

# INDUSTRY FACT BOOK 2022 EDITION



**50 YEARS OF INNOVATIVE MEDICINES - ACHIEVING MORE TOGETHER**

As a rapidly developing nation, Malaysia is a country with a robust and fast-changing healthcare landscape. As the population grows and literacy improves, so does the demand for better healthcare and quality of life. In keeping with the demands for better healthcare, the pharmaceutical industry continues to invest in the discovery, research and development as well as production of newer drugs, biologics and vaccines for the treatment and prevention of diseases. Malaysia, through its attractive investment schemes and supportive economic infrastructure, has been able to attract leading global pharmaceutical companies to set up base here so that Malaysians can benefit from timely access to innovative world-class medicines.

In this Industry Fact Book, the Pharmaceutical Association of Malaysia (PhAMA) will provide insights into how the Malaysian pharmaceutical industry has been working closely with various stakeholders to address the many health-related challenges faced by the nation.



# CONTENTS

Message from the Minister of Health	03
Message from the President of PhAMA	04
<b>CHAPTER 1:</b> Pharmaceutical Association of Malaysia Pharmaceuticals in Nation-Building	05
<b>CHAPTER 2</b> The Global Pharmaceutical Landscape	52
<b>CHAPTER 3</b> Introduction to Malaysia's Healthcare System	59
<b>CHAPTER 4</b> COVID-19 in Malaysia	73
<b>CHAPTER 5</b> Mapping New Milestones	82
<b>CHAPTER 6:</b> Future-proofing the Healthcare System	90
Glossary	97
PhAMA Members	98

**NOTE:**

Figures and data presented in PhAMA's Industry Fact Book 2022 are derived from sources published in 2017–2021 and include a selection of latest available data from 2022.

# WORKING TOGETHER FOR A HEALTHIER NATION

## A Message from the Minister of Health

Congratulations to PhAMA on your Golden Jubilee and contributions to Malaysia's health ecosystem over the last five decades. I am pleased for this opportunity to pen a message for the third edition of the industry's Fact Book as a vote of thanks to the companies and professionals who played crucial roles in nation-building, particularly over the past three years.

The COVID-19 pandemic was a litmus test for the entire healthcare system around the globe, and Malaysia was not spared. Moving away from sick care to Healthcare and Wellness is the gargantuan task that this nation is embarking on now with the motto - ten million healthier Malaysians in ten years. The pandemic has taught us that the country's healthcare system needs to be enhanced to ensure that various quality services can be delivered to the people, thus the need for a sustainable public healthcare system, which will be ready to effectively manage health crises that may arise in the future.

Despite the extreme challenges posed by the unseen foes, both the virus and the fear of the unknown from the world at large, the support and collaboration from the industry has been a constant. The COVID-19 pandemic and vaccination efforts

showed us just how well the public and private sectors can work together and it is because of this we have one of the best vaccination rates in the world. It is, for this reason, that public-private partnerships to bridge any service shortfalls from must be emphasised and emulated. Moving forward, we can develop payment models, put in place better processes and tools, and optimise resources to ensure the well-being of the Rakyat is preserved. All of these will serve greater efficiency while also exposing the government sector to a more proficient way of working, allowing for lasting service improvement.

A vital factor that places Malaysia on the radar for global clinical trials is our population which consists of various ethnicities. Clinical trials seeking to understand the effectiveness of a new therapy across a diverse Asian population would immensely benefit from this. With the potential first-in-human trials to be conducted in our country, we hope to comprehend the nature of diseases better and provide vital information about disease trends and risk factors. 50 Years of Innovative Medicines - Achieving More Together, the tagline for the Factbook this year could not be timelier as with the inclusion of early phase clinical trials in the country, Malaysian patients



**YB Khairy Jamaluddin**  
*Minister of Health*

will now be able to access innovative therapies and treatments that may have previously been beyond reach. Inadvertently, this produces a positive spin-off effect on the nation's productivity and economy.

The pharmaceutical industry has much to offer in terms of clinical resources, scientific knowledge, skilled human capital, and advanced technologies, which augurs well for Malaysia's growth and development. The MoH recognises the key contributions of the industry and hopes to augment the growth by supporting and collaborating further in initiatives that can spur the progress of our beloved country. I hope and trust that much more can be achieved for the nation as we embrace closer public-private partnerships with PhAMA in the coming years.

# RISING ABOVE CHALLENGES IN SERVING POPULATION HEALTH

## A Message from the President of PhAMA

It gives me great pleasure and honour to witness PhAMA's 50th anniversary this year and present the industry's third edition of the industry Fact Book. Since its inception in 1972, PhAMA has worked relentlessly to improve access to innovative medicines for Malaysia by enhancing the industry's governance and processes. This has resulted in enhanced regulatory compliance for medicines and streamlined marketing practices that are on par with global standards.

It would not do justice to the industry to omit mention of the global catastrophe caused by COVID-19. Yet, it is a tribute to the human spirit that, far from being beaten down and dispirited, industry members have responded magnificently by rising to the challenge, and demonstrating the best characteristics of humanity by reaching out and helping others at a time when everyone was experiencing the triple threats of disease, economic uncertainty and suffering.

Despite the disruptions, PhAMA members have persevered and focused on what we do best: serving the public. Our members adapted quickly, capitalizing on technology to continue working on

our programmes, public advocacy, policy-shaping and ongoing discussions with the ministry, regulators and stakeholders on key issues.

The industry is made up, first and foremost, of people - and they too suffered the same challenges and hardship associated with the scourge of COVID-19. We laud especially the members who have expedited the development and roll-out of critical vaccines, and continued crucial R&D to produce innovative medicines that can treat subsequent variants.

On top of that, PhAMA members have continued working around the clock in the last two years despite Movement Control Orders (MCOs) and other constraints that made regular activity almost impossible. The concerted efforts continued into 2022, when the country faced the worst medicine shortage experienced in the country's history upon the lifting of barrier controls which brought about a sharp surge in infectious conditions.

As we commemorate this milestone anniversary, we look back at our journey as the voice of Malaysia's pharmaceutical industry in supporting



**Mr. Chin Keat Chyuan**  
*PhAMA President*

population health, advocating reforms, better healthcare policies and greater awareness of health issues through education and training for members, healthcare professionals and the general public.

Thanks to the trailblazers who have charted PhAMA's path and laid strong foundations in our early years, PhAMA is now poised to step up to the next level to drive national growth, competitiveness and sustainability.



# CHAPTER 1

## Pharmaceutical Association of Malaysia Pharmaceuticals in Nation-Building

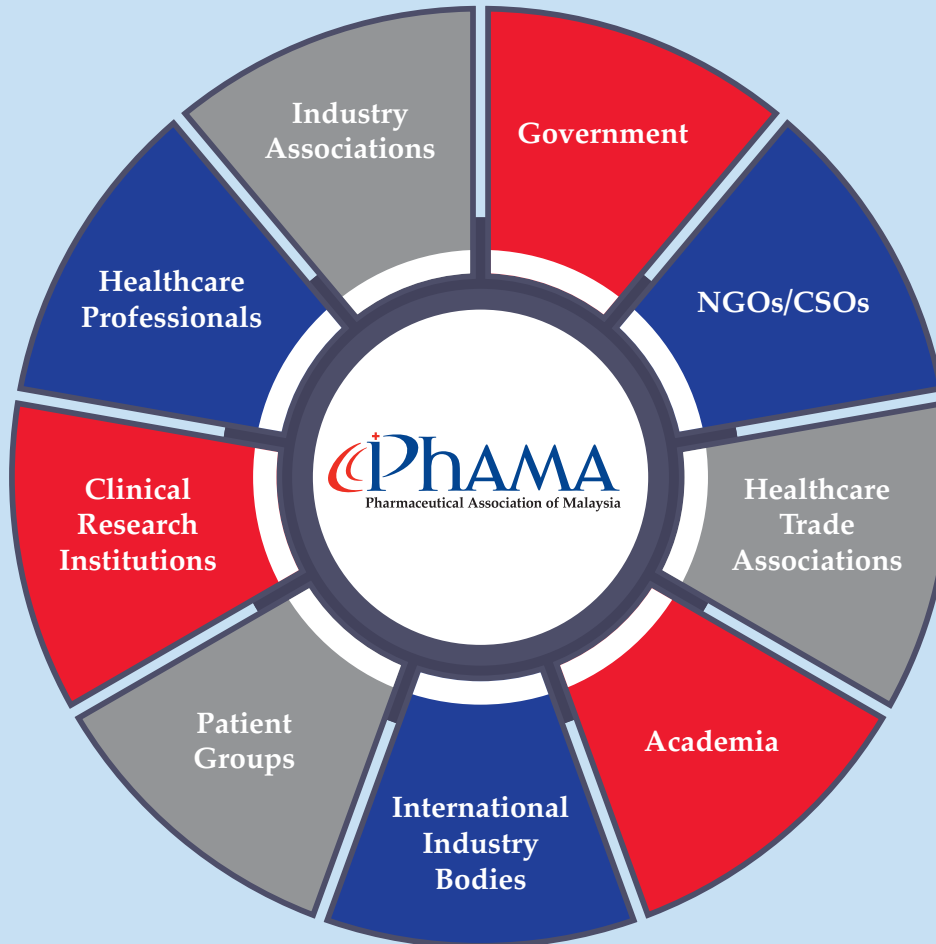
The Pharmaceutical Association of Malaysia (PhAMA) represents 41 member companies, a majority of which are global multinational biopharmaceutical companies based in Malaysia. Since its inception in 1972, PhAMA has established a high reputation of professionalism and integrity in the fields of science, technology, innovation, and ethical marketing.

PhAMA works closely with different stakeholders within the larger healthcare eco-system, leveraging on the expertise and experience of global and local partners and collaborators to co-create impact for individuals and communities.

At the core of its operations, PhAMA acts as a conduit for the pharmaceutical industry in establishing regulatory frameworks, facilitating strategic collaborations and driving national policy.



## PhAMA and Stakeholders



## PhAMA's Pillars of Focus



PhAMA members form part of the private healthcare sector within the healthcare eco-system that offers healthcare services and treatments to the Malaysian population. The sector is expected to be a socio-economic growth engine for Malaysia over the next 15 years.

By end of 2022, it is expected to contribute around MYR27 billion in private revenue to the government, serving 13 million patients and providing 150,000 employment opportunities.

From 2022 to 2037, the pharmaceutical industry is expected to create 100,000 new jobs and pour planned investment of around MYR4 billion into the country.<sup>1</sup>

The private healthcare industry itself is expected to be a significant socio-economic component of the Malaysian economy.

By 2037, the sector has projected contributions of up to MYR756 billion in revenue, with growth

at ~6% CAGR, driven by economic growth and improvement in healthcare policies / infrastructure.<sup>1</sup>

In the next 15 years, the private healthcare sector is expected to serve up to 226 million patients, while providing over 250,000 employment opportunities. Additionally, the sector is also expected to spur Malaysia's medical tourism industry, with a contribution of MYR31 billion by 2037.<sup>1</sup>



## Sales by Channel Over Time (2017 – 2021)

		2017	2018	2019	2020	2021	2022 (H1)
Channel	Sub Channel	MYR (Mn)	MYR (Mn)	MYR (Mn)	MYR (Mn)	MYR (Mn)	MYR (Mn)
Government	Government	2333	2593	2869	2698	2990	1640
Private	Clinic	1038	1162	1231	1065	1104	640
Private	Hospital	1286	1440	1609	1428	1600	927
Private	Others	26	28	38	41	41	20
Private	Pharmacy	2163	2497	2744	2765	3171	1820
Grand Total		6847	7720	8490	7997	8906	5048

## Growth by Channel Over time (2017 – 2022)

		2018	2019	2020	2021
Channel	Sub Channel	2017-2018	2018-2019	2019-2020	2020-2021
Government	Government	11%	11%	-6%	11%
Private	Clinic	12%	6%	-13%	4%
Private	Hospital	12%	12%	-11%	12%
Private	Others	9%	35%	9%	0%
Private	Pharmacy	15%	10%	1%	15%
Grand Total		13%	10%	-6%	11%

## Pharmaceutical Market Value Projected Growth 2022 to 2024

	2022	2023	2024
Total Market	YoY Growth	YoY Growth	YoY Growth
Projected Growth	8.8%	7.5%	6.5%

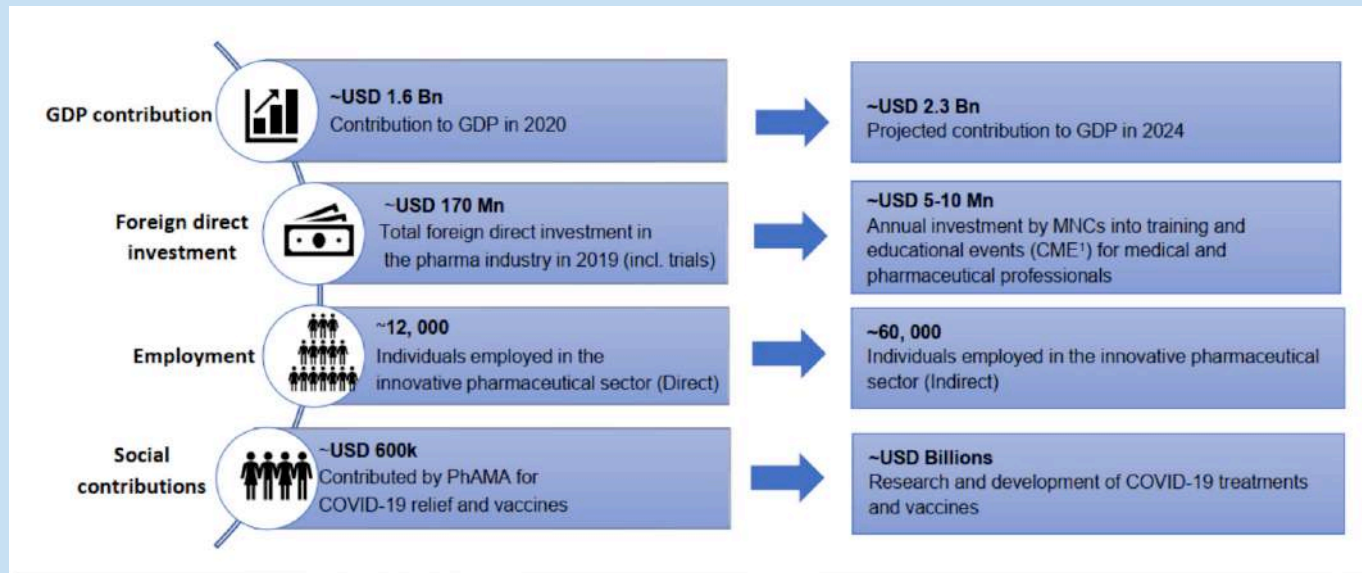
Source: IQVIA

## Private healthcare's projected contribution to the Malaysian economy over the next 15 years

CATEGORIES	2022	2037
<ul style="list-style-type: none"> <li>Private sector revenue contribution</li> <li>Patients served in the private healthcare sector</li> <li>Employment in the private healthcare sector *cumulative</li> <li>Projected contribution of the medical tourism sector to Malaysia</li> <li>Planned investments in Malaysia</li> </ul>	<ul style="list-style-type: none"> <li>MYR 27 Bn</li> <li>13 Mn</li> <li>150,000</li> <li>MYR 0.8 Bn</li> <li>MYR 4 Bn</li> </ul>	<ul style="list-style-type: none"> <li>765 Bn</li> <li>226 Mn</li> <li>250,000*</li> <li>31 Bn</li> <li>95 Bn</li> </ul>

\*100,000 new jobs created between 2022-2037

## Pharmaceutical MNCs' Contributions to Socio-economics of Malaysia



Source: IQVIA

## OTC product launched between 2017 to 2021

Year	2017	2018	2019	2020	2021
OTC product launches	1	2	1	2	1

## Ethical products launched between 2017 to 2021 (Based on drug classification)

No of ethical products launched	2017 – 2021
Oncology / Cancer	11
Diabetes / Anti-Diabetic	4
Eyecare	3
Vitamins	2
Antivirals	6
Anti-Hypertensive	2
Drug Acting on the Central Nervous System	3
Cough & Cold Medication	1
Cholesterol Regulators	2
Orthopaedic Related	1
Others	13

Source: PhAMA

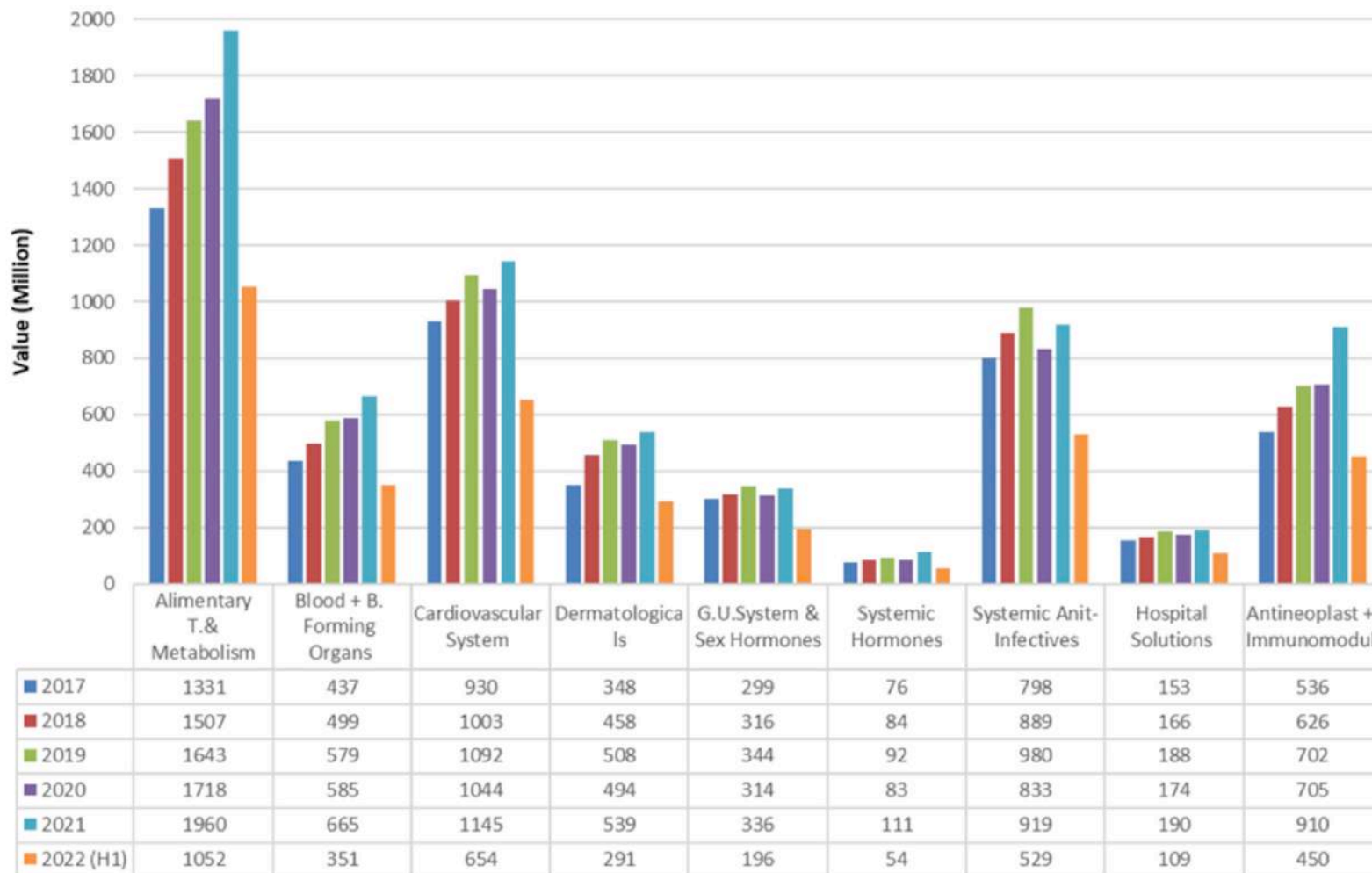
## Number of Ethical Products expected to be launched between year 2025 – 2030 (Based on drug classification)

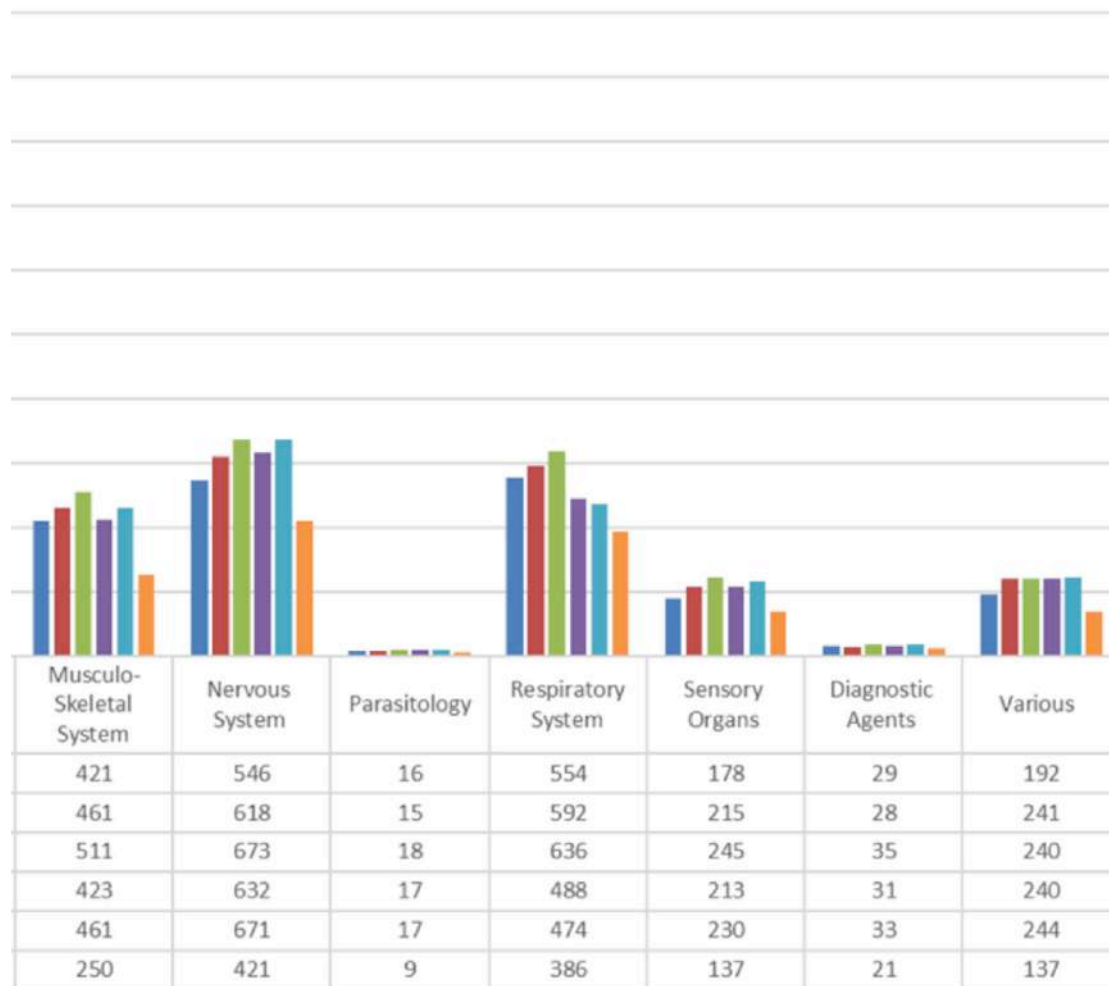
No of Ethical Products expected to be launched	2025 – 2030
Oncology / Cancer	13
Neurology / CNS	4
Cardiovascular	3
Diabetes / Anti-diabetics	3
Hematology (Blood)	1
Hypertension	1
Anti-asthma / COPD products / Respiratory System	1
Immunology	1
Vaccines	4
Endocrine including growth hormones	2
Anti-inflammatory / anti-rheumatic products / pain	1
Digestive system e.g. gastro pro-kinetics	1
Women's Health	1
Anti-viral	1

Source: PhAMA



## Sales by Therapeutic Area - Trend over time (2017-2022)





Source: IQVIA

## INFECTIOUS DISEASES

Infectious diseases caused by pathogenic microorganisms such as bacteria, viruses, parasites, or fungus, can spread from one person to another either directly or indirectly.<sup>4,5</sup> They are one of the greatest threats to human health, and were listed by the World Health Organization as 7 out of the 10 main global health threats in 2019.<sup>3</sup>

The COVID-19 pandemic, caused by a virus called SARS-CoV-2, spread like wild fire within a short span of time in 2020, proving that infectious diseases are not just major threats to health but also lives and livelihoods. The massive numbers of deaths were also sober reminders that infectious diseases do not discriminate between geographical borders, age or social status.

