps due to limited funding across digital health development plans; there are technical difficulties accompanied by a lack of local informatics experts. Digital health is an inevitability; thus, emphasis and prioritization of addressing the data gaps are outlined in the MoH’s Strategic Plan and Digitalisation Strategic Plans for 2021–2025 (29).
Conclusion and lessons learned

Malaysia has made substantial investments in primary health care systems that underpin equitable and universal access to a wide range of services. New policies, programmes and approaches are needed to respond to changing demographics, disease patterns and increased environmental hazards. Sustained efforts are needed to orient the system towards prevention of illness and valuing good health, which require whole-of-government and whole-of-society approaches.

Government investments in community engagement and empowerment recognize that engaging communities as partners in health care is essential to achieve equitable, people-centred PHC. Lessons from successful initiatives include creative use of communication channels, including social media, print materials and community interactions to ensure that messages are accessed and understood by community members. Ongoing efforts to strengthen information and communication technology are likely to improve person-centred and quality health care.

To strengthen PHC, there is a need to address ongoing health workforce shortages, including to address health workforce attrition and improve job security. Investing in public-private partnerships is also likely to improve service access and reduce pressures on public sector facilities. Such investments should be guided by the principle of allocative efficiency, where resources are directed to the right mix of activities in the health system to produce the best possible outcomes.

Finally, multisectoral collaboration and action is needed to address the social determinants of health. As such, spending on population health and well-being should be viewed as a social and economic investment, and not a cost. A new national health white paper is currently being developed to reflect the need not only to strengthen primary care services but also to invest in health across the life course.
References


This case study was developed by the Alliance for Health Policy and Systems Research, an international partnership hosted by the World Health Organization, in collaboration with the WHO Regional Office for the Western Pacific (WPRO) and WHO country offices. In 2015, the Alliance commissioned the Primary Health Care Systems (PRIMASYS) case studies in twenty low- and middle-income countries (LMICs) across WHO regions. This case study builds on and expands these previous studies in the context of the COVID-19 pandemic. This case study aims to advance the science and lay a groundwork for improved policy efforts to advance primary health care in LMICs.