The discovery of the first smallpox vaccine by Edward Jenner in 1796 showed that severe disease and death can be arrested with inoculation. Vaccines have been lauded by the World Health Organization (WHO) as the second most effective public health intervention in the world for saving lives and promoting good health after clean water.

The introduction of COVID-19 vaccines by two PhAMA member companies in 2021 arrested the severe impact of the disease, bringing down admissions to hospital Intensive Care Units (ICU) and deaths.

## BIOLOGICS AND BIOSIMILARS

Biologics are medications made from organic materials. Biologic medications can be used to treat a wide range of illnesses, and they are frequently used to treat immune-related illnesses such Crohn's Disease, Psoriasis and Rheumatoid Arthritis. Biologics work to disrupt immune system signals and pathways in immune system-related disorders to lessen the harm caused by these conditions.<sup>6</sup>

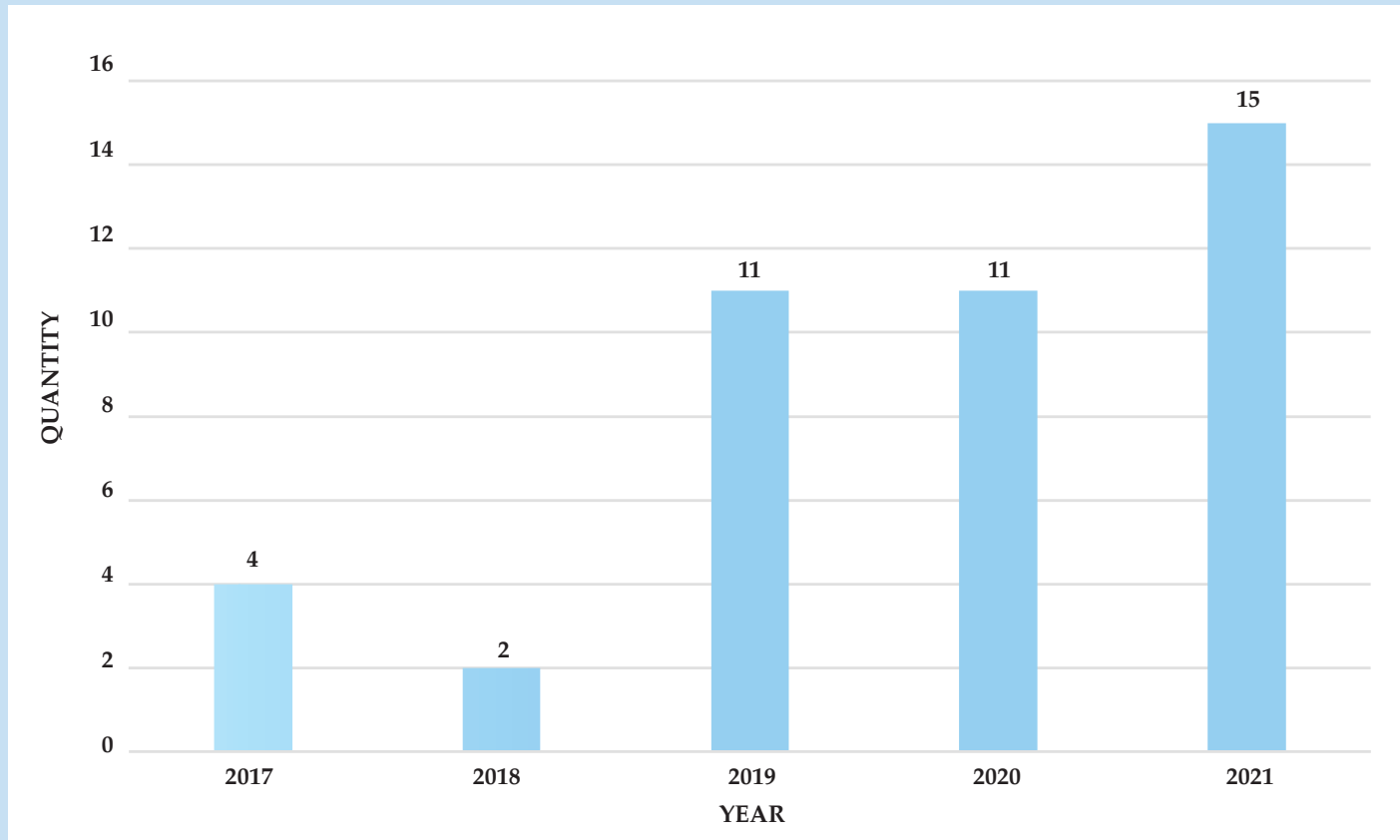
The use of biologics is not restricted to management of immune-related disorders. Biologic medications are at the forefront of medical advancement, transforming treatment pathways and giving hope to patients who have no other options for treatment.<sup>6</sup>

Biosimilars, on the other hand, are biological products that share many characteristics with biologics but do not exhibit any clinically significant variations in terms of safety, purity, or potency.<sup>7</sup>

A biosimilar, however, is not regarded as a "generic" conventional medication. Two biosimilar products were introduced in Malaysia by PhAMA member companies between 2020 and 2021.<sup>7</sup>



## No of biologics made available in Malaysia by PhAMA members between 2017-2021



Source: PhAMA

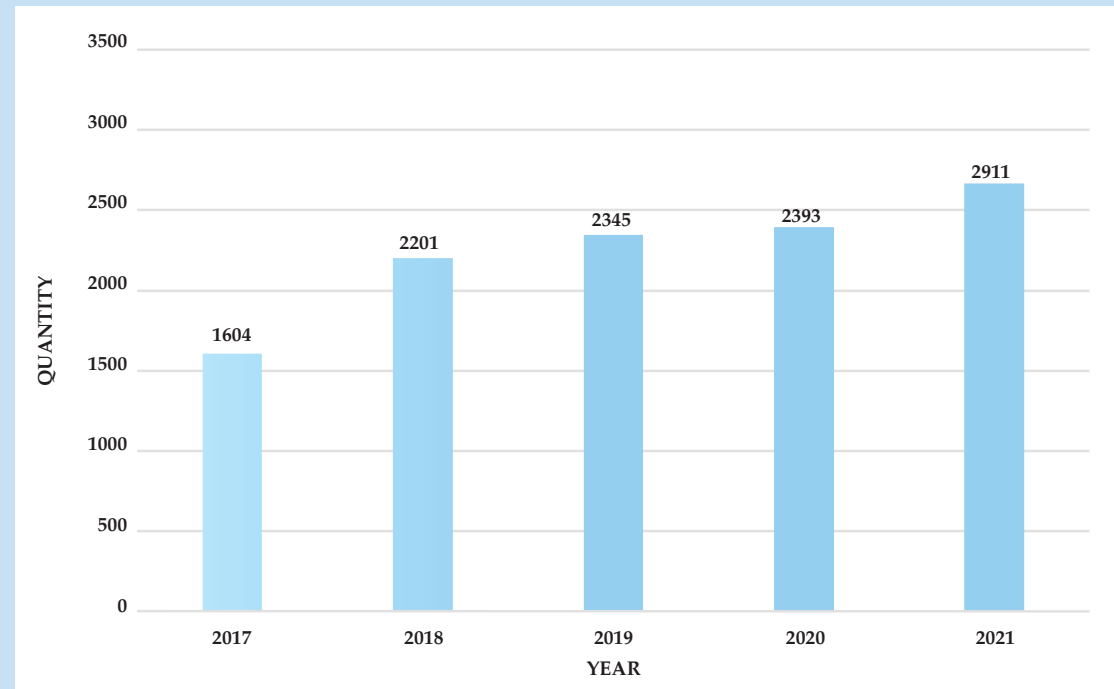


## PATIENT ACCESS SCHEMES (PASc)

Patient Access Schemes are voluntary programmes by pharmaceutical companies to provide assistance of prescription medications to eligible patients as recommended by healthcare providers. Nine PhAMA member companies surveyed offered PASc in Malaysia. Six PhAMA member companies offered PASc valued at approximately MYR5.24 billion to eligible patients between 2017 and 2021. In 2021, the value of the PASc contributed by PhAMA members was MYR1.4 billion despite the COVID-19 pandemic.

The number of patients who benefited from PASc offered by PhAMA members increased year on year from 2017 to 2021, rising from 1,604 in 2017 to 2,911 in 2021. At the height of the COVID-19 pandemic, there were 2,345 and 2,393 PASc beneficiaries in 2019 and 2020 respectively.

## Number of patients who underwent PASc by selected PhAMA members from 2017 and 2021.



\*4 companies responded for 2017, 2018 and 2019 respectively, while 5 companies responded for 2020 and 7 for 2021.  
Source: PhAMA



## RESEARCH AND DEVELOPMENT (R&D)

Clinical trials and R&D form the backbone of medicine discovery in healthcare. Various MNC pharmaceutical companies have consistently invested in Malaysian clinical trials over the years.

Post COVID-19 pandemic, Malaysia has participated in four global clinical trial initiatives for management of the SARS-CoV-2 virus. Malaysia hopes to enhance internal capabilities and capacities through these collaborations, with the objective of producing treatments within the country in time to come.

However, R&D is a knowledge-intensive initiative requiring high intellectual capacity. To encourage

investments in R&D, greater protection of intellectual property (IP) must be included in the healthcare eco-system framework.

Building a sustainable and resilient R&D culture in Malaysia requires sufficient incentives and a conducive eco-system. Fiscal incentives such as tax exemptions will encourage MNCs to conduct early clinical trials (phase 1 and 2) in Malaysia, which will have spill over effects on the socio-economy of the country.

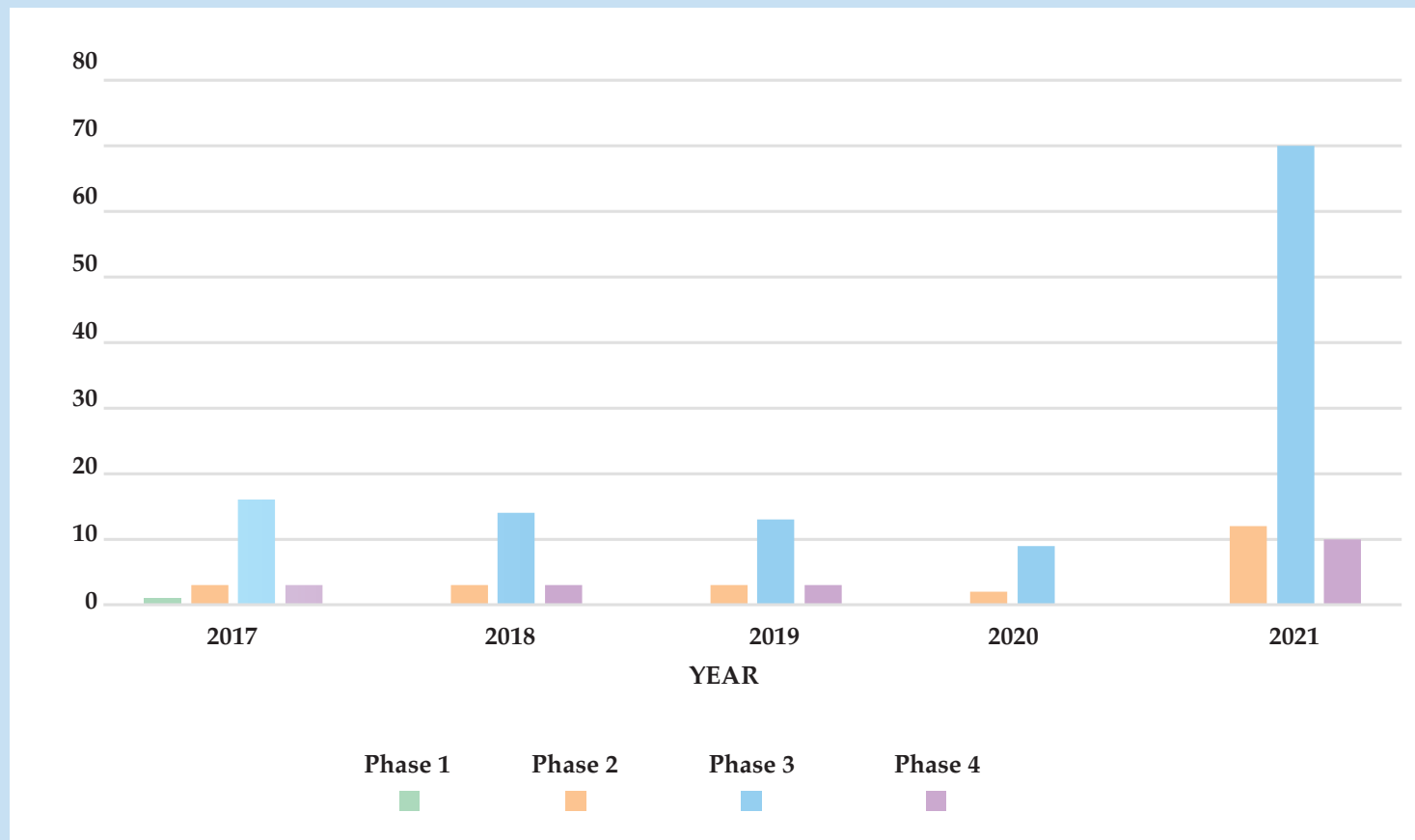
11 PhAMA member companies conducted 105 clinical trials in Malaysia between 2017 and 2021. 200-250 more clinical trials are expected to be conducted in Malaysia in the next 15 years.

Clinical trials also drive employment in the healthcare sector, with 1,000 to 2,000 skilled jobs being created every year, in addition to bringing financial investments to the nation.<sup>16</sup>

The cornerstones of the pharmaceutical industry are continuous research and development, knowledge cultivation and discoveries of new medical advancements.

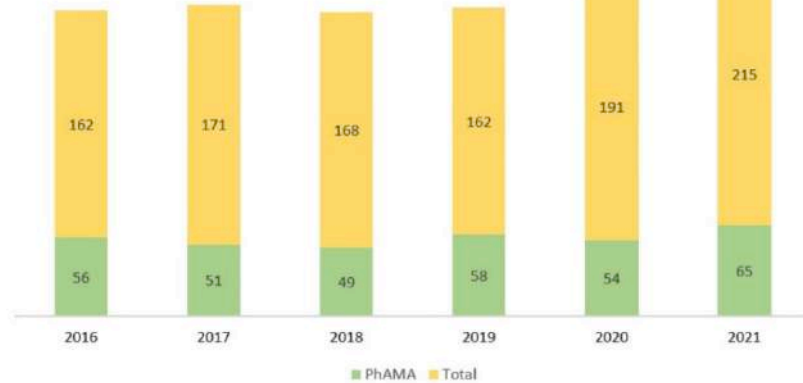
In the spirit of knowledge-sharing and giving back to society, PhAMA member companies have been consistently providing grants to universities and researchers in Malaysia to advance science and research. Between 2017 and 2021, MYR798.24 billion has been invested by PhAMA companies for this purpose.

## Number and phases of clinical trials conducted by PhAMA members (2017-2021)

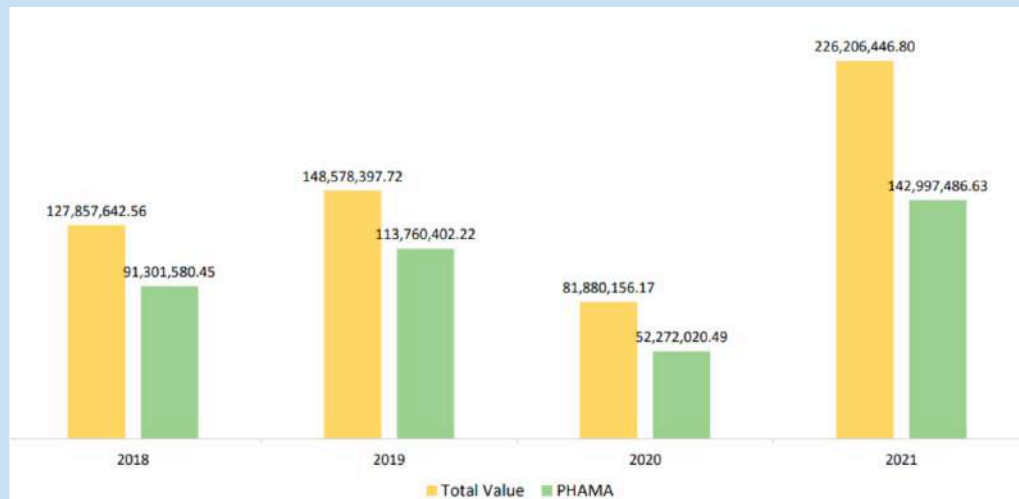


Source: PhAMA

## Industry-sponsored research (ISR) from 2016-2021



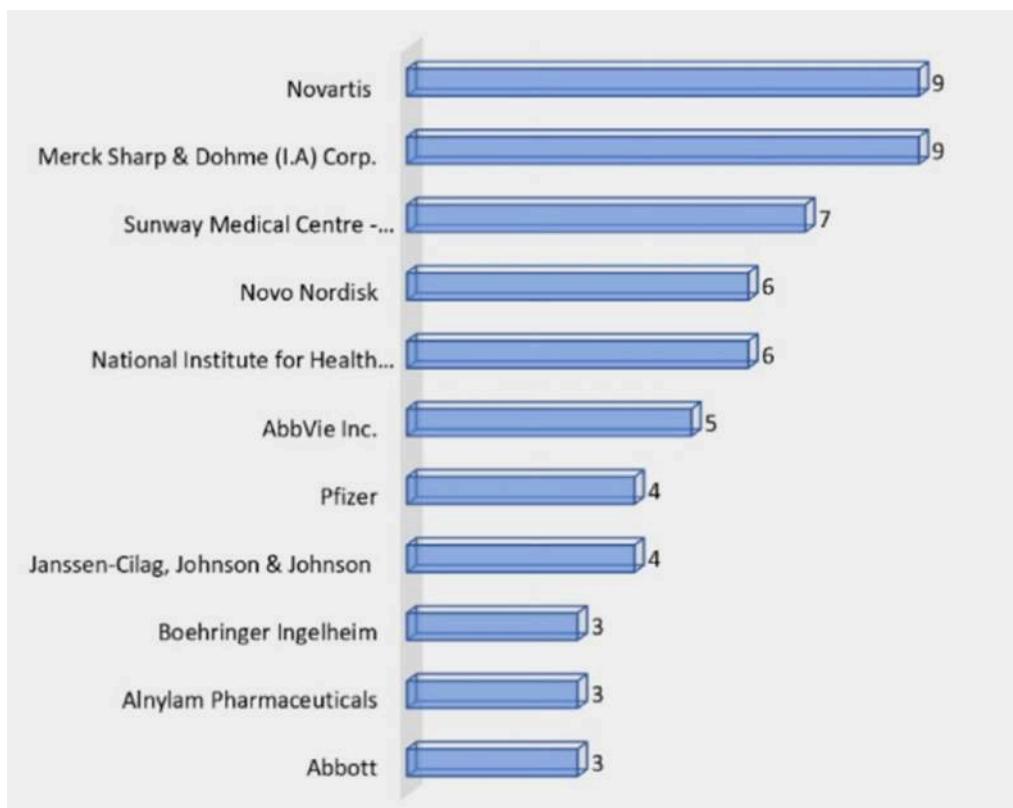
## Total value of clinical trials from 2018-2021 (in MYR)



Source: CRM

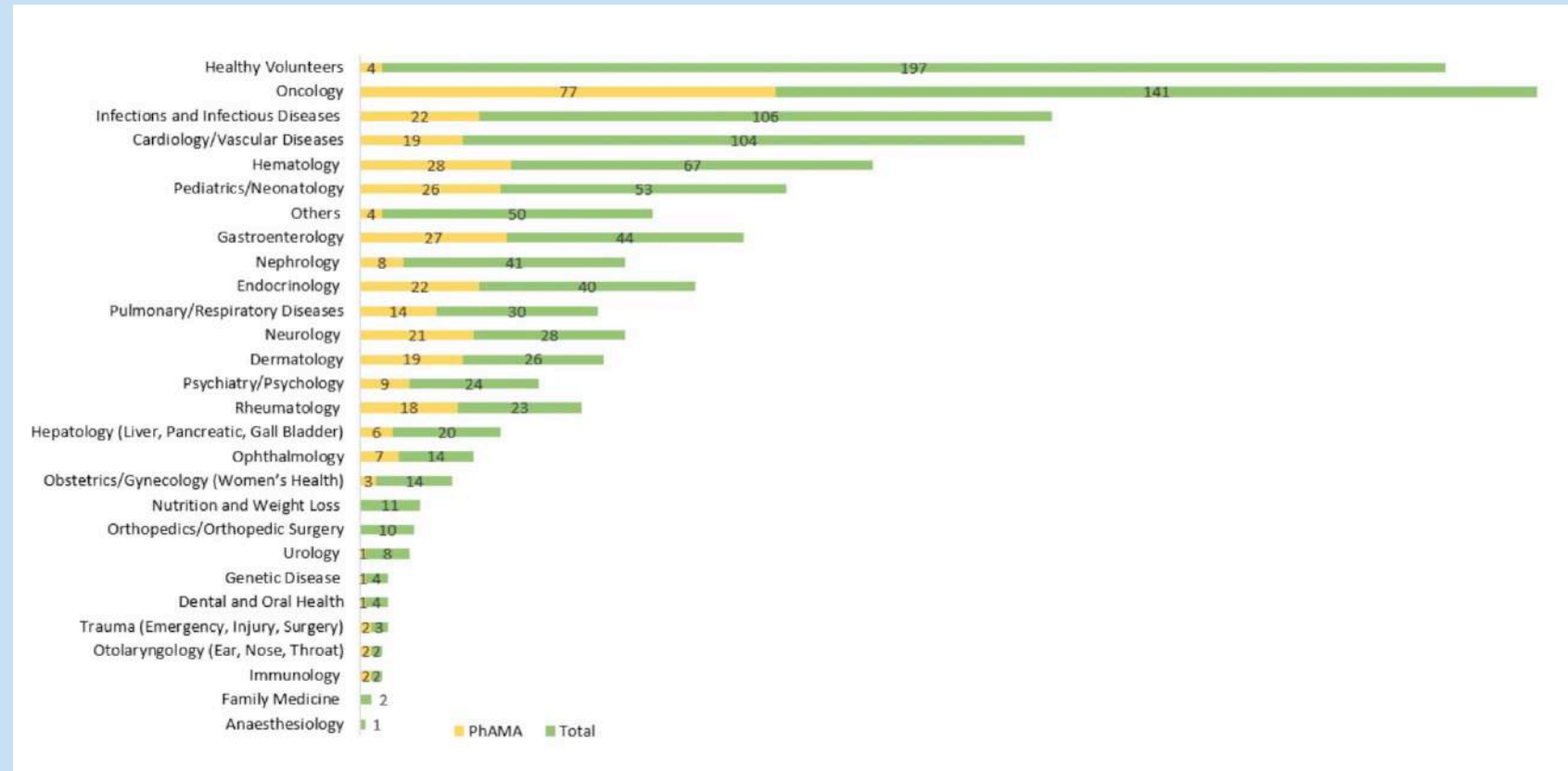


## Top sponsors with the most sponsored research in 2019



Source: CRM

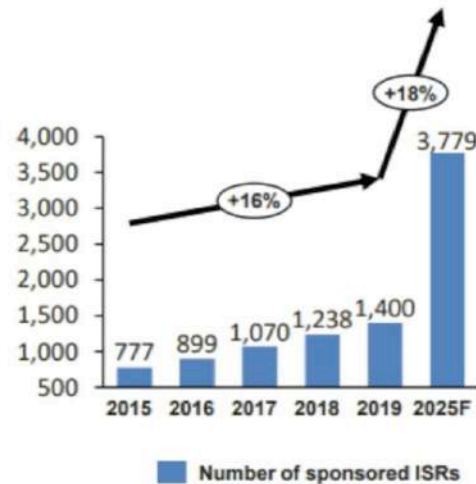
## All ISR activities by therapeutic category (2016-2021)



Source: Clinical Research Malaysia (CRM)

## Clinical trial activities in Malaysia 2015-2025

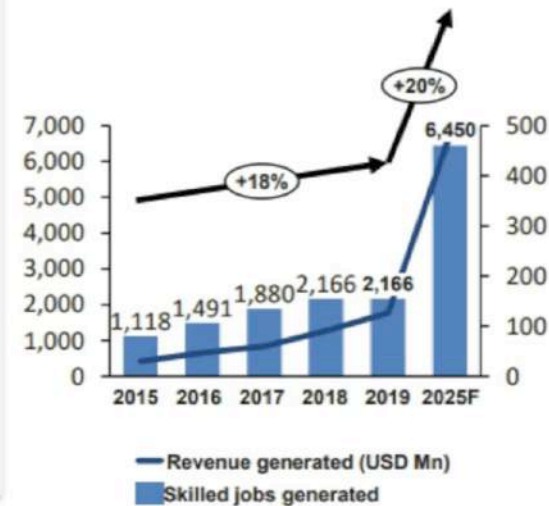
Clinical trials activity in Malaysia  
(cumulative)



### Key drivers for growth of clinical research in Malaysia:

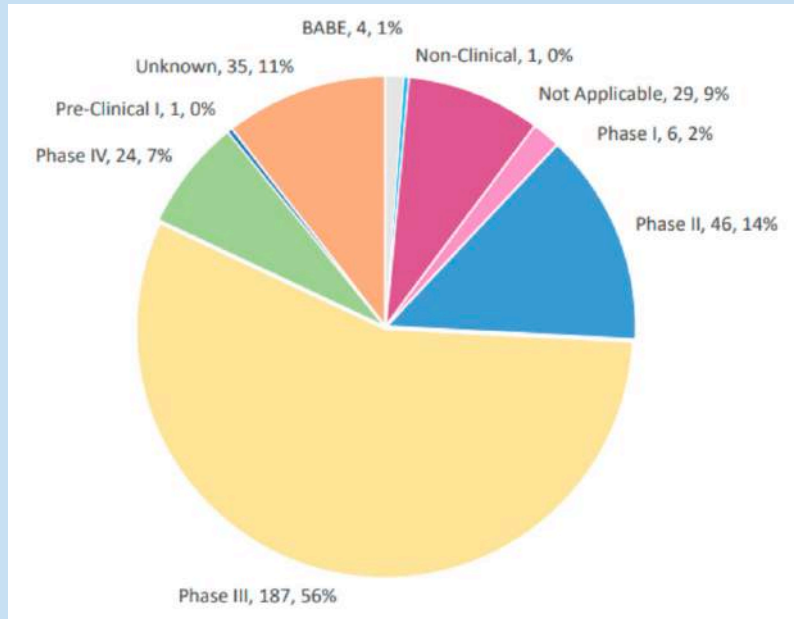
- ✓ Multi-ethnic Asian population
- ✓ Streamlined regulatory system
- ✓ Strong government support
- ✓ Quick start-up timelines
- ✓ Low patient costs and Institutional Review Board (IRB) fees

Revenue and jobs generated through research activities



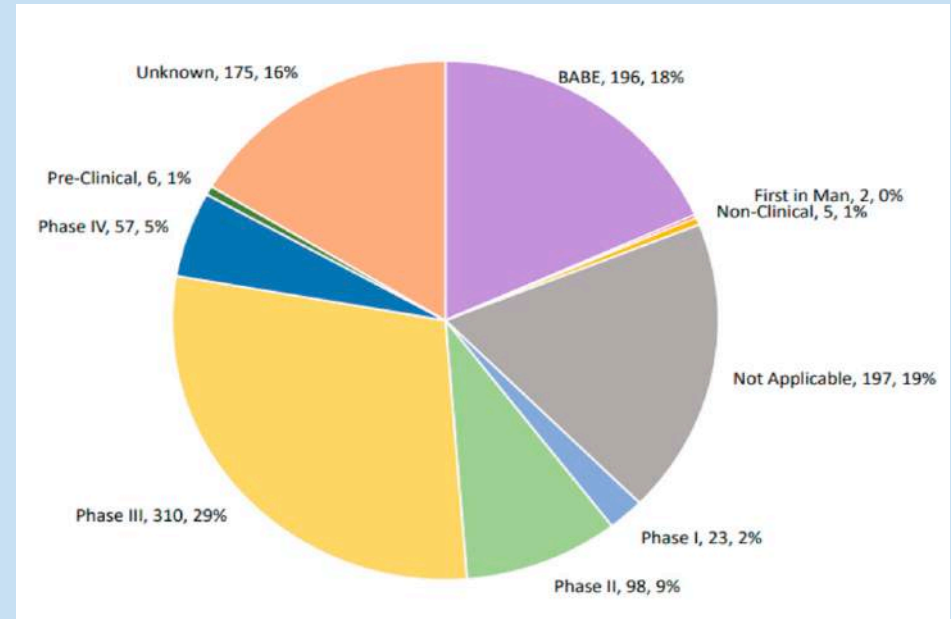
Source: Clinicaltrials.gov, Clinical Research Malaysia

## Total no of ISR activities by PhAMA members by phases (2016-2021)



Source: CRM

## ALL ISR activities by phases (2016-2021)





## MEDICAL TOURISM

Malaysia was named the top “Health and Medical Tourism Destination of the Year” in 2015 and 2016 by the International Medical Travel Journal.<sup>17</sup> Around 1.3 million medical tourists visited Malaysia in 2019, contributing to around MYR1.7 billion in revenue to the country.<sup>18</sup> 8-10% of total healthcare expenditure in Malaysia is driven by medical tourism. Post-COVID-19, the first travellers into the country have been medical tourists.

Public-private partnerships between private hospitals and governmental agencies like the Malaysia Healthcare Tourism Council have successfully placed Malaysia as the top destination for medical tourism in the world.<sup>18</sup>

The key drivers of medical tourism are the high quality of medical professionals and facilities, access to innovative medicines, government policies that ease medical tourism, rising awareness of medical tourism among targeted countries and growing compliance with international standards.

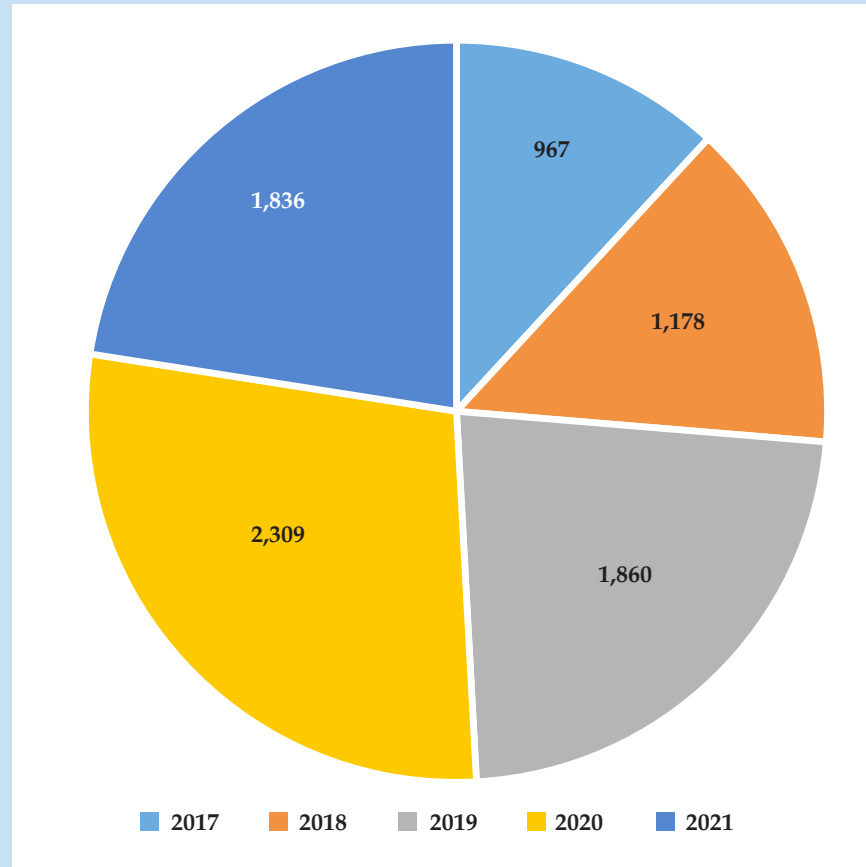
PhAMA members play a role in increasing medical tourism by investing in the training of experts, whether by sending Malaysian doctors for international scientific conferences, or bringing in experts from overseas for sharing of clinical knowledge.

### Top treatments sought after in Malaysia for Medical Tourism



Source: MHTC

## Taxation - Providing revenue to the country (MYR Mn)



\*A total of 6 companies responded for year 2017, 2018, 2019, and a total of 7 companies responded for 2020 & 2021 respectively.

Source: PhAMA

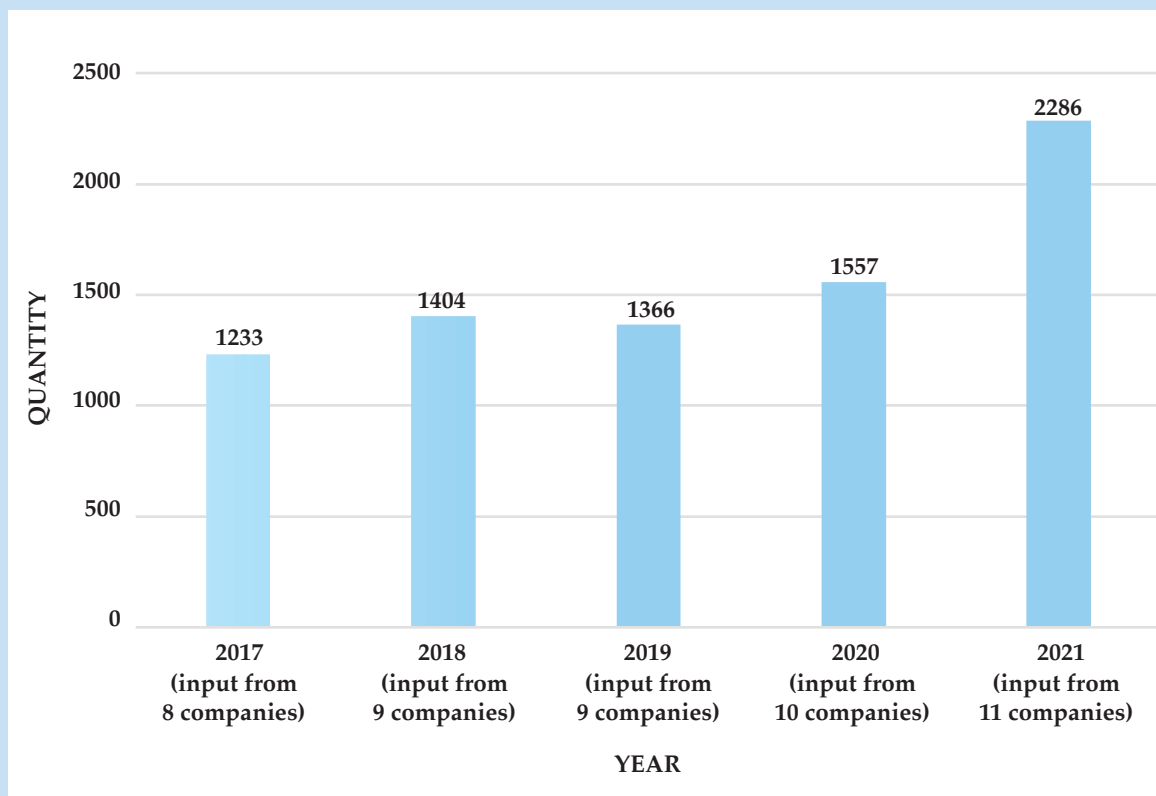
## CAPACITY BUILDING AND EMPLOYMENT

Employee capability-building is one of the key elements of sustainable organisational growth in the pharmaceutical industry. There is a need to cultivate talents that are adaptable and versatile in a fast-paced and competitive industry where innovation is top priority. Industry players need to be resilient to develop a workforce characterised by high attrition among skilled workers.

Total employment among member companies surveyed showed an upward trend during the term under review. There was a double-digit reduction in the number of people employed in 2019, suggesting that member companies sustained their headcount during the pandemic.

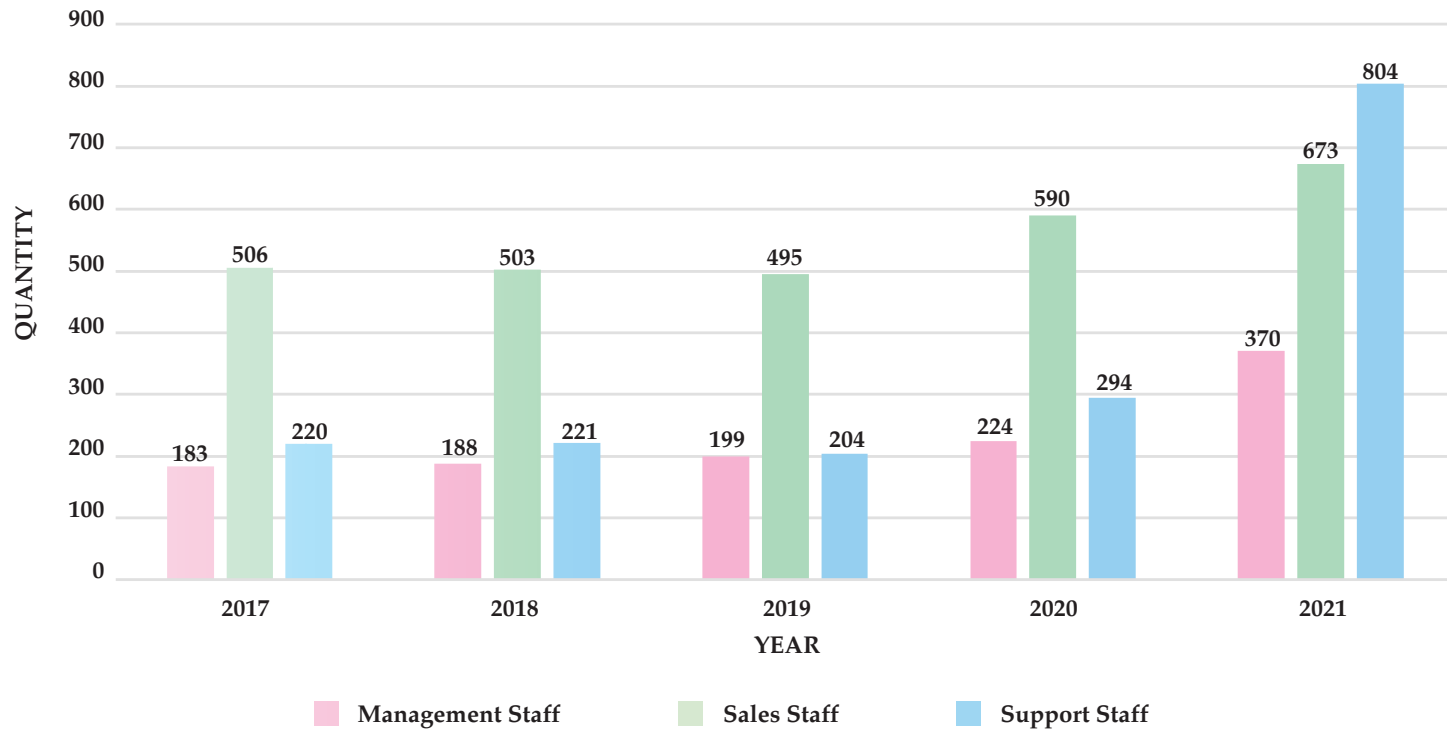
## Number of employees (permanent and contract) employed by member companies 2017-2021

The number of management-level employees increased between 2017 and 2021, suggesting that the industry grew and expanded during the term under review. Although the number of staff showed a general increase over time, the number of sales personnel employed showed only a marginal increase, possibly due to increased dependence on digital apps, business restructuring or transformation of business models.



Source: PhAMA

## Employment numbers by functions between 2017-2021 (9 companies surveyed)



## SHARED SERVICES

Shared Services and Outsourcing (SSO) are increasingly popular with both major multinationals and mid-size businesses and are part of Malaysia's Economic Transformation Plan.

Compared to Centralised Services, SSO models leverage on digitalisation and enjoy reduced cost from sharing operation centres. This, in turn, helps mitigate disruptions in operations.

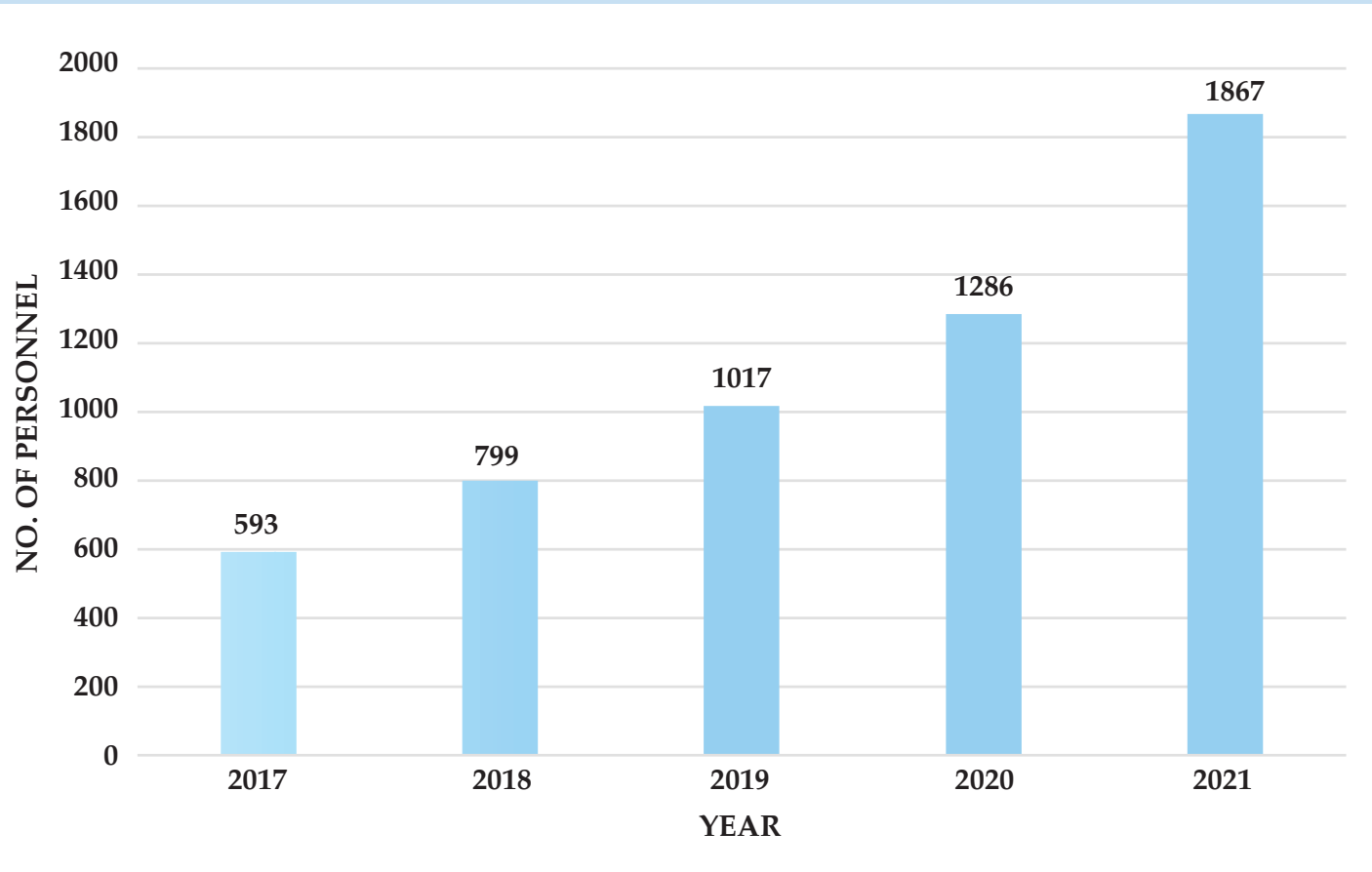
Six of the member companies surveyed offer shared services to other outfits in the region. One of the shared service units has been operating in Malaysia since 2005, with others being established in 2015, 2016, 2017 and 2018. The number of employees under the SSO contracts showed a consistent upward trend year on year, from 593 in 2017 to 1,867 in 2021, a testament to the confidence levels of global corporate communities in Malaysian capabilities.

The shared services are responsible for operations in APAC, Malaysia, South Asia, Africa, South America, Australia, China, Hong Kong, India, Indonesia, Korea, New Zealand, Philippines, Taiwan, Thailand, Vietnam, Singapore, Bangladesh, Myanmar, Sri Lanka, Pakistan, Japan, UK, Switzerland, Germany, Brazil, US, Spain, Poland, Hungary; Canada, Costa Rica, Singapore, Cambodia, Vietnam and the Greater Gulf area.

Areas of expertise offered by the shared services units	No of units
Finance process & services	5
Taxation	5
FRA (Forward Rate Agreement) services	1
Clinical research services	2
Information technology	3
Legal/Control & compliance	1
Medical information	1
Human resource services	4
Training services	1
Procurement	2
Others	3

Source: PhAMA

## No. of direct personnel employed under SSO from 2017-2021



Source: PhAMA



## BUILDING THE HEALTHCARE SECTOR TOGETHER

Continuing Medical Education (CME) is a compulsory activity by the Malaysian government to ensure healthcare professionals stay updated with the latest advancements in medicine. CME can be in the form of LIVE events, textual content, online programmes, audio, video, and other forms of electronic media.

PhAMA members have consistently contributed to CME to enhance scientific knowledge within the healthcare industry. Based on the companies surveyed, there were 16 CME events on new product launches from 2017 and 2018. The numbers dipped to 12 in 2019 but picked up again in 2020 and 2021 to 26 and 43 respectively.

The number of CME events continued to rise from 2017 to 2019, denoting continued interest in clinical updates on specific diseases and new treatment regimes. The eight companies surveyed invested MYR38.28 million on CME during the term under review, conducting 12,205 CME events in four distinct categories.

## CME events by PhAMA member companies between 2017-2021

	Year					Total
CME -Continuous Medical Education	2017	2018	2019	2020	2021	
Continued education	1780	2251	2953	1810	3114	11908
New clinical data	4	25	16	41	54	140
New product launches	16	16	12	26	43	113
New indication	6	0	10	14	14	44

\*11 companies responded for Continuous Medical Education, 5 for new clinical data, 9 for new product launches and 6 for new indication. The number of companies vary due to the selective responses submitted by survey respondents.

**Source: PhAMA**



## M3C Taskforce: Key Initiatives

### MALAYSIA CANCER CARE COALITION (M3C)

The Malaysia Cancer Care Coalition (M3C) was established in 2017 to elevate cancer care and improve patient outcomes. It aims to achieve this through early intervention activities i.e., encouraging more populations to be screened and detected at an earlier stage of their cancer, exploring PPP for innovative financing options, and alignment with the Government's National Strategic Plan for Cancer Control Programme (NSPCCP).

M3C's current focus is on reforming health financing for cancer care, proposing for 10% incremental increases in the National Budget for cancer, exploring PPP for innovative financing solutions, earmarking at least 5% of annual

revenue from sin taxes for cancer care financing, introducing public financing, community-based health insurance (CBHI) schemes or co-pay systems, and introducing portable health insurance with cancer-specific coverage.

Another pillar of focus is a shift towards value-based medicine. This means adopting patient-centric frameworks to determine and assess value, establishing value assessment framework using care pathways and identifying best-practice care pathways for at least one cancer.

To provide better governance in cancer control, M3C is advocating for a multi-sectorial central governance body for the NSPCCP that also involves non-health stakeholders (e.g., businesses, welfare NGOs).

To improve the quality of life for cancer patients, there is a need for patient navigation and access to psychosocial support. In the upcoming years, M3C will be working to mainstream patient navigation in cancer programmes as part of quality, patient-centric cancer care.

M3C also aspires to strengthen the monitoring and application of cancer control data by utilizing and making public the KPIs for the evaluation of NSPCCP, and harnessing resources from the Malaysian Health Data Warehouse (MHDW) in evaluating cancer care. The data from MHDW needs to be more holistic by making cancer a mandatory notifiable disease for non-Ministry of Health healthcare facilities.

## Webinars



Meeting with Protect Health Corporation for potential collaboration.





World Cancer Day 2022  
celebration with  
Unit Kanser MOH.

## GROOMING FUTURE TALENTS: PROVISIONALLY REGISTERED PHARMACIST TRAINING

The Provisionally Registered Pharmacist (PRP) Programme is a one-year training programme for pharmacy graduates in preparation for registration as Fully Registered Pharmacists in collaboration with Clinical Research Malaysia. The programme provides a comprehensive and holistic view of the pharmaceutical industry, from drug discovery and development, to marketing and distribution of medicines.

PhAMA and PhAMA members are strategic partners of the government in undertaking the job placements and training of PRPs. The training exposes PRPs to the different roles of pharmacists in society, providing them the opportunity to develop professionally and personally through interactions with different departments within the organisation.

The programme creates a pool of talents with a balanced experience and strong understanding of industry operations. Seven PhAMA members participated in the PRP training programme in 2022, with 13 PRPs attending the training.



PRP training on 5 September 2022 at the PhAMA office.

## CORPORATE SOCIAL RESPONSIBILITY

### Engaging as Part of a Larger Eco-System

As responsible corporate citizens, PhAMA member companies are no strangers to Corporate Social Responsibility (CSR) especially in the medical landscape. CSR activities, however, slowed down over the pandemic period as the world grappled with a myriad of uncertainties. As border controls eased in May 2022, more CSR activities could be conducted, and activities are expected to revert to pre-pandemic levels.

### CSR activities conducted by selected PhAMA member companies surveyed, between year 2017 – 2021.

Description	2017 - 2021
Disease awareness campaigns	148
Community Programmes	52
Social education	4
Patient group support	41
Environment	
Education/Training (Apart from Continuous Medical Education (CME) for healthcare professionals)	35

Source: PhAMA

### CSR Feature: Mundipharma

Many students especially from lower-income families had trouble keeping up with their studies during the COVID-19 pandemic due to lack of digital support. In 2021, Mundipharma donated 12 refurbished laptops to Tzu Chi Foundation to assist families struggling with education progress to help them join online classes.





## CSR Feature: ROCHE

Roche's philosophy of CSR is to create lasting impact by supporting local efforts to build stronger and healthier communities. In 2020, Roche Malaysia provided 500,000 COVID-19 test kits for the screening of workers in high-risk areas such as factories in supporting the Government's effort in battling the pandemic. Roche also set up 10 testing labs in the public and private sector, supplementing the labs with over a million COVID tests.

The company coordinated closely between their global manufacturing facilities and the Malaysia government in ensuring uninterrupted supply of drugs needed for the treatment and management of COVID-19 patients.

Understanding the need to deliver timely and accurate information to the public, Roche Malaysia was amongst the first to support patient groups by initiating disease awareness programmes via LIVE webinars. Roche Malaysia also tirelessly supported and partnered various stakeholders throughout 2020-2021, enabling healthcare professionals to stay engaged and connected with patients-caregivers on topics of interest during the pandemic.

Roche Malaysia continued supporting oncology, renal and rheumatoid arthritis patients throughout the pandemic through the Roche Patient Assistance Programme (MYRPAP) and Roche Cares Program. Initiated in 2007, MYRPAP has enrolled over 11,400 patients as of end 2021, which enables patients to continue their treatments for better outcomes.

Roche Cares, another patient assistance programme that works on a tripartite co-payment model, aims to reduce the financial burden of patients in the lower M40/B40 groups in accessing Roche innovative treatments to continue their treatment journey. As of 2021, more than 100 patients were enrolled in Roche Cares.

Despite the pandemic, Roche employees worldwide continued with their Roche Global CSR initiative - Roche Children's Walk, where Roche employees raised funds to support underprivileged children. In 2020-2021, Roche employees raised funds for three children's homes.





Patrik Grande receiving the AMCHAM Cares Award on behalf of Novartis Malaysia at AMCHAM Luncheon.



## CSR Feature: NOVARTIS

To support the increasing number of patients undergoing treatment for Malaysian Chronic Myeloid Leukemia (CML) and Gastrointestinal Stromal Tumor (GIST), Novartis Oncology Access team had been providing universal coverage for nearly a decade under the Malaysian Patient Assistance Program (MYPAP), a cost-sharing contribution model in partnership with the Ministry of Health (MoH). This unique model enables the annual treatment cost to be partially covered by both MoH and Novartis. To date, it has supported over 2,000 people living with CML and GIST.

When COVID-19 spiraled into a global health crisis in 2020, Novartis Malaysia took the lead in keeping healthcare front-liners and at-risk communities nationwide safe. Novartis contributed MYR2.7mil across 2020 and 2021, which was used for PPEs, hand sanitizers and rapid test kits as immediate response and recovery efforts for the pandemic in Malaysia.

Beyond the pandemic, Novartis is advancing on its Environmental, Social and Governance (ESG) agenda globally by issuing a bond linked to targets for global health and access to medicine, which translates into increasing access to strategic innovative therapies by 200% in low and middle-income countries (LMICs) by 2025.

## CSR Feature: PhAMA

When the COVID-19 pandemic struck, PhAMA members contributed 2000 sets of PPEs, 150,000 face masks and 9,000 bottles of sanitizers to the Ministry of Health Malaysia to help support frontliners' efforts in managing the spread of the virus. PhAMA members who were involved in the initiative were:

1. Amgen Biopharmaceuticals Malaysia Sdn. Bhd.
2. DKSH Malaysia Sdn. Bhd.
3. Pfizer (M) Sdn. Bhd.
4. Takeda Malaysia Sdn. Bhd.
5. Merck Sharp & Dohme (M) Sdn. Bhd.
6. Merck (M) Sdn. Bhd.
7. Abbvie Sdn. Bhd.
8. Boehringer Ingelheim (Malaysia) S/B
9. Johnson & Johnson Sdn. Bhd.
10. Lundbeck Malaysia
11. Novo Nordisk Pharma (M) S/B
12. Primabumi Sdn. Bhd.
13. Roche (Malaysia) S/B
14. Zuellig Pharma Sdn. Bhd.
15. AstraZeneca S/B
16. A. Menarini (Singapore) Pte. Ltd.
17. Abbott Laboratories (M) S/B
18. Allergan Malaysia Sdn. Bhd.
19. Bayer Co. (Malaysia) Sdn. Bhd.
20. Eisai (M) Sdn. Bhd.
21. Mitsubishi Tanabe Pharma Malaysia Sdn. Bhd.
22. Servier (M) Sdn. Bhd.







Contribution from PhAMA members to MOH for COVID-19 management in Malaysia on 16 April 2020.

## CSR Feature: PhAMA's Disaster Relief Fund

The tail end of Typhoon Rai (Odette) that hit the Philippines in the last week of Dec 2021 struck Malaysia on 17 December 2021, causing continuous rain that resulted in massive flooding in Selangor, Pahang and Johor.

After flood waters receded, the authorities battled potential health risks posed by infections from bacteria, parasites, viruses and vectors such as rats and flies. To help local authorities manage the overwhelming amounts of post-flood waste and mitigate risks of potential disease outbreaks, PhAMA stepped forward to help clear the mountains of trash resulting from the floods.

Almost 400 tons of waste were cleared from six locations (Taman Sri Muda, Taman Hulu Langat Jaya, Lorong Sungai Keramat 10A, Seksyen 29/ Jalan Tabor 33/22, Seksyen25 Klang Utama, Kampung Jawa Klang, Karak/Telepong) with 15 backhoes, 37 lorries and roro bins.

PhAMA members who participated in the initiative were Johnson & Johnson and Abbvie. The Board of Directors also approved the setting up of the PhAMA Disaster Relief Fund in March 2022, which can be mobilised at short notice in the event of large scale disasters.



Seri Muda, Klang on 29 December 2021.



President of PhAMA, Mr Chin Keat Chyuan, Vice-President Dr Sanjeev Panchal and Executive Director Chan Li Jin visiting flood-affected communities.





## PhAMA Sports

After a hiatus of two years due to the pandemic, PhAMA Sports returned in 2022, with a Bowling Tournament held on 30 July and Badminton Tournament on 20-21 August.

27 teams from 13 PhAMA member companies participated in the Bowling Tournament held at Sunway Mega Lanes, where DKSH emerged Champion, followed by Zuellig and MSD.

The Badminton Tournament 2022 held at the New Vision Badminton Centre was attended by 21 teams from 18 member companies, with Abbott taking the championship followed by DKSH and Johnson & Johnson.



### REFERENCES

1. IQVIA. (2021). Pricing Policy Cost-Benefit . Kuala Lumpur: IQVIA.
2. WHO. (2020, December 9). The top 10 causes of death. Retrieved from WHO: <https://www.who.int/news-room/fact-sheets/detail/the-top-10-causes-of-death>
3. (n.d.). Retrieved from <https://www.sciencedirect.com/topics/immunology-and-microbiology/infectious-diseases>
4. Seventer, J. M., & Hochberg, N. S. (2016, October 24). Principles of Infectious Diseases: Transmission, Diagnosis, Prevention, and Control. Retrieved from National Library of Medicines: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7150340/>
5. Elsevier. (2022). Infectious Diseases. Retrieved from Science Direct: <https://www.sciencedirect.com/topics/immunology-and-microbiology/infectious-diseases>
6. Ogbru, O. (2022, 7 26). Biologics (Drug Class). Retrieved from MedicineNet: [https://www.medicinenet.com/biologics\\_biologic\\_drug\\_class/article.htm](https://www.medicinenet.com/biologics_biologic_drug_class/article.htm)
7. Lu, C., & Jacob, E. C. (2019, June 18). Biosimilars: Not Simply Generics. Retrieved from USPharmacist: <https://www.uspharmacist.com/article/biosimilars-not-simply-generics>



## PhAMA TURNS 50

As PhAMA celebrates its Golden Jubilee this year, the Board of Directors took a concerted look at its organizational structure and governance, while formulating strategic directions that will drive the organization forward as the voice of the industry. While there were bold changes to the operational aspects, PhAMA remains committed to its key mission of increasing access to innovative medicines for Malaysia.

This will be achieved through increased partnerships and collaborations, firstly among PhAMA member companies, and with public and private sector stakeholders. The strategic adoption of a more inclusive approach aims to bring together all stakeholders together towards a shared cause of a healthier Malaysia.

Moving forward, training and capacity-building in the technical aspects of regulatory, compliance and legal frameworks will remain, if not reinforced. There will also be more efforts to increase brand visibility for PhAMA, supported by the larger fraternity of member companies.

PhAMA records appreciation to all who have played a part in history of the organisation. On to the next 50 years and beyond!

### PAST PhAMA PRESIDENTS

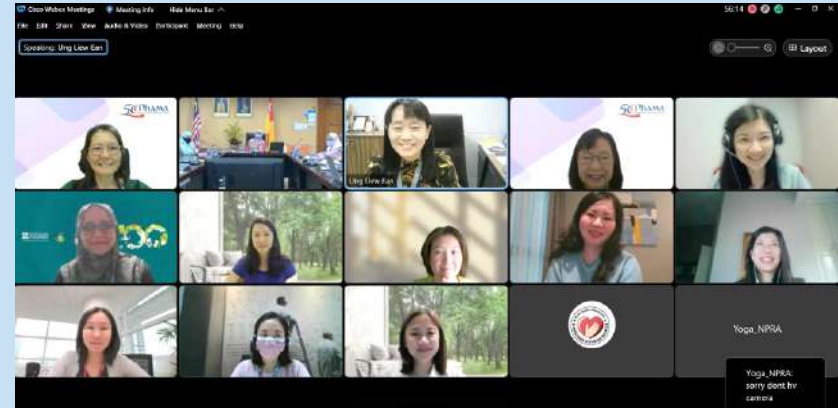
Name	Year
Alex Tan	1972-1973
Danny Hashim	1973-1974
C.C Lai	1974-1977
T. Dielenberg	1977-1979
Leo C.E. Liew	1979 (March-Sept)
John C.P. Chang	1979-1983
T. Dielenberg	1983-1985
Samuel Y.S. Wong	1985-1987
Radzmi Rahmat	1987-1989
Dr Chan Kuk Ewe	1989-(Sept)
Chew Soon Keong	1989-1993
Zainal Abidin Majid	1993-1997
Radzmi Rahmat	1997-1999
Ricky Ngiau	1999-2001
Dr Choe Tong Seng	2001-2005
Zaiton Jamaluddin	2005-2007
Ewe Kheng Huat	2007-2012
Yew Wei Tarng	2012-2015
Muru Annamalai	2015-2016
John McKendry	2017-2018
Chin Keat Chyuan	2019-2022

### PAST EXECUTIVE DIRECTORS

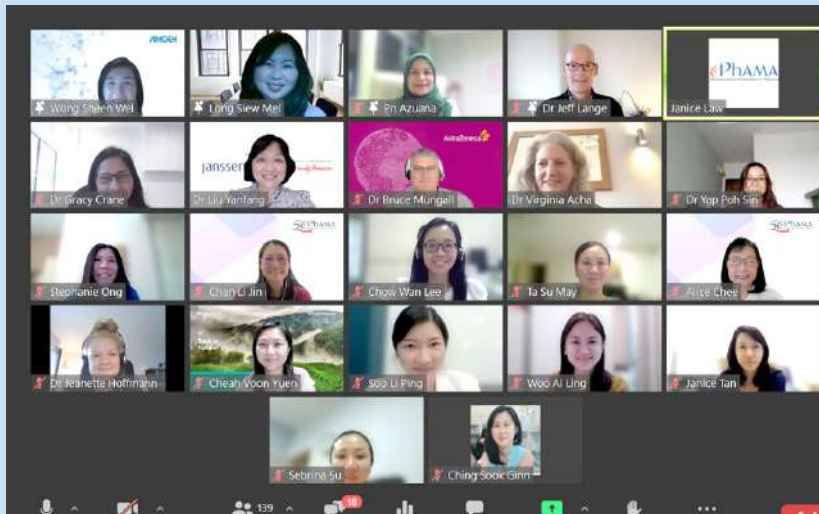
Name	Year
Yeap Boon Chye	1986-1995
Normah Naim	1997-2001
Keh Song Hock	2001-2012
Ewe Kheng Huat	2014-2019
Chan Li Jin	2021-Present



Active Pharmaceutical Ingredients Webinar.  
24 May 2022 | Online



Engagement with NPRA on Medicine Shortage.  
3 August 2022 | Online



Webinar on Real World Data/Evidence.  
20-21 February 2022 | Online



Industry Consultation on Health Reforms White Paper.  
4 August 2022 | One World Hotel





Industry Consultation on Health Reforms White Paper.  
4 August 2022 | One World Hotel





Budget Impact Analysis Training.  
14 July 2022 | Taylors University



MITI Dialog.  
25 August 2022 | Menara MITI



Quarterly Power Lunches.  
10 August 2022 | Sheraton Petaling Jaya Hotel



Engagement with Ministry of Health on Medicine  
Price Control.  
5 January 2022 | Kementerian Kesihatan Malaysia



Engagement with National Cancer Society Malaysia.  
13 July 2022 | PhAMA Office



Engagement with National Institute of Health.  
15 June 2022 | NIH Setia Alam



Raya Open House.  
10 May 2022 | Aloft Hotel Kuala Lumpur





Beach Cleaning.  
9 April 2022 | Pantai Redang, Sekinchan







Mangrove planting.  
13 August 2022 | Kuala Selangor Nature Park







APEC-PhAMA Health Financing Forum.  
6 September 2022 | Marriott Putrajaya



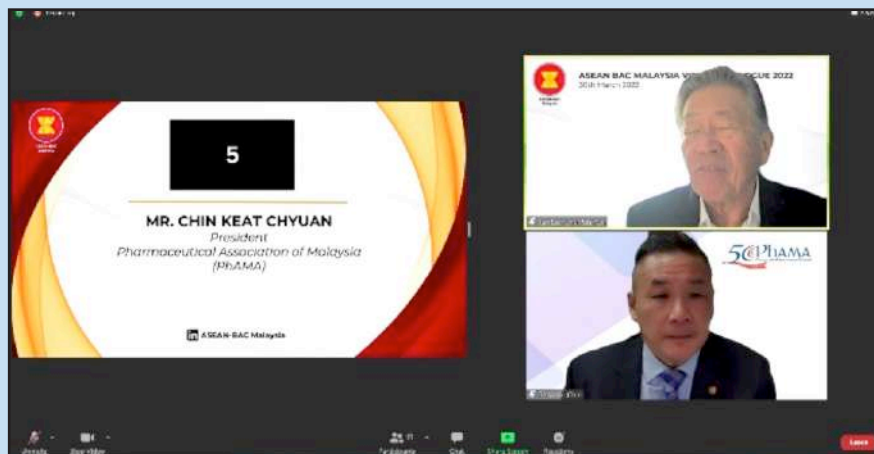
Board of Directors Meeting.  
10 May 2022 | Aloft



Meeting with PSP on Pool Procurement.  
29 August 2022 | NPRA



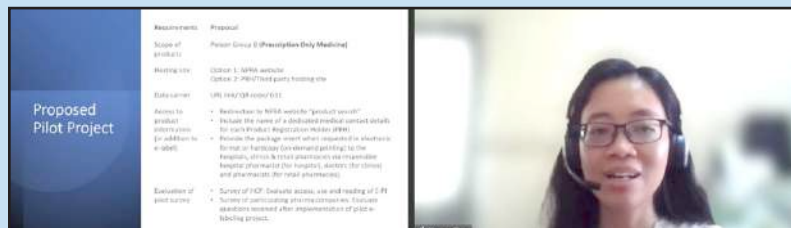
Stakeholders Budget Consultation.  
23 August 2022 | Menara MOF



Industry Presentation at ASEAN-BAC Dialogue.  
30 March 2022 | Online



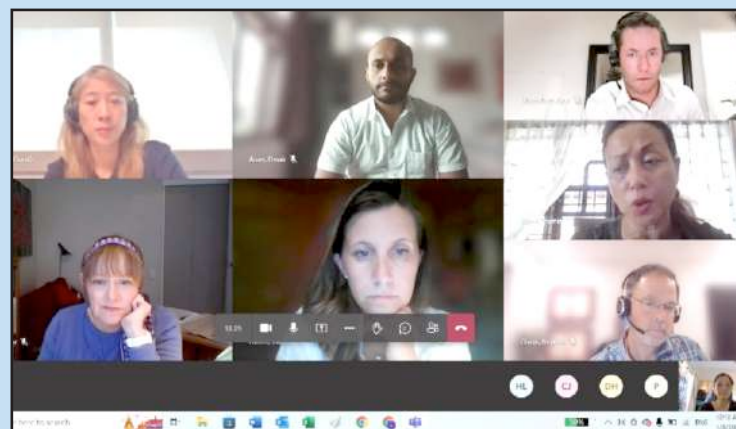
Training for Regulatory Personnel.  
7 April 2022 | Online



Regular engagements with stakeholders on e-labelling.  
Online



50<sup>th</sup> Anniversary Strategic Meeting with Board of Directors.  
10 January 2022 | Aloft Kuala Lumpur



Meetings with APEC Health Financing Network team members.





Engagement with MIDA.  
24 May 2022 | MIDA Office



Review of PRP Manufacturing Logbook.  
30 May 2022 | NPRA

## CHAPTER 2

# The Global Pharmaceutical Landscape

Pandemics are not new, yet the COVID-19 pandemic literally brought the world to a standstill. While many business sectors particularly hotels, airlines and hospitality industries suffered tremendous losses, the pharmaceutical industry was less impacted than others. However, just like other sectors, the industry similarly underwent massive transformation into what is today known as the 'new normal'.

Mckinsey's Future of Organisation Survey of 50 pharmaceutical companies revealed interesting insights, with 80% agreeing to a more agile way of working. Key enablers include digital and analytic capabilities, which help strengthen engagements with healthcare professionals and provide data for fast decision-making.<sup>1</sup>

The dependence on technology during the pandemic trained people to work remotely, encouraging more fast, virtual interactions between pharmaceutical staff and medical

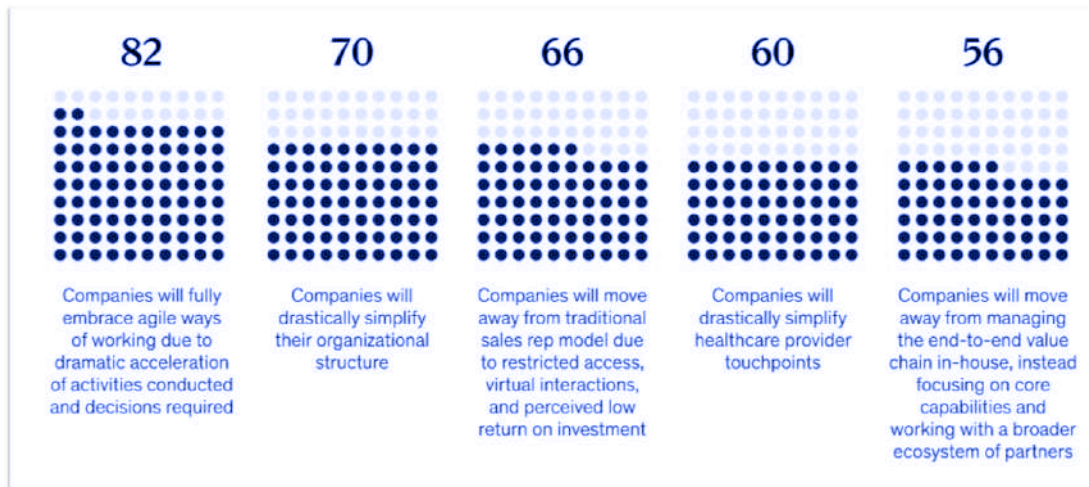
professionals. What resulted was increased communication, knowledge-sharing and access to subject matter experts, allowing pharmaceutical companies to increase new non-sales roles (patient journey managers) or boost R&D capabilities.<sup>1</sup>

Another significant change in the pharmaceutical industry was the reassessing of the field workforce, which typically used to be based on cost-effectiveness. In the new norm, value will be measured by satisfaction levels of stakeholders, rather than the number of stakeholders contacted. Business units have also been restructured around the capabilities to serve healthcare providers and stakeholders, rather than therapeutic areas, functions, and geographies as before.<sup>1</sup>

In conclusion, the shift in focus is now on stakeholder engagements, agile ways of working and adoption of digitization across all levels. The future starts now.







**Graph 1: Anticipated trends for the future of pharma, % of respondents**

Source: McKinsey Future of Organization Survey, Feb 2021 (n=50)

## COVID-19 PANDEMIC

In the past two years, not a single industry or country was spared the effects of the novel Coronavirus, COVID-19. From its first formal recorded appearance in China in late 2019 the disease swept across the globe, affecting 19 countries within a month, prompting the World Health Organisation (WHO) to declare a Public Health Emergency of International Concern (PHEIC) on 30 January 2020.<sup>2</sup>

### MORTALITY RATES

By the end of December 2020, WHO reported a total of 1,813,188 deaths attributed to COVID-19. Recent WHO estimates, however, suggest an

excess mortality of at least 3,000,000 un-reported mortalities. This figure accounts for both the total number of deaths directly attributed to the virus as well as deaths resulting from indirect impact, such as disruptions to essential health services or restrictions in travel. This discrepancy highlights a critical gap in data collection methodology and capacities across countries in producing accurate, complete and timely data.<sup>3</sup>

### BORDER MEASURES AND COLLABORATIONS ACROSS COUNTRIES

As the pandemic spread like wild fire, countries implemented counter border measures that managed to limit infections among the public

from the airborne, highly contagious disease.

However, both health and border measures created a global crisis affecting lives and livelihoods. The resulting global unemployment had severe repercussions to economies across all sectors. UN labour experts in 2021 had predicted that over 200 million would be unemployed in 2022, with women and youth the most affected.<sup>4</sup>

Pressed for a solution, Governments, International Institutions, Pharmaceutical companies and academia in 2020 collaborated across boundaries at an unprecedented level and pace to develop new norms and standards for prevention and disease control measures and help care for those affected – giving a new depth to the term Public-Private Partnerships (WHO, 2022).<sup>5,6</sup>

## VACCINES: SEARCH FOR A SOLUTION

Historically, the development of vaccines typically takes between eight to 15 years. In 2021, the raging pandemic, which brought about three-digit daily deaths, over-crowded hospitals and exhausted healthcare providers, called for accelerated vaccine development to save lives. The production process, which historically was undertaken sequentially, was held simultaneously, supported by innovative vaccine technologies and facilitated by for-fit regulatory processes/frameworks/approvals.<sup>6</sup>

Despite numerous challenges, vaccines for COVID-19 were approved and started rolling out about a year into the pandemic. The technologies utilised in the production of the COVID-19 vaccines included protein subunit, RNA, Non-Replicating Viral Vector and inactivated technologies.<sup>6</sup>

As of July 2022, there were at least 30 vaccines for COVID-19 which were approved globally for general or emergency use; 11 of which have received limited approval from at least one country. With this major achievement, infection rates declined and the world's population could look forward with some optimism to going back to some semblance of 'normal.' Perhaps what was not obvious was how the pandemic had actually changed the world as we knew it, and 'normal' now had a new meaning.<sup>6</sup>

**Figure 1: Acceleration of Vaccine Production Process during COVID-19**

Source:

<https://www.cfr.org/background/guide-global-covid-19-vaccine-efforts#chapter-title-0-5>



### 1. RESEARCH

Normal: 2-4 years  
Accelerated: 6 months



### 2. PRECLINICAL PREPARATION

Normal: 2 years  
Accelerated: 6 months



### 3. CLINICAL TRIAL

Normal: Up to 5 years  
Accelerated: 1.5 years



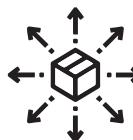
### 4. APPROVAL

Normal: 1 year  
Accelerated: 6 months



### 5. MANUFACTURING

Normal: 2 years  
Accelerated: 3- 6 months



### 6. DISTRIBUTION

Normal: 3-6 months  
Accelerated: 1 month







## COVID-19: EFFECT ON BUSINESS

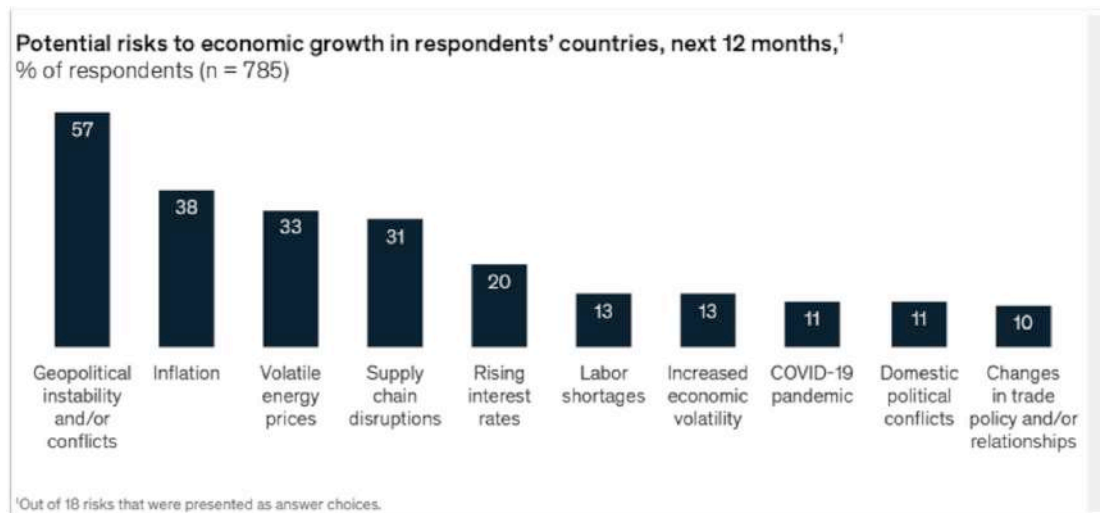
Due to restrictive COVID-19 containment measures, remote work and the closure of commercial activities created operational challenges across communities, countries and continents.

Thanks to the industry's global experience over the decades, pharmaceutical companies demonstrated the agility to adapt and respond quickly, helping the world to manoeuvre the situation back to normalcy. Research shows that some companies and industries have been able to weather challenges due to a culture of adaptability. The adoption of appropriate strategies and resiliency are key factors in addressing challenges and transforming crises into opportunities.<sup>7</sup>

## PHARMACEUTICAL MARKET GROWTH

According to the Pharmaceuticals Global Market Report 2021, the global pharmaceutical market was worth USD1,228.45 billion in 2020, and was projected to grow at a compound annual growth rate (CAGR) of 1.8%.<sup>8</sup>

A subsequent report shared by Report Linker in March 2021 estimated a 9.1% CAGR for the pharmaceuticals market worldwide, with growth from USD1,454.66 billion in 2021 to USD1,587.05 billion in 2022. This is primarily attributed to the companies' operations restructuring and recovery from the impact of COVID-19.<sup>9,10</sup>



**Graph 2: Geopolitical conflicts now loom large as a risk to domestic economic growth**  
Source: McKinsey Insights, 2022

## POST-PANDEMIC EFFECT ON GLOBAL ECONOMIES

The post-pandemic aftermath of COVID-19 is expected to continue affecting economies in the following years, characterised by geopolitical instability and/or conflict, inflation, volatile energy prices and supply chain disruptions, and rising interest rates.<sup>11</sup>

Companies that survive would need to be more agile, resilient and experienced to weather future health crises.<sup>1</sup>

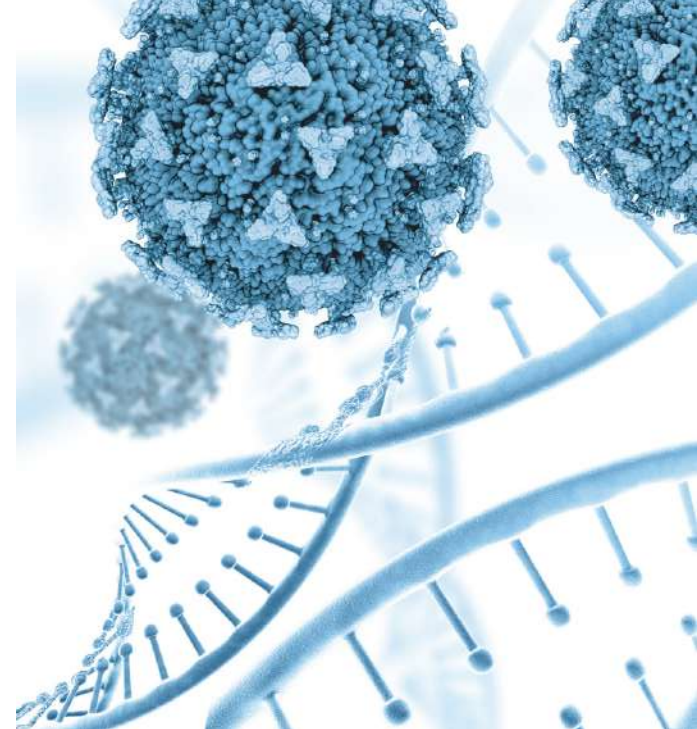
## PANDEMIC PREPAREDNESS

New variants of COVID-19, new emerging and re-emerging diseases, as well as solutions for present and rare diseases or those peculiar to certain geographical regions (like malaria in the tropics), necessitate continuous research and development activities. In preparation for future possible infectious disease risks, the pharmaceutical industry remains vigilant and committed to continuous investments in Research & Development (R&D).

As of 3 June 2022, there were 1,521 drugs and vaccines in development targeting COVID-19 (Mikulic).<sup>12</sup>

For vaccines alone, there were 198 vaccine candidates in pre-clinical trial and 170 in clinical trials as of 12 August 2022.<sup>12</sup>

It is critical to continue tracking genetic changes to ensure the virus is not mutating fast enough to resist vaccine-induced immunity. WHO has identified five variants of concern, two of which are currently circulating: Delta and Omicron.<sup>13</sup>



PLATFORM		CANDIDATE VACCINES (NO. AND %)	
PS	Protein subunit	54	32%
VVnr	Viral Vector (non-replicating)	21	12%
DNA	DNA	16	9%
IV	Inactivated Virus	22	13%
RNA	RNA	41	24%
VVr	Viral Vector (replicating)	4	2%
VLP	Virus Like Particle	6	4%
VVr + APC	VVr + Antigen Presenting Cell	2	1%
LAV	Live Attenuated Virus	2	1%
VVnr + APC	VVnr + Antigen Presenting Cell	1	1%
BacAg-SpV	Bacterial antigen-spore expression vector	1	1%
		170	

**Table 1: Source: Landscape of COVID-19 Candidate Vaccines**

<https://www.who.int/publications/m/item/draft-landscape-of-COVID-19-candidate-vaccines>

## FUNDING FOR RESEARCH & DEVELOPMENT

Traditionally, innovation strategy starts with scientific discovery supported by grants from governmental and philanthropic sources, followed by product commercialization supported by pharmaceutical industry revenues and capital investments. This requires heavy multi-year investments, typically borne by pharmaceutical companies.

The COVID-19 pandemic has highlighted the need for new funding mechanisms to support the

growth of research, development, manufacturing, and distribution in the life sciences. At the height of the pandemic, governments and philanthropic grants had funded approximately one-third of the total investment in the life sciences (estimated total investment of \$194.2 billion in 2018), while the remaining was funded by the life sciences industry. This had propelled the development of the life-saving vaccines, allowing them to be available at non-profit prices and reaching the masses in record time.<sup>14</sup>

The Coalition for Epidemic Preparedness Innovations (a coalition of governmental and

philanthropic organizations) is proposing advanced market commitments to fund vaccine research and development with the understanding that recipients will supply vaccines later at prices that only cover the cost of production.

According to one estimate, governments and philanthropists contributed approximately one third of the total investment in life sciences in 2020.<sup>14</sup> What happens to financing of R&D activities post COVID? Will the pattern continue?

## REFERENCES

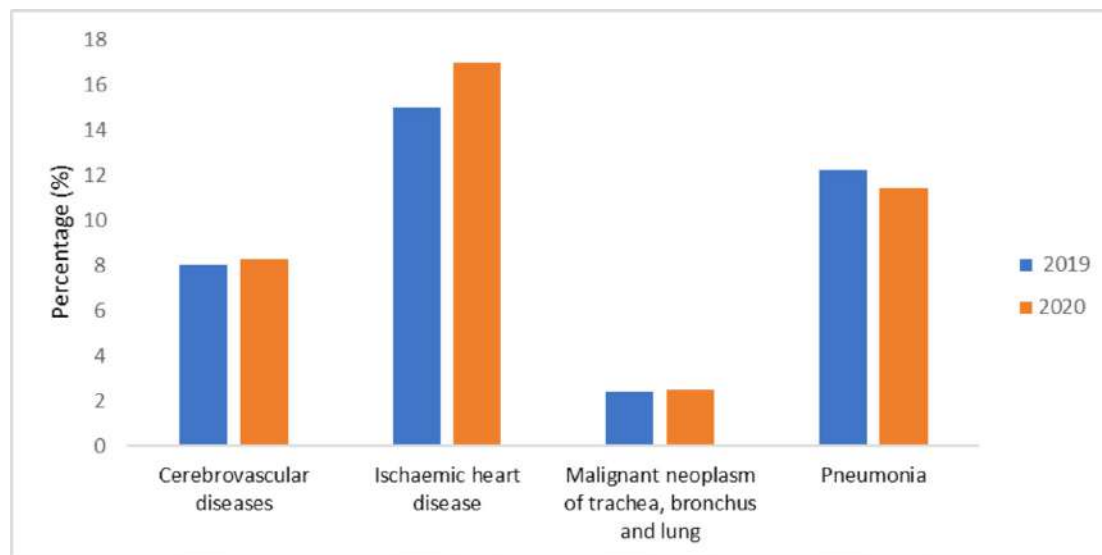
1. McKinsey Future of Organisation Survey (Feb 2021) n=50
2. Geraghty, J. (12 June, 2020). Go How Long Did it Take for the Coronavirus to go around the Planet? Retrieved from National Review: <https://www.nationalreview.com/corner/how-long-did-it-take-for-the-coronavirus-to-go-around-the-planet/>
3. WHO. (2022). The True Death Toll of COVID-19: Estimating Global Excess Mortality. Retrieved from World Health Organization: <https://www.who.int/data/stories/the-true-death-toll-of-COVID-19-estimating-global-excess-mortality>
4. UN News. (2 June, 2021). COVID crisis to push global unemployment over 200 million mark in 2022. Retrieved from United Nations: <https://news.un.org/en/story/2021/06/1093182>
5. WHO. (2022). Global research on coronavirus disease (COVID-19). Retrieved from World Health Organization: <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/global-research-on-novel-coronavirus-2019-ncov>
6. Klobucista, C. (19 July, 2022). A Guide to Global COVID-19 Vaccine Efforts. Retrieved from Council on Foreign Relations: <https://www.cfr.org/backgrounder/guide-global-COVID-19-vaccine-efforts#chapter-title-0-2>
7. Dago Diedrich, N. N.-S. (2 March, 2021). Strategic resilience during the COVID-19 crisis. Retrieved from McKinsey & Company: <https://www.mckinsey.com/business-functions/strategy-and-corporate-finance/our-insights/strategic-resilience-during-the-COVID-19-crisis>
8. Research & Markets. (31 March, 2021). Global Pharmaceuticals Market Report 2021: Market is Expected to Grow from \$1228.45 Billion in 2020 to \$1250.24 Billion in 2021 - Long-term Forecast to 2025 & 2030. Retrieved from GlobeNewswire: <https://www.globenewswire.com/en/news-release/2021/03/31/2202135/28124/en/Global-Pharmaceuticals-Market-Report-2021-Market-is-Expected-to-Grow-from-1228-45-Billion-in-2020-to-1250-24-Billion-in-2021-Long-term-Forecast-to-2025-2030.html/>
9. (n.d.). Retrieved from [https://www.reportlinker.com/p06241981/Pharmaceuticals-Global-Market-Report.html?utm\\_source=GNW](https://www.reportlinker.com/p06241981/Pharmaceuticals-Global-Market-Report.html?utm_source=GNW)
10. Report Linker. (4 March, 2022). Retrieved from Globalnewswire: <https://www.globenewswire.com/news-release/2022/03/04/2396935/0/en/Pharmaceuticals-Global-Market-Report-2022.html>
11. McKinsey Insights. (29 June, 2022). The Coronavirus Effect on Global Economic Sentiment. Retrieved from McKinsey & Company: <https://www.mckinsey.com/business-functions/strategy-and-corporate-finance/our-insights/the-coronavirus-effect-on-global-economic-sentiment>
12. Mikulic, M. (27 July, 2022). Leading companies by number of COVID-19 drugs and vaccines in development as of June 3, 2022. Retrieved from Statista: <https://www.statista.com/statistics/1119090/coronavirus-drugs-in-development-by-leading-companies/>
13. WHO. (2022). Tracking SARS-CoV-2 variants. Retrieved from WHO: <https://www.who.int/activities/tracking-SARS-CoV-2-variants>
14. Robinson, J. C. (14 January, 2021). Funding of Pharmaceutical Innovation During and After the COVID-19 Pandemic. Retrieved from JAMA Network: <https://jamanetwork.com/journals/jama/fullarticle/2775400>





## CHAPTER 3

# Introduction to Malaysia's Healthcare System



**Graph 2: Top 4 Principal Cause of Death (medical related)**

Source: DOS: Statistics on Causes of Death Malaysia, 2021

Malaysia topped other countries in the 2019 International Living Annual Global Retirement Index for the Best Healthcare in the World category, scoring 95 out of 100 for its world-class healthcare services and sophisticated infrastructure.<sup>1</sup>

Citizens and non-citizens have a choice to access healthcare services at public or private health institutions offering primary, secondary and tertiary care; with some facilities dedicated to treatment of specific diseases and therapeutic areas.<sup>2</sup> Additionally, health tourists can access healthcare services at private health facilities.<sup>3</sup>

Services provided at public medical facilities are funded by the government and social insurance. The public health sector provides Universal Health Coverage (UHC) to all at a nominal fee, where the

expenditure is subsidized by the government. These services are also accessible to non-citizens at a slightly raised fee.<sup>4</sup>

On the other hand, medical services at the private sector are funded with private insurance, employers, Out-of-Pocket or savings.<sup>4</sup> The private sector is patronized by medical tourists and segments of the population who prefer speedier access, convenience and more innovative treatment options.<sup>3</sup>

## POPULATION

Malaysia's population currently stands at 32.7 million in 2022, with 92.6% citizens and 7.4% non-citizens, compared to 32.6 million in 2021.<sup>5</sup>

The year-on-year growth of the total population decreased from 0.4% in 2019 to 0.2% in 2020, which is attributed to the repatriation of foreign workers and border closures due to COVID-19.<sup>5</sup>

The population is expected to grow at a slower rate, reaching 41.5 million in 2040 with 0-14 year-olds at 18.6%, 15-64 year-olds at 66.9% and 65+ and above at 14.5% by 2040.<sup>6</sup>

The top four causes of medical deaths are Ischaemic Heart Disease (17%), Pneumonia (11.4%), Cerebrovascular diseases (8.3%), and Malignant neoplasm of trachea, bronchus and lung (2.5%).<sup>7</sup>



## MEDICAL FACILITIES

There was a total of 156 public hospitals (including special medical institutions and non-MOH hospitals), and 250 private hospitals (including nursing and maternity homes) as of end 2019.<sup>2,8</sup>

According to the Ministry of Health's Health Facts 2021, there were 396 hospitals in Malaysia, providing 48,305 and 18,024 beds in the public and private sector respectively by end of 2020.<sup>9</sup>

Based on 2019 government data, the ratio of public to private hospitals in Peninsula Malaysia was approximately 1:2, which is reversed in Sabah and Sarawak with a ratio of 2:1.<sup>2,8</sup> The number of private hospitals decreased to 240 by end of 2020.<sup>2</sup>

Majority of hospitals are located on the west coast of Peninsula Malaysia, with approximately triple the number of hospitals and six times the number of beds in the Peninsula compared to Sabah and Sarawak.<sup>2,8</sup>

Kuala Lumpur alone has 11,456 beds, with six public hospitals with 8,184 beds and 46 private hospitals with 3,272 beds, providing the highest number of beds by sector/state. Selangor followed closely, with 10,536 beds; 5,907 from 14 public hospitals and 4,629 from 63 private hospitals.<sup>2,8</sup>

As of 2021, two additional hospitals were approved for construction under the 12th Malaysia Plan i.e. the Infectious Diseases Institute in Bandar Enstek in Negri Sembilan and Kapar Hospital in Selangor with 300 beds in total.<sup>10</sup> Others undergoing construction include hospitals in Tanjung Karang, Selangor and Pendang, Kedah, while Seberang Jaya Hospital in Pulau Pinang is due for expansion.<sup>11</sup>

As for primary healthcare, there was a total of 8,222 private clinics and 2,798 dental clinics in Malaysia as of December 2020.<sup>9</sup> There are about 3,000 community pharmacies in Malaysia (2016).<sup>12</sup>

## No. of Hospitals and Beds by State (2019)

State	Public hospital	Number of beds	Private hospital	Number of beds	Total beds
Johor	12	5200	34	1832	7032
Kedah	9	2711	10	637	3348
Kelantan	10	2787	6	190	2977
Melaka	4	1429	5	937	2366
Negeri Sembilan	7	1898	9	2019	3917
Pahang	12	5932	8	770	6702
Perak	16	5542	18	1118	6660
Perlis	1	545	1	37	582
Pulau Pinang	6	2413	20	2202	4615
Sabah	27	4876	7	276	5152
Sarawak	23	4083	19	759	4842
Selangor	14	5907	63	4629	10536
Terengganu	6	1698	4	67	1765
Kuala Lumpur	6	8184	46	3272	11456
Labuan	1	122	0	0	122
	156	53948	250	18745	72693

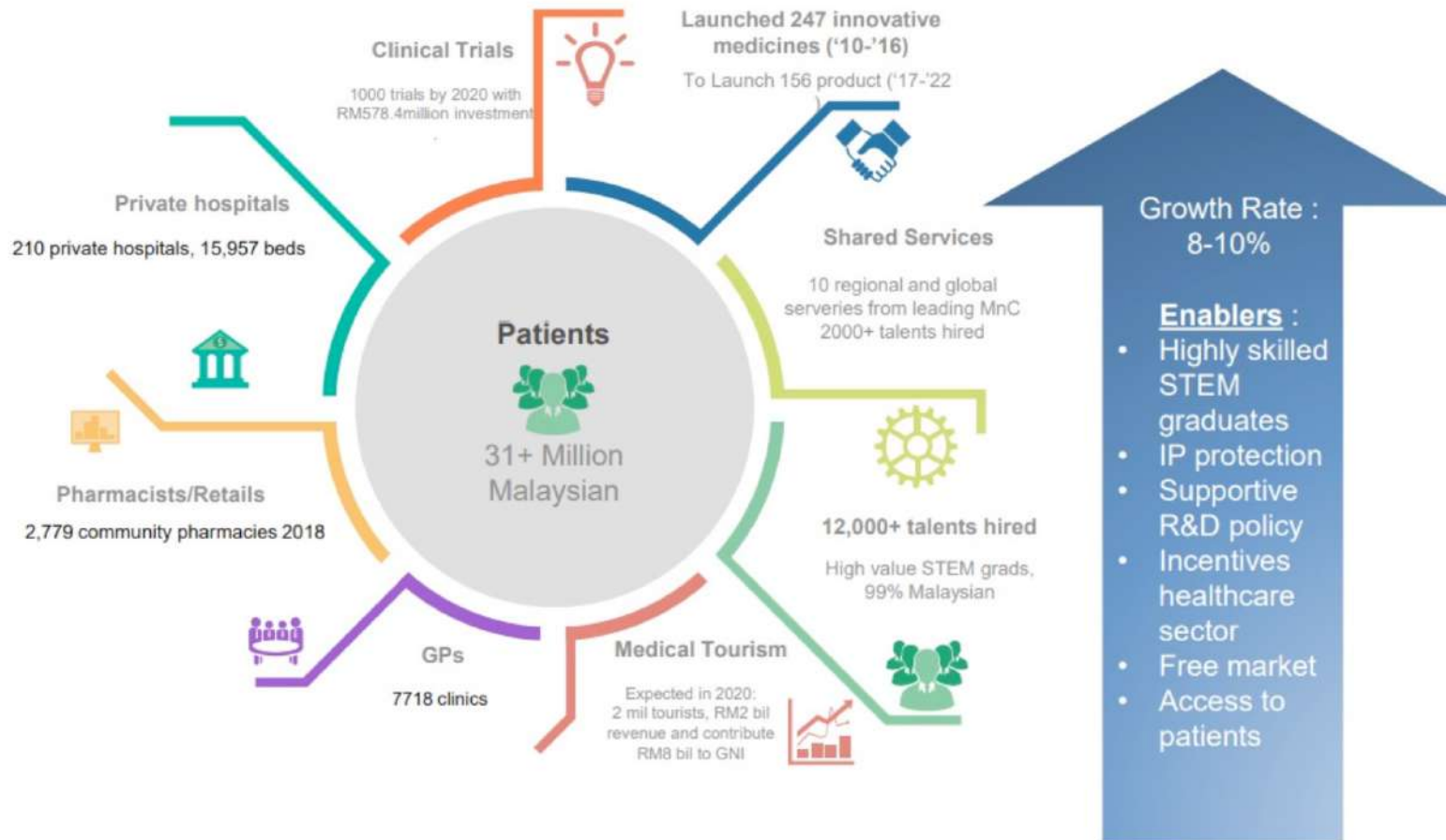
Sources: Data Gov (<https://www.data.gov.my/>)

DOSM Health Statistic ([https://www.dosm.gov.my/v1/index.php?r=column/cthree&menu\\_id=aTV1QmQxQ2JoSUR3UERiZUJ1N1dvdz09](https://www.dosm.gov.my/v1/index.php?r=column/cthree&menu_id=aTV1QmQxQ2JoSUR3UERiZUJ1N1dvdz09))

\*Public hospital includes special medical institutions and non-MOH hospitals.

\*\*The private hospital includes hospital, nursing and maternity homes.

## The healthcare ecosystem in Malaysia



## HEALTHCARE BUDGET

MOH's annual Health Facts show a consistent allocation between 9.0% - 10.4% of the National Budget for MOH between 2017 and 2021.

MOH received an additional budget of MYR32.41 billion or 2.1% of the GDP as its 2022 operating and development expenditure. A further MYR2 billion was also allotted for vaccination purposes, and MYR2 billion for

supplies such as medicines, consumables, PPE and health kits to combat COVID-19.<sup>13</sup>

## NATIONAL HEALTH EXPENDITURE

The national expenditure for health ranged from 4.0% - 4.7% of GDP between 2017 and 2019, with the public sector's expenditure hovering between 2.0% to 2.5% of GDP during the same years, showing a consistent trend on share of expenditure between the public and private sector.<sup>9,14</sup>

In 2020, the public sector healthcare expenditure as a total expenditure on health was 54.63%; and private, 45.37%. A similar trend was seen the preceding year i.e. 53.25% for the public and 46.75% for the private sector.<sup>9,14</sup>

Although the total expenditure on health increased between 2017 and 2020, the YoY data showed a downward trend of 7.72%, 6.28% and 4.33% respectively. The trend is cause for concern as healthcare needs continue to grow and the country heads towards an ageing population.<sup>9,14</sup>

## Financial Allocations to Ministry of Health Budget 2017, 2018, 2019, 2020 & 2021

	2017	2018	2019	2020	2021
Final Allocation	MYR	MYR	MYR	MYR	MYR
Total MOH Allocation	24,800,986,200.00	NA	28,678,743,500.00	30,602,080,900.00	31,941,504,300.00
Operating	23,462,797,400.00	NA	26,498,317,300.00	27,941,530,900.00	27,223,685,300.00
Development	1,338,188,800.00	NA	2,180,426,200.00	2,660,550,000.00	4,717,819,000.00
Per Capita Income	39,699.00	NA	44,870.00	47,155.00	46,101.00
% of Total MoH Allocation to National Budget	9.44	NA	9.12	10.3	10.39

\*The financial allocation data was extracted from the Ministry of Health's Health Facts series only to maintain accuracy and consistency of information. 2018 data is indicated as NA as it was not captured in the series.

### Sources:

Health Facts 2017: ([file:///C:/Users/User/Downloads/HEALTH%20FACTS%202017%20\(2\).pdf](file:///C:/Users/User/Downloads/HEALTH%20FACTS%202017%20(2).pdf))

Health Facts 2020: (<https://www.moh.gov.my/moh/resources/Penerbitan/Penerbitan%20Utama/HEALTH%20FACTS/Health%20Facts%202020.pdf>)

Health Facts 2021: ([https://www.moh.gov.my/moh/resources/Penerbitan/Penerbitan%20Utama/HEALTH%20FACTS/Health\\_Facts\\_2021.pdf](https://www.moh.gov.my/moh/resources/Penerbitan/Penerbitan%20Utama/HEALTH%20FACTS/Health_Facts_2021.pdf))

## Total Expenditure on Health by Public & Private Sectors

### Sources of financing, 1997 – 2019

Year	Public Sector			Private Sector			TEH (Nominal RM Million)
	Health Expenditure (Nominal, RM Million)	Health Expenditure (Constant*, RM Million)	Health Expenditure as Percentage of TEH (%)	Health Expenditure (Nominal, RM Million)	Health Expenditure (Constant*, RM Million)	Health Expenditure as Percentage of TEH (%)	
1997	4,366	7,882	51.02	4,190	7,565	48.98	8,556
1998	4,751	7,914	51.86	4,411	7,347	48.14	9,162
1999	5,240	8,728	52.61	4,720	7,862	47.39	9,960
2000	6,255	9,908	53.22	5,498	8,709	46.78	11,753
2001	7,331	11,850	57.68	5,379	8,694	42.32	12,711
2002	7,863	12,331	57.61	5,786	9,074	42.39	13,649
2003	10,381	15,660	60.31	6,831	10,305	39.69	17,212
2004	10,560	15,069	57.99	7,650	10,917	42.01	18,210
2005	9,718	13,270	53.27	8,524	11,640	46.73	18,243
2006	12,631	16,584	57.20	9,449	12,407	42.80	22,080
2007	13,804	17,293	56.51	10,622	13,306	43.49	24,426
2008	15,783	17,960	56.83	11,991	13,644	43.17	27,774
2009	17,695	21,383	60.23	11,685	14,120	39.77	29,380
2010	19,330	22,368	58.77	13,560	15,691	41.23	32,889
2011	20,251	22,231	56.33	15,702	17,237	43.67	35,953
2012	22,007	23,919	55.79	17,442	18,957	44.21	39,448
2013	22,868	24,811	54.91	18,780	20,376	45.09	41,647
2014	25,921	27,447	55.41	20,859	22,088	44.59	46,780
2015	26,996	28,690	53.78	23,198	24,655	46.22	50,194
2016	26,700	27,914	51.81	24,834	25,962	48.19	51,534
2017	29,256	29,471	52.00	27,009	27,208	48.00	56,264
2018	31,323	31,343	51.91	29,016	29,034	48.09	60,339
2019	33,731	33,731	52.45	30,575	30,575	47.55	64,306

## Total Expenditure on Health 1997 – 2019

### (MYR Million & Percent of GDP)

Year	TEH, Nominal (RM Million)	TEH, Constant (RM Million)*	Total GDP, Nominal (RM Million)**	MNHA Derived GDP Deflator*	TEH (Nominal) as % GDP
1997	8,556	15,448	281,795	59	3.04
1998	9,162	15,261	283,243	64	3.23
1999	9,960	16,590	300,764	64	3.31
2000	11,753	18,617	356,401	67	3.30
2001	12,711	20,544	352,579	66	3.61
2002	13,649	21,405	383,213	68	3.56
2003	17,212	25,965	418,769	70	4.11
2004	18,210	25,986	474,048	74	3.84
2005	18,243	24,910	543,578	78	3.36
2006	22,080	28,990	596,784	81	3.70
2007	24,426	30,599	665,340	85	3.67
2008	27,774	31,604	769,949	93	3.61
2009	29,380	35,503	712,857	88	4.12
2010	32,889	38,059	821,434	92	4.00
2011	35,953	39,468	911,733	97	3.94
2012	39,448	42,876	971,252	98	4.06
2013	41,647	45,188	1,018,614	98	4.09
2014	46,780	49,535	1,106,443	100	4.23
2015	50,194	53,345	1,176,941	100	4.26
2016	51,534	53,876	1,249,698	102	4.12
2017	56,264	56,679	1,372,310	105	4.10
2018	60,339	60,377	1,447,451	106	4.17
2019	64,306	64,306	1,510,693	106	4.26

Source: Health Facts 2020 Reference Data for 2019

([https://www.moh.gov.my/moh/resources/Penerbitan/Penerbitan%20Utama/MNHA/MNHA\\_Health\\_Expenditure\\_Report\\_1997-2019\\_02092021.pdf](https://www.moh.gov.my/moh/resources/Penerbitan/Penerbitan%20Utama/MNHA/MNHA_Health_Expenditure_Report_1997-2019_02092021.pdf))



## Health Expenditure by Public Sector Sources of Financing 1997-2019 (MYR Million)

TABLE 5.2.1b: Health Expenditure by Public Sector Sources of Financing, 1997-2019 (RM Million)

MNHA Code	Sources of Financing	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
MS1.1.1.1	Ministry of Health (MOH)	3,616	3,943	4,358	5,266	6,141	6,545	8,876	8,761	7,893	10,655	11,036	12,813	14,431	15,945	16,496	18,239	19,038	21,782	22,671	22,225	24,716	26,499	28,660
MS1.1.1.2	Ministry of Education (MOE)	328	330	373	416	509	563	602	649	670	720	859	999	1,039	1,243	1,245	1,311	1,261	1,376	1,335	1,308	1,280	1,347	1,579
MS1.1.1.3	Ministry of Defence (MOD)	42	46	48	54	82	68	79	74	81	96	109	136	133	127	140	172	175	186	169	154	132	103	150
MS1.1.1.9	Other federal agencies (including statutory bodies)	241	278	297	337	425	473	563	755	737	819	1,049	1,405	1,541	1,537	1,813	1,678	1,677	1,805	1,894	2,027	2,084	2,134	1,862
MS1.1.2.1	(General) State government	36	41	41	42	41	46	68	90	67	77	88	94	84	90	90	105	78	86	90	97	111	150	139
MS1.1.2.2	Other state agencies (including statutory bodies)	31	32	33	38	39	43	50	56	67	71	75	86	90	111	129	137	189	212	346	385	392	419	453
MS1.1.3	Local authorities (LA)	15	16	17	18	19	22	27	35	45	42	419	113	238	108	142	150	188	164	178	138	154	194	212
MS1.2.1	Employee Provident Funds (EPF)	7	15	20	24	32	36	43	56	61	46	51	49	38	34	39	38	42	46	52	56	58	67	83
MS1.2.2	Social Security Organization (SOCSO)	50	50	53	60	63	67	74	83	95	105	117	88	102	136	157	176	219	264	261	310	329	410	394
Total		4,366	4,751	5,240	6,255	7,331	7,863	10,381	10,560	9,718	12,631	13,804	15,783	17,695	19,330	20,251	22,007	22,868	25,921	26,996	26,700	29,256	31,323	33,731

## Health Expenditure by Public Sector Sources of Financing 1997-2019 (Percentage)

TABLE 5.2.1c: Health Expenditure by Public Sector Sources of Financing, 1997-2019 (Percent, %)

MNHA Code	Sources of Financing	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
MS1.1.1.1	Ministry of Health (MOH)	82.83	83.00	83.16	84.19	83.77	83.24	85.50	82.97	81.22	84.36	79.94	81.18	81.55	82.49	81.46	82.88	83.25	84.03	83.98	83.24	84.48	84.60	85.56
MS1.1.1.2	Ministry of Education (MOE)	7.52	6.95	7.11	6.65	6.94	7.16	5.80	6.14	6.90	5.70	6.22	6.33	5.87	6.43	6.15	5.96	5.51	5.31	4.94	4.90	4.37	4.30	4.68
MS1.1.1.3	Ministry of Defence (MOD)	0.97	0.96	0.92	0.86	0.84	0.86	0.76	0.70	0.84	0.76	0.79	0.86	0.75	0.66	0.69	0.78	0.77	0.72	0.63	0.58	0.45	0.33	0.44
MS1.1.1.9	Other federal agencies (including statutory bodies)	5.52	5.85	5.67	5.39	5.80	6.01	5.43	7.15	7.59	6.48	7.60	8.90	8.71	7.95	8.95	7.63	7.33	6.96	7.02	7.59	7.12	6.81	5.52
MS1.1.2.1	(General) State government	0.82	0.86	0.79	0.67	0.56	0.58	0.66	0.86	0.69	0.61	0.64	0.60	0.47	0.47	0.45	0.48	0.34	0.33	0.33	0.36	0.38	0.48	0.41
MS1.1.2.2	Other state agencies (including statutory bodies)	0.70	0.67	0.64	0.61	0.54	0.54	0.48	0.53	0.69	0.57	0.55	0.54	0.51	0.57	0.64	0.62	0.83	0.82	1.28	1.44	1.34	1.34	1.34
MS1.1.3	Local authorities (LA)	0.35	0.33	0.32	0.28	0.26	0.28	0.26	0.34	0.47	0.34	3.03	0.72	1.34	0.56	0.70	0.68	0.82	0.63	0.66	0.52	0.53	0.62	0.63
MS1.2.1	Employee Provident Funds (EPF)	0.16	0.32	0.38	0.38	0.43	0.46	0.41	0.53	0.63	0.36	0.37	0.31	0.21	0.17	0.19	0.17	0.18	0.18	0.19	0.21	0.20	0.21	0.24
MS1.2.2	Social Security Organization (SOCSO)	1.14	1.05	1.01	0.96	0.85	0.86	0.71	0.79	0.98	0.83	0.85	0.56	0.58	0.70	0.78	0.80	0.96	1.02	0.97	1.16	1.12	1.31	1.17
Total		100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Source: Health Facts 2020 Reference data for 2019

([https://www.moh.gov.my/moh/resources/Penerbitan/Penerbitan%20Utama/MNHA/MNHA\\_Health\\_Expenditure\\_Report\\_1997-2019\\_02092021.pdf](https://www.moh.gov.my/moh/resources/Penerbitan/Penerbitan%20Utama/MNHA/MNHA_Health_Expenditure_Report_1997-2019_02092021.pdf))





## PER CAPITA EXPENDITURE ON HEALTH

Health care spending per capita in constant values were at MYR710.00 in 1997 and peaked at MYR1,974 in 2019.

Due to inflation over time, the per capita on constant rate spend on healthcare expenditure gradually reduced in value. By 2019, the value of per capita on constant rate was the same as the per capita nominal of MYR1,974.00.<sup>4</sup>

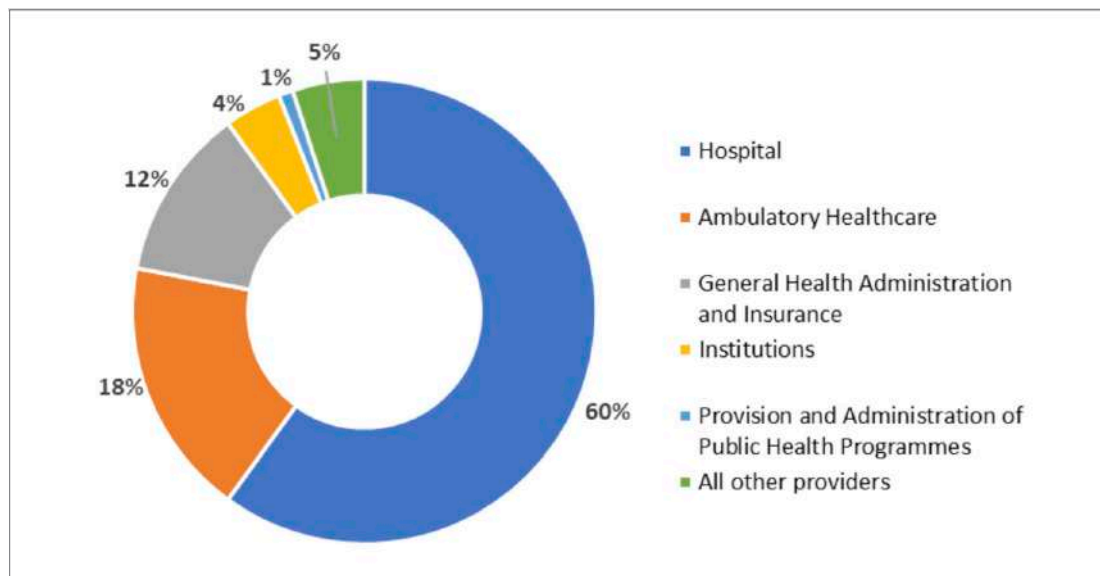
## SOURCES OF HEALTHCARE FUNDING

The public sector provides the main funding for Total Healthcare Expenditure (TEH) in the country, subsidizing around 98% of the total health expenditure. Funds are sourced from the federal government, state government, local authorities, and all other public entities such as the Employee Provident Fund (EPF) at 0.24% and Social Security Organization (SOCSO) at 1.17%.<sup>4</sup>

The expenditure within the public sector was largely on hospitalization, followed by ambulatory care and general health administration at 60%, 18% and 12% respectively.<sup>4</sup>

The Social Security Organization (SOCSO) has the potential to expand its health financing coverage to increase access to medical care for the private sector workers who are not covered by the scheme.





**Graph 1: Public Sector Health Expenditure in 2019: 52.5% of THE (MYR33,731 Million)**

Source: Public Sector Health Expenditure to Providers of Healthcare, 1997 – 2019 (MYR Million)

[https://www.moh.gov.my/moh/resources/Penerbitan/Penerbitan%20Utama/MNHA/MNHA\\_Health\\_Expenditure\\_Report\\_1997-2019\\_02092021.pdf](https://www.moh.gov.my/moh/resources/Penerbitan/Penerbitan%20Utama/MNHA/MNHA_Health_Expenditure_Report_1997-2019_02092021.pdf)

## PRIVATE SECTOR HEALTHCARE EXPENDITURE

The private sector healthcare services are funded largely through individual out-of-pocket (OOP) and Private Insurance. Increases in funding for private sector health expenditure showed increasing trends from 2018 to 2019, with increased awareness of having a health safety net.<sup>4</sup>

## OUT OF POCKET EXPENDITURE

OOP share of total health expenditure as a percentage of GDP in 2019 totalled MYR22,492 million, or 1.49% of TEH and 74% of private sector health spending.<sup>4</sup>

According to MOH's 1997–2019 Malaysia National Health Accounts (MNHA), OOP accounted for





between 29% and 37% of TEH and represents the largest single source of financing in the private sector amounting to an average of 74%. OOP health spending increased from MYR3,166 million to MYR22,492 million, or 1.5% of GDP over 22 years.<sup>4</sup>

Findings from the National Health & Morbidity Survey (NHMS) 2019 showed that in 2011, 3.6% of total household monthly expenditure was spent on healthcare. This figure grew to 5.1% by 2019, 81% of which was sourced from current income, 36% from savings and 11% on borrowings.<sup>15</sup>

Within the private sector the OOP spent for outpatient services stood at 41.60%, in patient services at 22.98% and cost of pharmaceuticals at 14.63%.<sup>4</sup>

## INSURANCE COVERAGE

Private Insurance is the second largest source of financing for healthcare in the Private Sector at 15.99%. The NHMS 2019 states that only 22% of the population are covered by Personal Health Insurance. 36% of the population felt that private health insurance is not required, whilst 43% cited unaffordability as the cause for not having insurance.<sup>15</sup>



## Health Expenditure by the Private Sector Sources of Financing 1997 – 2019 (MYR Million)

MNHA Code	Sources of Financing	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
MS2.2	Private insurance enterprises (other than social insurance)	295	365	421	516	599	718	964	1,062	1,084	1,246	1,413	1,709	1,991	2,273	2,614	2,774	2,916	3,203	3,623	3,840	4,085	4,313	4,889
MS2.3	Private MCOs and other similar entities	50	68	73	78	84	92	106	113	123	138	151	167	179	201	243	302	287	437	730	804	871	914	983
MS2.4	Private household out-of-pocket expenditure (OOP)	3,166	3,265	3,497	4,175	3,882	4,127	4,941	5,664	6,382	7,141	7,919	9,084	8,478	9,917	11,466	12,649	13,933	15,373	16,776	17,790	19,462	21,127	22,492
MS2.5	Non-profit institutions serving households (NGO)	64	70	71	87	93	104	118	131	148	160	186	214	234	269	312	363	78	40	69	87	92	92	90
MS2.6	All corporations (other than health insurance)	616	642	658	637	722	744	701	680	787	765	951	816	801	800	1,064	1,352	1,564	1,803	1,996	2,307	2,492	2,564	2,117
MS9	Rest of the world (ROW)	0	0	0	5	0	0	0	0	0	0	1	1	2	1	3	2	3	4	5	4	5	5	4
Total		4,190	4,411	4,726	5,498	5,379	5,786	6,831	7,650	8,524	9,449	10,622	11,991	11,685	13,560	15,702	17,442	18,780	20,859	23,198	24,834	27,009	29,016	30,575

Source: Health Facts 2020 Reference data for 2019

([https://www.moh.gov.my/moh/resources/Penerbitan/Penerbitan%20Utama/MNHA/MNHA\\_Health\\_Expenditure\\_Report\\_1997-2019\\_02092021.pdf](https://www.moh.gov.my/moh/resources/Penerbitan/Penerbitan%20Utama/MNHA/MNHA_Health_Expenditure_Report_1997-2019_02092021.pdf))

## Health Expenditure by the Private Sector Sources of Financing 1997 – 2019 (Percentage)

MNHA Code	Sources of Financing	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
MS2.2	Private insurance enterprises (other than social insurance)	7.03	8.28	8.92	9.38	11.13	12.42	14.11	13.89	12.72	13.19	13.30	14.25	17.04	16.76	16.65	15.91	15.53	15.36	15.62	15.46	15.13	14.87	15.99
MS2.3	Private MCOs and other similar entities	1.19	1.55	1.54	1.43	1.57	1.59	1.56	1.48	1.44	1.46	1.42	1.39	1.53	1.48	1.55	1.73	1.53	2.10	3.15	3.24	3.23	3.15	3.22
MS2.4	Private household out-of-pocket expenditure (OOP)	75.55	74.04	74.10	75.94	72.16	71.33	72.33	74.04	74.87	75.57	74.56	75.76	72.56	73.14	73.02	72.52	74.19	73.70	72.32	71.64	72.06	72.81	73.56
MS2.5	Non-profit institutions serving households (NGO)	1.53	1.58	1.51	1.59	1.72	1.80	1.73	1.71	1.74	1.70	1.76	1.78	2.00	1.98	1.99	2.08	0.41	0.19	0.30	0.35	0.34	0.32	0.30
MS2.6	All corporations (other than health insurance)	14.70	14.56	13.93	11.58	13.41	12.85	10.27	8.89	9.23	8.09	8.95	6.80	6.85	6.63	6.78	7.75	8.33	8.64	8.60	9.29	9.23	8.84	6.92
MS9	Rest of the world (ROW)	0.00	0.00	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.02	0.01	0.02	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.01
Total		100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Source: Health Facts 2020 Reference data for 2019

([https://www.moh.gov.my/moh/resources/Penerbitan/Penerbitan%20Utama/MNHA/MNHA\\_Health\\_Expenditure\\_Report\\_1997-2019\\_02092021.pdf](https://www.moh.gov.my/moh/resources/Penerbitan/Penerbitan%20Utama/MNHA/MNHA_Health_Expenditure_Report_1997-2019_02092021.pdf))

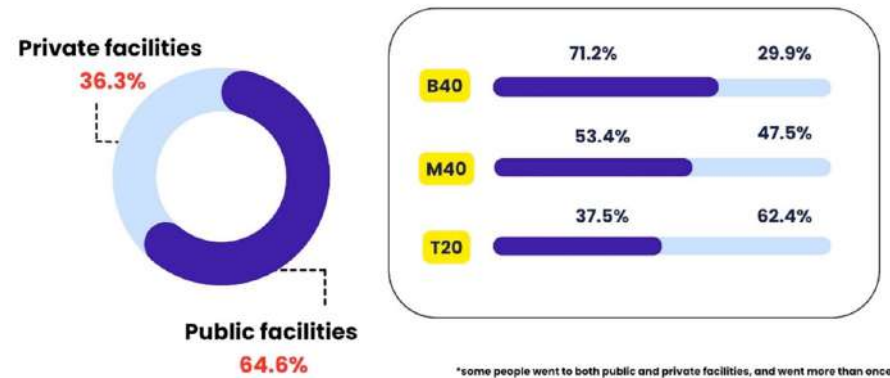
## UTILISATION OF HEALTHCARE SERVICES

Both public and private healthcare facilities provide primary, secondary and tertiary care. Utilization of healthcare services by the population is, however, influenced by income levels and age. For outpatient services involving primary care services, the majority of lower income groups frequent public health facilities (71.2%), while higher income earners would opt for private health facilities (62.4%). The elderly make up 40% of those who utilised outpatient services.<sup>15</sup>

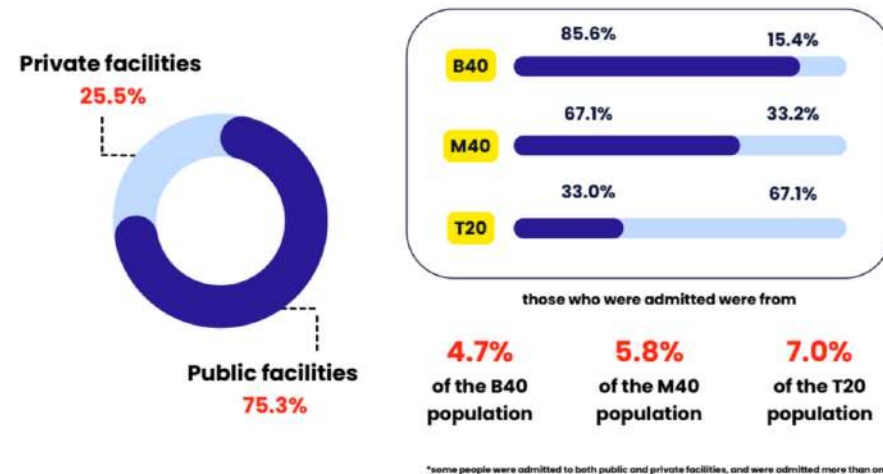
Similarly, for inpatient services requiring hospitalisation, the B40 population comprised 85.6% of patients in the public sector, while the T20 population made up 67% of patient load at private health facilities.<sup>15</sup>

The Minister of Health's goal for a paradigm shift in health calls for a decentralisation of healthcare services, with higher focus on primary care services in outpatient centres. This means increased investments in outpatient units, expanding their scope beyond curative care to preventive health practices such as the provision of health information to increase health literacy.

The focus on primary care aims to keep the population healthy in the long term, reducing the healthcare costs and burden of disease.



**Graph 3: Utilisation of Outpatient services at the Public & Private Sector by B40, M40 & T20**  
 Source: National Health and Morbidity Survey 2019

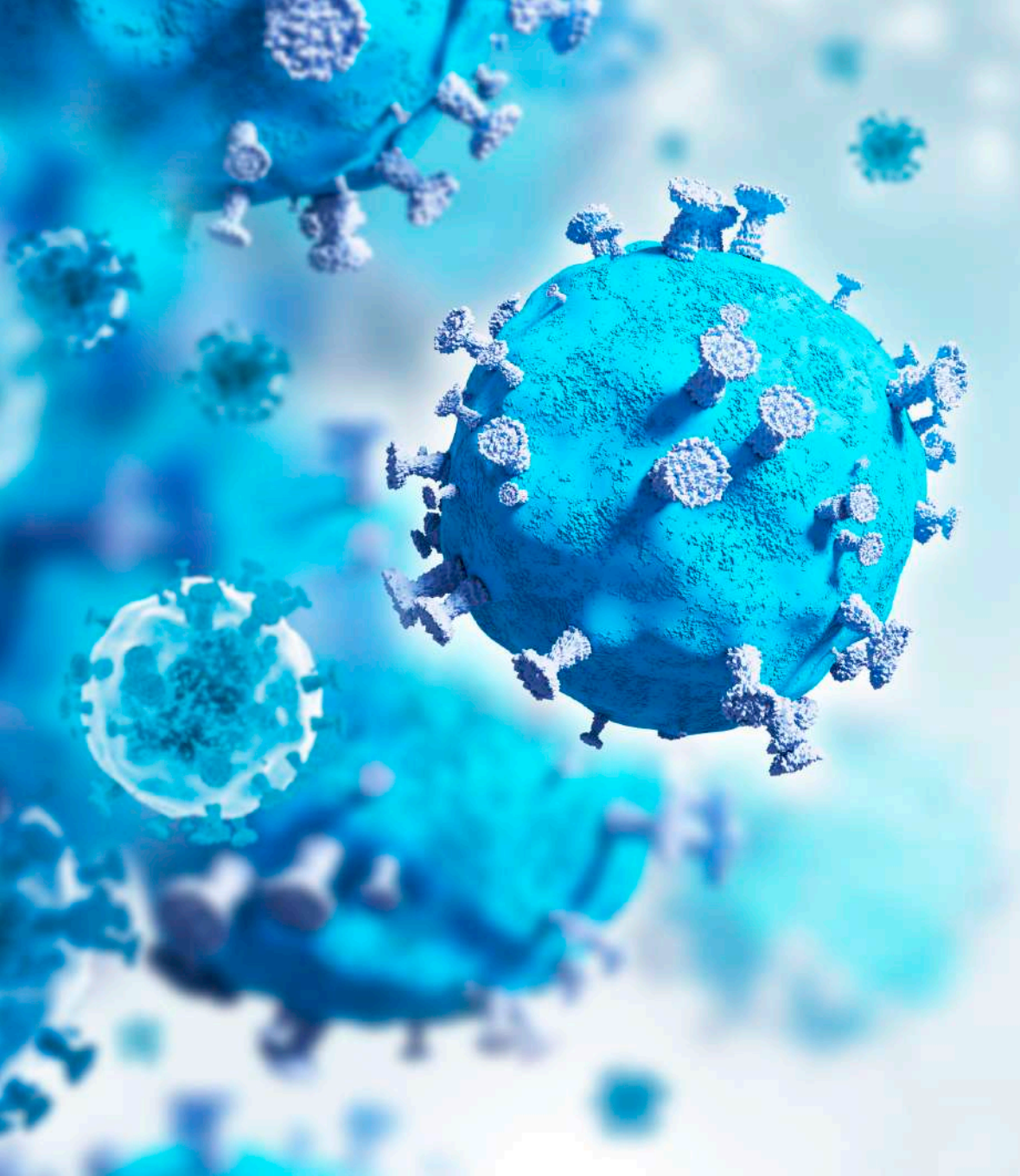


**Graph 4: Utilisation of Inpatient services at the Public & Private Sector by B40, M40 & T20**  
 Source: National Health and Morbidity Survey 2019

## REFERENCES

1. BERNAMA. (2019, February 17). Malaysia ranks 1st in world's best healthcare category. Retrieved from MIDA: <https://www.lab-asia.com/malaysia-ranks-1st-in-worlds-best-healthcare-category/>
2. DOSM. (2022, August 25). Health Statistics. Retrieved from DOSM: [https://www.dosm.gov.my/v1/index.php?r=column/cthree&menu\\_id=aTV1QmQxQ2loSUR3UERiUj1N1dvdz09](https://www.dosm.gov.my/v1/index.php?r=column/cthree&menu_id=aTV1QmQxQ2loSUR3UERiUj1N1dvdz09)
3. ITA. (2021). Malaysia - Country Commercial Guide. Retrieved from International Trade Institutions: <https://www.trade.gov/country-commercial-guides/malaysia-healthcare>
4. MOH. Malaysia National Health Accounts Health Expenditure Report 1997-2019. Retrieved from Health Facts 2020 Reference data for 2019: [https://www.moh.gov.my/moh/resources/Penerbitan/Penerbitan%20Utama/MNHA/MNHA\\_Health\\_Expenditure\\_Report\\_1997-2019\\_02092021.pdf](https://www.moh.gov.my/moh/resources/Penerbitan/Penerbitan%20Utama/MNHA/MNHA_Health_Expenditure_Report_1997-2019_02092021.pdf)
5. Department of Statistics Malaysia. (2022, July 29). Current Population Estimates, Malaysia, 2022. Kuala Lumpur: Department of Statistics Malaysia. Retrieved from Department of Statistics Malaysia: [https://www.dosm.gov.my/v1/index.php?r=column/cthemeByCat&cat=155&bul\\_id=dTZXanV6UUDyUEQ0SHNWQVhpSXNMUT09&menu\\_id=L0pheU43NWJwRWVSZkiWdzQ4TihUUT09](https://www.dosm.gov.my/v1/index.php?r=column/cthemeByCat&cat=155&bul_id=dTZXanV6UUDyUEQ0SHNWQVhpSXNMUT09&menu_id=L0pheU43NWJwRWVSZkiWdzQ4TihUUT09)
6. Department of Statistics Malaysia. (2022, September 1). Population Projection (Revised) Malaysia, 2010 - 2040. Retrieved from Department of Statistics Malaysia: [https://www.dosm.gov.my/v1/index.php?r=column/cthemeByCat&cat=118&bul\\_id=Y3kwU2tSNVFDQWp1YmtZYnhUeVBEdz09&menu\\_id=L0pheU43NWJwRWVSZkiWdzQ4TihUUT09](https://www.dosm.gov.my/v1/index.php?r=column/cthemeByCat&cat=118&bul_id=Y3kwU2tSNVFDQWp1YmtZYnhUeVBEdz09&menu_id=L0pheU43NWJwRWVSZkiWdzQ4TihUUT09)
7. DOSM. (2021). Statistics on Causes of Death Malaysia, 2021. Retrieved from DOSM: <https://www.dosm.gov.my/>
8. Data Gov. (2021, March 24). Number Of Private Hospitals, Nursing And Maternity Homes And Beds By State, Malaysia. Retrieved from Data.gov.my: [https://www.data.gov.my/data/en\\_US/dataset/number-of-private-hospitals-nursing-and-maternity-homes-and-beds-by-state-malaysia/resource/0d13440d-a867-4657-9350-930fdb030a55](https://www.data.gov.my/data/en_US/dataset/number-of-private-hospitals-nursing-and-maternity-homes-and-beds-by-state-malaysia/resource/0d13440d-a867-4657-9350-930fdb030a55)
9. Ministry of Health Malaysia. (2021). Health Facts 2021. WP Putrajaya: Health Informatics Centre.
10. Dawn Chan, D. B. (2021, October 29). Increase in Health Ministry's allocation a boost to medical, public health, says Khairy. Retrieved from The Straits Times: <https://www.nst.com.my/news/nation/2021/10/741099/increase-health-ministrys-allocation-boost-medical-public-health-says>
11. Ministry of Finance. (2022). Federal Government Expenditure. WP Putrajaya: Ministry of Finance.
12. Institute for Public Health. (2020). National Health and Morbidity Survey (NHMS) 2019. Shah Alam: Institute for Public Health. Retrieved from [https://iku.gov.my/images/IKU/Document/REPORT/NHMS2019/Infographic\\_Booklet\\_NHMS\\_2019-English.pdf](https://iku.gov.my/images/IKU/Document/REPORT/NHMS2019/Infographic_Booklet_NHMS_2019-English.pdf)
13. The Edge Markets. (2021, October 29). Budget 2022 Highlights. Retrieved from The Edge Markets: <https://www.theedgemarkets.com/microsite/budget-2022-highlights>
14. Ministry of Health, Malaysia. (2020). Health Facts 2020. Putrajaya: Health Informatics Centre.
15. National Institute of Health. (2020). National Health and Morbidity Survey 2019. Shah Alam: Institute for Public Health.





## CHAPTER 4

# COVID-19 in Malaysia

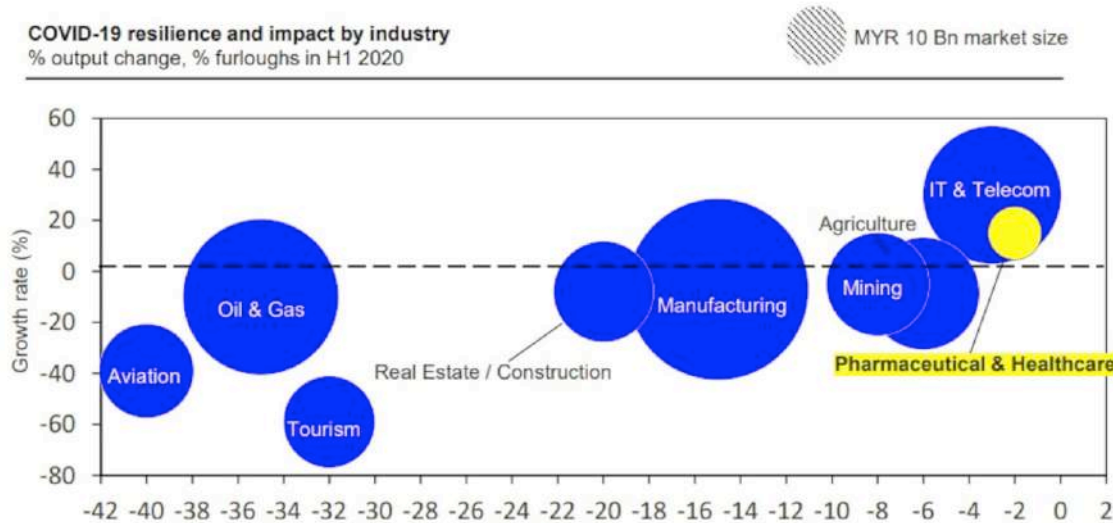
The first confirmed COVID-19 cases were detected in Malaysia on 25 January 2020.<sup>1</sup> As of 8 August 2022, a total of 4,711,415 cases and 36,032 deaths were recorded.<sup>2</sup>

In an effort to control the outbreak, Malaysia implemented a Movement Control Order (MCO) on 18 March 2020, which lasted two months, ending on 12 May 2020. As the result of the MCO, the country experienced economic losses of MYR2.4 billion daily, totalling MYR63 billion as at end-April 2020. Realising the need to balance lives and livelihoods, Malaysia loosened the MCO in May 2020, opening up some sectors of the economy in an effort reduce the financial burden of the pandemic.<sup>1</sup>

The pandemic caused a rise in unemployment rates from 3.3% in 2019 to 4.5% in 2020. The number of unemployed persons increased by 39.9% or 202.8 thousand persons in 2020, to a record high of 711 thousand, from 508.2 thousand the year before.<sup>3</sup>



## Performance of key industries during COVID-19



Source: Department of Statistics Malaysia, Deloitte, press search, team analysis

## PHARMACEUTICAL INDUSTRY

The Malaysia pharmaceutical market was not spared during the pandemic. From 2013 to 2020, CAGR had grown more than 9%, and reached \$2.9 billion in 2020.<sup>4</sup>

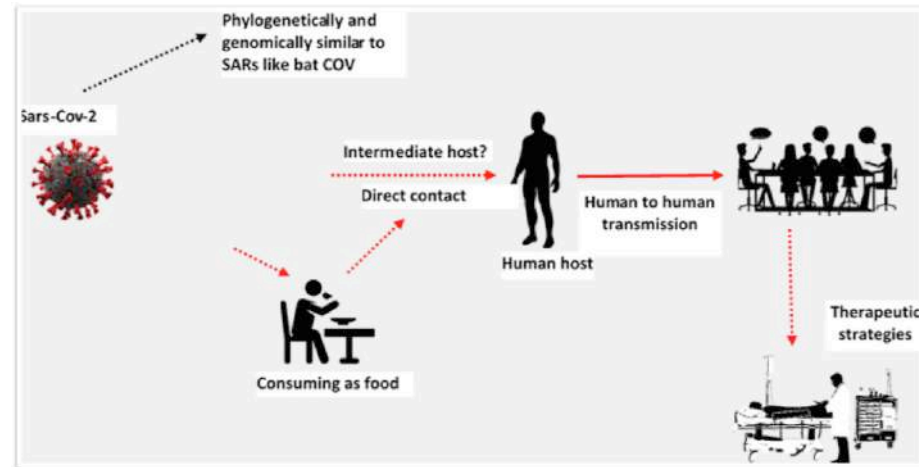
Following the MCO in March 2020, the industry faced negative growth as the reduction of physical contact reduced infections significantly. Elective procedures were also put on hold as hospitals were turned into COVID-19 hospitals or only accepted critical care cases.<sup>5</sup>

When schools and businesses reopened partially in January 2021, the pharmaceutical industry experienced estimated growth of 4%-6%, with a rise in pharmaceutical use and COVID-19-related treatments and vaccines.<sup>6</sup>

Regardless of the economic uncertainties, the pharmaceutical industry continued to provide employment and positive growth to the country's economy, compared to other industries that were badly hit.

	GDP contribution per capita (USD per person)	FDI per capita (USD Mn)	Indirect employment per 1,000 people
Vietnam	57	35	1.69
Philippines	41	9	1.37
Thailand	76	9	1.52
Malaysia	60	14	1.81
Indonesia	21	5	1.53
Singapore	194	524	1.50

## 2020 GDP contribution per capita and indirect employment per 1,000 people



**Figure 2: Transmission of COVID-19**

Source: Front Public Health (<https://doi.org/10.3389/fpubh.2021.560592>)

## COVID-19 VACCINATION IN MALAYSIA

With alarming death rates globally, quick action was critical in arresting the pandemic. Rising to the clarion call by the World Health Organisation, pharmaceutical companies worked on clinical trials at unprecedented speed to produce vaccines that could protect against serious illness, hospitalization and death from COVID-19.

The objective was to stop new variants of the virus from mutating, and protect the population especially the elderly and health-compromised people. Studies from the newly developed vaccines showed that while it did not stop transmission, it reduced the severity of infection and death.

Malaysia embarked on its first mass COVID-19 immunisation programme on 24 February 2021, prioritizing front liners and senior citizens. The country has since introduced two recommended vaccine doses with additional two vaccine boosters. There are now eight vaccines which have received conditional approval in Malaysia with four being used during the Mass COVID-19 Immunisation Programme.<sup>6</sup>

As of 8 August 2022, 84.9% or 27.5 million of the population were vaccinated with at least one dose each with a total of 71.9 million doses administered during the time under review.<sup>7</sup>

## COVID-19 vaccines approved for used in Malaysia as of 8 August 2022

Organization	Vaccine (Approved in Malaysia)	Technology	Vaccine (Administered for mass vaccination program)
Pfizer/BioNTech	Comirnaty	RNA	✓
Oxford/AstraZeneca	Vaxzevria	Non-Replicating Viral Vector	✓
Sinovac	CoronaVac	Inactivated	✓
CanSino	Convidecia	Non-Replicating Viral Vector	✓
Janssen (Johnson&Johnson)	Ad26. COV2.S	Non-Replicating Viral Vector	
Moderna	Spikevax	RNA	
Bharat Biotech	Covaxin	Inactivated	

Source: Malaysia-COVID-19 Vaccine Tracker (<https://covid19.trackvaccines.org/country/malaysia/>)





## COVID-19 IMPACT ON MALAYSIA'S HEALTHCARE SYSTEM

While Malaysia's healthcare system had been functioning well and meeting global standards in some aspects since independence, the tremendous impact of COVID-19 severely strained the system like most places around the world. At the height of the pandemic, hospitals faced exhausted staff, and a lack of beds and medical equipment. Healthcare providers had to make difficult decisions in prioritising patients, facilities, medical equipment and workforce. The mental and physical stress on medical frontliners was at a record high.





**Overburdened hospitals**  
26 public hospitals designated for suspected and confirmed COVID-19 cases<sup>8</sup>



**Overworked frontliners**  
Impacted by physical exhaustion and psychological stress<sup>9</sup>



**Society's ability to adapt to new norm**  
Acceptance of health practices such as physical distancing, mask wearing and use of sanitizer<sup>1</sup>



**Disruptions in health care service**  
Reduction in staff capacity and operation period<sup>10</sup>



**Postponement and reduction of elective surgery in MOH hospital**  
estimated to be as high as 200,000 cases<sup>5</sup>



**Increased utilisation of Pharmacy Value Added Services (VAS)**  
Innovative measures by MOH to decentralize dispensing system and facilitate access of medicine to patients<sup>1</sup>



**Expansion of lab capacity & role, reliance on screening and diagnostic test for COVID-19**  
44 laboratories were expanded<sup>11</sup>



**Telemedicine**  
Virtual consultation on digital platforms for diseases that do not require further laboratory test or surgical procedure<sup>16</sup>



**Acceptance of technology for monitoring purposes**  
Utilization of MySejahtera for notification of close contact with COVID-19<sup>11</sup>



**PPP - Community empowerment and Inter-Agency Approach via Multiple Communication Platforms**  
Fit-for-purpose registration process for vaccines; decantment of non-COVID-19 patients from Public to Private facilities<sup>1</sup>



**Increased progression of mental health disorders among the population**  
Depression topped the list<sup>15</sup>



**Proliferation of e-pharmacy**  
E-pharmacy users:  
1. Urban city dwellers  
2. Suburban elderly  
3. International customers<sup>14</sup>



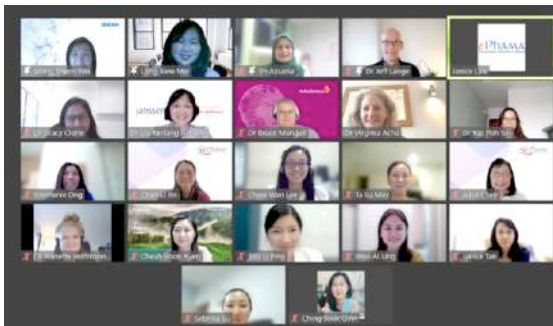
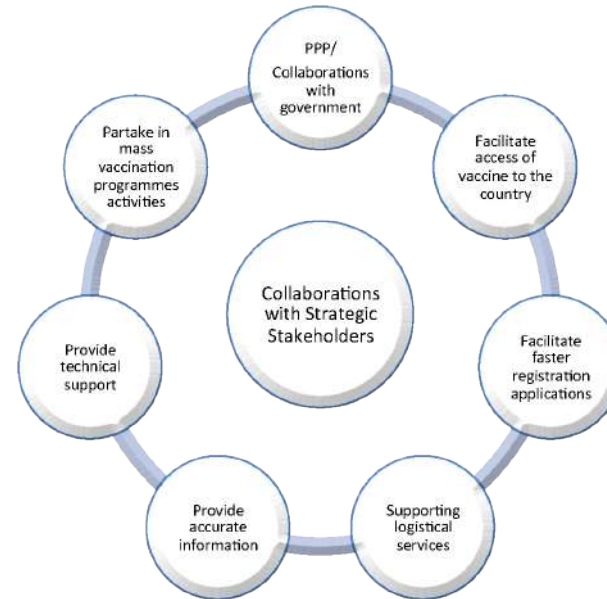
**Collaborations in Covid-19 vaccine clinical trial**  
1. ReiThera: GRAd-COV  
2. Chinese Academy of Medical Sciences Inactivated (Vero Cells)  
3. Pfizer/Biontech (Comirnaty)  
4. CanSino (AD5-nCoV-IH<sup>13</sup>)



**Dedicated provisional funding for COVID-19**  
A total of MYR9 billion in 2021<sup>12</sup>

## COVID-19 Impact on Healthcare System

## Contribution by PhAMA Members



Webinar on Real World Data/Evidence for representatives of National Pharmaceutical Regulatory Authority (NPRA) and regulatory personnel of member companies.  
21 February 2022

## CHALLENGES TO PHARMACEUTICAL COMPANIES

Pharmaceutical companies found themselves caught up in conundrums of varying degrees when the MCO was implemented. While pharmaceuticals were categorised as Essential Services, the MCO brought about various operational challenges related to people, processes and technology.

Guided by years of experience amassed through global operations, PhAMA members successfully managed the challenges and leveraged on opportunities arising from the pandemic. Some of the strategies deployed included the following<sup>17</sup>:

- Physical attendance of employees on rotational basis
- Change to digital engagement internally
- Limited visits to hospital and healthcare facilities unless necessary
- Engagement with healthcare professionals done via digital platforms
- CME events were conducted virtually
- Partnered with other industries to overcome logistic challenges



Meeting with Association of Private Hospitals (APHM) for medicine shortage issues.  
30 June 2022

## ENSURING CONTINUITY OF MEDICINE SUPPLY

Post-pandemic, volatile market conditions and conflict in certain parts of the world disrupted business operations, logistics and medicine supply in unprecedented ways. The country faced a major medicine shortage situation in mid-2022, a few months after the government stopped all forms of MCO and reopened borders.<sup>18</sup>

PhAMA engaged closely with various parties such as the Pharmacy Services Programme, Ministry of Health (MOH) and Association of Private Hospitals Malaysia (APHM) to resolve the issue. All parties involved agreed on the need to co-create short and long-term solutions to enhance the healthcare landscape and add value to care delivery.

## REFERENCES

1. Hashim, J. H., Adman, M. A., Hashim, Z., Mohd Radi, M. F., & Kwan, S. C. (2021). COVID-19 Epidemic in Malaysia: Epidemic Progression, Challenges, and Response. *Frontiers in Public Health*, 9. <https://doi.org/10.3389/fpubh.2021.560592>
2. The Star. (9 August, 2022). Covid-19 Watch: 2,863 new cases bring total to 4,711,415. Retrieved from The Star: <https://www.thestar.com.my/news/nation/2022/08/09/covid-19-watch-2863-new-cases-bring-total-to-4711415>
3. DOSM. (April, 2020). Labour Force Survey Report, Malaysia, 2020. Retrieved from Labour Force Survey Report, Malaysia, 2020: <https://www.dosm.gov.my/v1/index.php?r=column/cthemByCat&cat=126&bulid=dTF2dkIpcUFYUWRrczhqUHVpcDRGQT09&menuid=Tm8zcnRjdVRNWwlpWjRlbnRlaDkiUT09>
4. Data, G. (March, 2022). Malaysia – Healthcare (Pharma and Medical Devices) Market Analysis, Regulatory, Reimbursement and Competitive Landscape. Retrieved from <https://www.globaldata.com/store/report/malaysia-healthcare-regulatory-and-reimbursement-analysis/>
5. Murugiah, S. (8 November, 2021). MoH estimates up to 200,000 backlog surgeries due to pandemic. Retrieved from The Edge Market: <https://www.theedgemarkets.com/article/moh-estimates-200000-backlog-surgeries-due-pandemic>
6. Research, M. (October, 2021). Malaysia Pharmaceutical Industry to Go Global. Retrieved from <https://www.marketresearchmalaysia.com/insight/malaysia-pharmaceutical-industry-to-go-global>
7. Malaysia – COVID19 Vaccine Tracker. (2022, August 22). COVID-19 Vaccine Tracker. Retrieved from: <https://covid19.trackvaccines.org/country/malaysia/>
8. Astro Awani. (2020, January 28). Ini senarai 26 hospital rujukan bagi kendali kes coronavirus. Retrieved from astroawani: <https://www.astroawani.com/berita-malaysia/ini-senarai-26-hospital-rujukan-bagi-kendali-kes-koronavirus-229196>
9. Roslan, N. S., Yusoff, M. S. B., Asrenee, A. R., & Morgan, K. (2021). Burnout Prevalence and Its Associated Factors among Malaysian Healthcare Workers during COVID-19 Pandemic: An Embedded Mixed-Method Study. *Healthcare*, 9(1), 90.
10. Hing, N.Y.L.; Leong, C.T.; Subramaniam Kallianan, R.; Lim, W.Y.; Loo, C.E.; Woon, Y.L. Impacts of the COVID-19 Pandemic on Healthcare Services in Malaysia from the Perspective of Healthcare Providers: A Cross-Sectional Analysis. *Preprints* 2022, 2022030378 doi: 10.20944/preprints202203.0378.v1.
11. Amaran, S., Kamaruzaman, A. Z. M., Mohd Esa, N. Y., & Sulaiman, Z. (2021). Malaysia Healthcare Early Response in Combatting COVID-19 Pandemic in 2020. *Korean Journal of Family Medicine*, 42(6), 425–437.
12. Syafiqah Salim (October, 2021). Additional RM45b needed for Covid-19 Fund. (2021, October 11). The Edge Markets. Retrieved from: <https://www.theedgemarkets.com/article/additional-rm45b-needed-covid19-fund-says-tengku-zafrul>
13. VIPER Group COVID19 Vaccine Tracker Team. (8 August, 2022). 8 Vaccines Approved for Use in Malaysia. Retrieved from Covid19 Vaccine Tracker: <https://covid19.trackvaccines.org/country/malaysia/>
14. Murugiah, S. (25 December, 2021). e-Pharmacy has potential to hit 20%-30% of pharma market share in Malaysia, says Alpro. Retrieved from The Edge Market: <https://www.theedgemarkets.com/article/epharmacy-has-potential-hit-2030-pharma-market-share-malaysia-says-alpro>
15. Wong, L. P., Alias, H., Md Fuzi, A. A., Omar, I. S., Mohamad Nor, A., Tan, M. P., Baranovich, D. L., Saari, C. Z., Hamzah, S. H., Cheong, K. W., Poon, C. H., Ramoo, V., Che, C. C., Myint, K., Zainuddin, S., & Chung, I. (2021). Escalating progression of mental health disorders during the COVID-19 pandemic: Evidence from a nationwide survey. *Plos One*, 16(3), e0248916.
16. Lee, E. (15 June, 2022). Tech: The future of telehealth start-ups in the post-pandemic era. Retrieved from The Edge Market: <https://www.theedgemarkets.com/article/tech-future-telehealth-startups-postpandemic-era>
17. Diedrich, D., Northcote, N., Röder, T., & Sauer-Sidor, K. (2021, March 10). Strategic resilience during the COVID-19 crisis. McKinsey & Company. Retrieved from: <https://www.mckinsey.com/business-functions/strategy-and-corporate-finance/our-insights/strategic-resilience-during-the-covid-19-crisis>
18. PhAMA Fact Book Survey 2022





## CHAPTER 5

# Mapping New Milestones

The changes that gripped the country over the last three years were so pervasive, they were termed the 'New Normal'. As the world eased back into normalcy in 2022, it became apparent that some of this transformation would become permanent fixtures of the healthcare system.

For the first time, the boundary between public and private healthcare service, which was formerly distinct, has softened as a result of the pandemic.

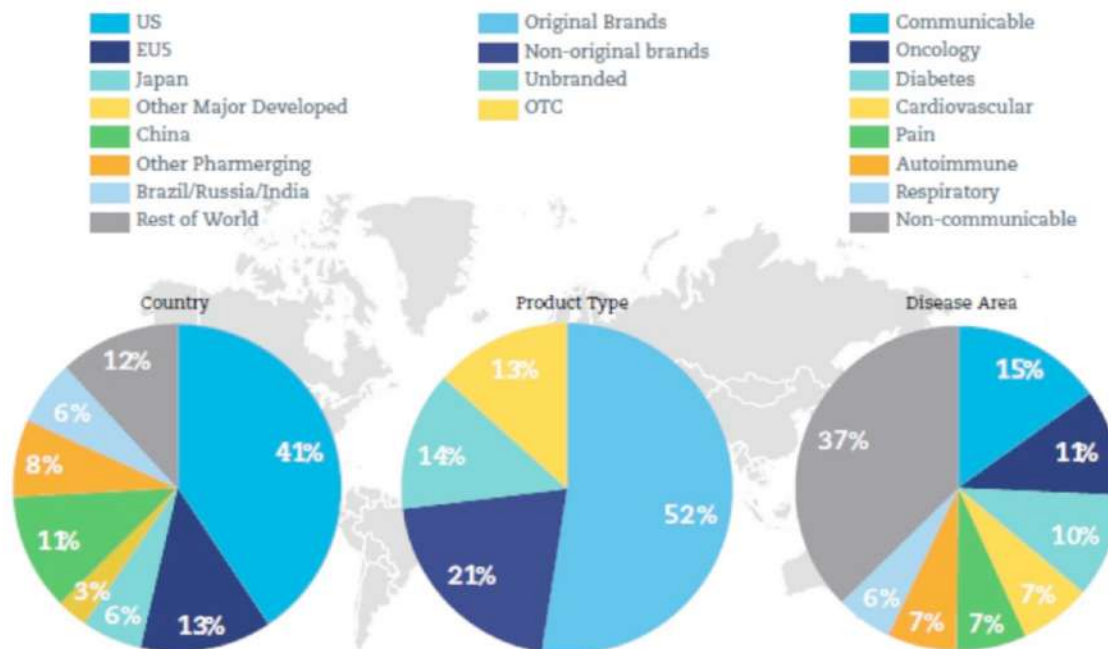
In addition, other areas such as diagnostic tools, health digital apps, health literacy and the supply

chain took on a more prominent role within the eco-system. COVID-19 has actually catalysed many developments that had been slow to catch on.

Apart from that, there were noticeable changes in the burden of disease within the country.

As the country embraces post COVID-19 definition of 'normal', ensuring quality on all fronts whilst creating new pathways must be maintained and incrementally enhanced to address the health needs of the nation.

## Spending by Geography, Segment and Disease Area in 2020



Source: QuintilesIMS Institute (2015) Global Medicines Use in 2020: Outlook and Implications.  
<http://www.imshealth.com/en/thought-leadership/ims-institute/reports/global-medicines-use-in-2020>

## TRANSFER OF SERVICES FROM PUBLIC TO PRIVATE SECTOR

During the pandemic, several public-sector services including screening and elective surgeries, were decanted to the private sector in an effort to lessen the load on public health care. Additionally, a few private hospitals opened up wards to treat COVID-19 patients. The success of this landmark public-private partnership opened new doors for collaboration, suggesting that this approach may form part of the country's contingency plan in the event of future health catastrophes.

## CATALYSING HEALTH DIGITALISATION

Although digital platforms existed pre-COVID, usage was limited to health enthusiasts who tracked their health status and level of physical activity on their wearable gadgets or mobile phones. COVID-19 proved to be the springboard to the mass adoption of technology with MOH's directive on the use of the MySejahtera app at every location.

The previous argument that digitalisation may create greater gaps between the upper- and lower-income groups, particularly those living in rural areas, was proven untrue with the nationwide adoption of MySejahtera. This was made possible with an estimated 87.4% of the Malaysian population enjoying access to the Internet on their smartphones.<sup>1</sup>



In the foreseeable future, health technology will play increasingly greater roles within the healthcare landscape. It is hoped that the government's drive to implement a National 5<sup>th</sup> Generation (5G) platform/framework/policy for widespread coverage and connectivity, and the MOH placing digitalisation as a key focus area in the next 15 years, will enhance efficiency, reduce medical errors and delays in waiting times.

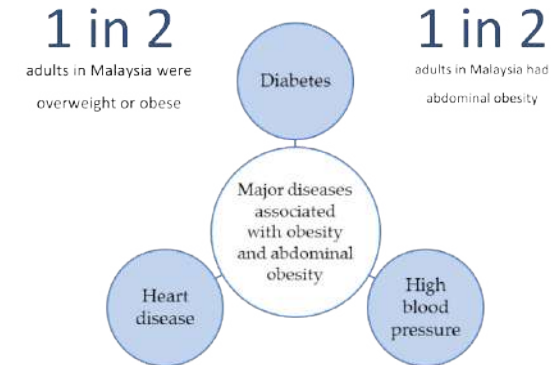
On 2 September 2022, the Ministry of Science, Technology and Innovation and Ministry of Health identified five hospitals as centres for Health Technology Hubs under the National Technology and Innovation Sandbox (NTIS): Putrajaya Hospital, National Cancer Institute, Hospital Tunku Azizah, Bera Hospital and Hospital Besar Rembau, Negeri Sembilan.<sup>2</sup>



Official launch of Health Technology Hub at MRANTI Park, Bukit Jalil.  
2 September 2022.



## Major Diseases Associated with Obesity and Abdominal Obesity



Source: NHMS 2019 ([https://iku.gov.my/images/IKU/Document/REPORT/NHMS2019/Infographic/Booklet\\_NHMS\\_2019-English.pdf](https://iku.gov.my/images/IKU/Document/REPORT/NHMS2019/Infographic/Booklet_NHMS_2019-English.pdf))

## MENTAL HEALTH ISSUES

WHO anticipates depression to be the main contributor to the burden of disease worldwide by 2030. In Malaysia, an estimated 2.3% of the adult population, and 7.9% of children between the ages of 5 and 15 were diagnosed with mental health issues from 2015 to 2019.<sup>1</sup> The reason for mental health issues among children was mainly attributed to poor peer interaction.<sup>3</sup>

For a nation characterised by strong family ties and large extended families, the statistics suggest that interaction among family members and siblings may not make up for reduced or a lack of social and intellectual stimulation provided by social contact with children of their own age.

## OBESITY

According to the National Health and Morbidity Survey 2019 (NHMS 2019), there were sharp increases in overweight, obesity and abdominal obesity trends between 2011 and 2015. 30.4% of the adult Malaysian population is overweight, with 19.7% falling under the obese category. 52% of the adult population has also been categorised as abdominally obese.<sup>3</sup>

This trend is also increasing among children, with 15% of children aged 5 to 17 years categorised as generally overweight; and 14.8% of them obese.<sup>3</sup> The figures are alarming, considering obesity is linked to major diseases i.e. diabetes, high blood pressure and heart diseases. Restrictions in travel and movement during the COVID-19 pandemic also worsened overweight and obesity levels among the population, which may be reflected in the next NHMS.



## NON-COMMUNICABLE DISEASES (NCDs)

NCDs are at alarming levels among Malaysia's population as a result of poor diets, sedentary lifestyles, smoking and alcohol usage. 20% of the population has obesity, 18% has diabetes (the highest among ASEAN nations), 30% has hypertension and 38% has hypercholesterolemia.<sup>3</sup>

Currently, an estimated 70% of all fatalities in the nation are caused by NCDs.<sup>3</sup>

A 2021 study published in the Frontiers in Public Health showed that COVID-19 increases the risk of infection and mortality of those with comorbidities such as non-communicable diseases (NCDs). This was made worse by the movement restrictions, which disrupted the screening, treatment and monitoring of patients with NCDs.<sup>4</sup>



## Non-Communicable Disease Trend in Malaysia

Non-Communicable Disease	2011	2015	2019
<b>Diabetes</b>			
Overall Raised Blood Glucose	11.2	13.4	18.3
Known Diabetes	7.2	8.3	9.4
Raised Blood Glucose Among Those Not Known to Have Diabetes	4.0	5.1	8.9
<b>Hypertension</b>			
Overall Raised Blood Pressure	32.7	30.3	30.0
Known Hypertension	12.8	13.3	15.9
Raised Blood Glucose Among Those Not Known to Have Hypertension	19.8	17.2	14.1
<b>Hypercholesterolaemia</b>			
Overall Raised Blood Cholesterol	35.1	47.7	38.1
Known Hypercholesterolaemia	8.4	9.1	13.5
Raised Blood Glucose Among Those Not Known to Have Hypercholesterolaemia	26.6	38.6	24.6

Source: NHMS, 2019 – NCD

[https://iku.moh.gov.my/images/IKU/Document/REPORT/NHMS2019/Report\\_NHMS2019-NCD\\_v2.pdf](https://iku.moh.gov.my/images/IKU/Document/REPORT/NHMS2019/Report_NHMS2019-NCD_v2.pdf)

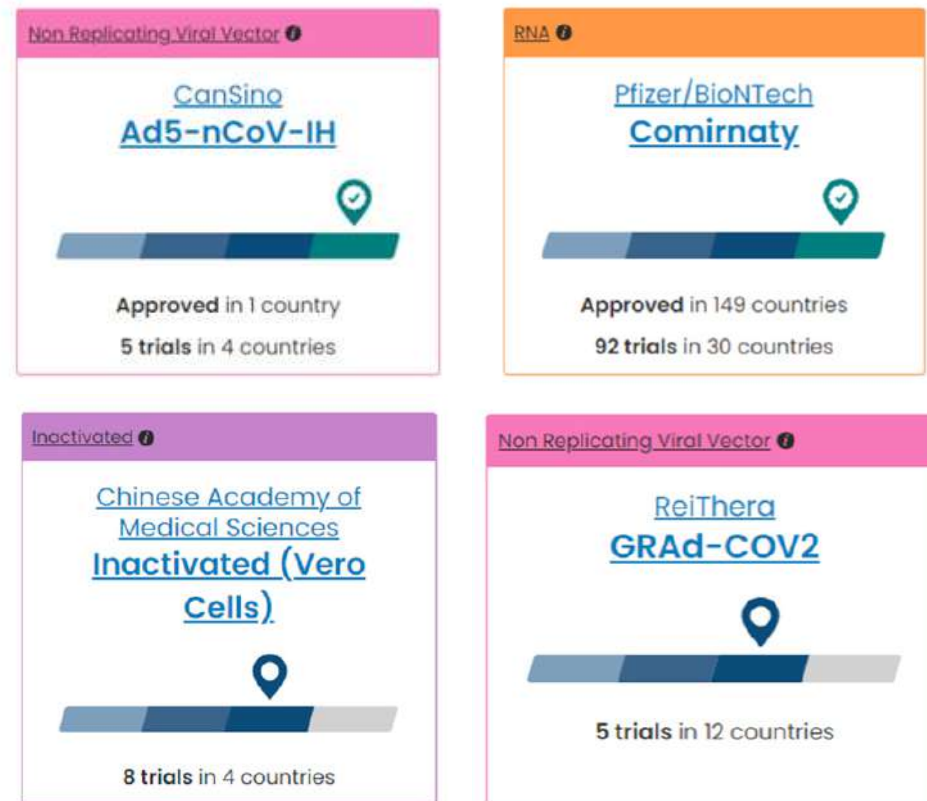


## VACCINE-PREVENTABLE DISEASES

Vaccination is a public health intervention to protect the population against the risk of disease, disability and financial burden associated with medical care. Generally known as the second-best public health intervention after Water, Sanitation and Hygiene (W.A.S.H)<sup>5</sup>, most people take the childhood vaccines in the National Immunization Program for granted. The role of vaccines in public health became evident again in 2021 during the COVID-19 pandemic.

Malaysia has since recognised the need to invest in the upstream efforts of managing preventable diseases by conducting R&D with other countries in the production of vaccines for COVID-19, such as ReiThera:GRAd-COV2 and the Chinese Academy of Medical Sciences: Inactivated (Vero Cells) studies, CanSino AD5-nCoV-IH and Pfizer/BioNTech Comirnaty.<sup>6</sup> The initiative further underscores the country's commitment towards becoming a health treatment solution provider.

## Malaysia Collaboration with International Communities on R&D for COVID-19 Vaccine



Source: Malaysia – COVID-19 Vaccine Tracker  
<https://covid19.trackvaccines.org/country/malaysia/>

## INFECTIOUS DISEASES

Infectious disease is one of the greatest threats to the health of individuals around the world. Seven out of ten global health threats listed by the World Health Organization in 2019 are infectious diseases.<sup>7</sup>

The COVID-19 pandemic literally brought the world to a standstill, proving that infectious diseases are not just health threats. Entire economies, global trade and livelihoods from all levels of society were affected. It was also a reminder that infectious diseases threaten the lives of individuals regardless of age, socio-economic or educational background.<sup>7</sup>

### Medicines in development in 2016



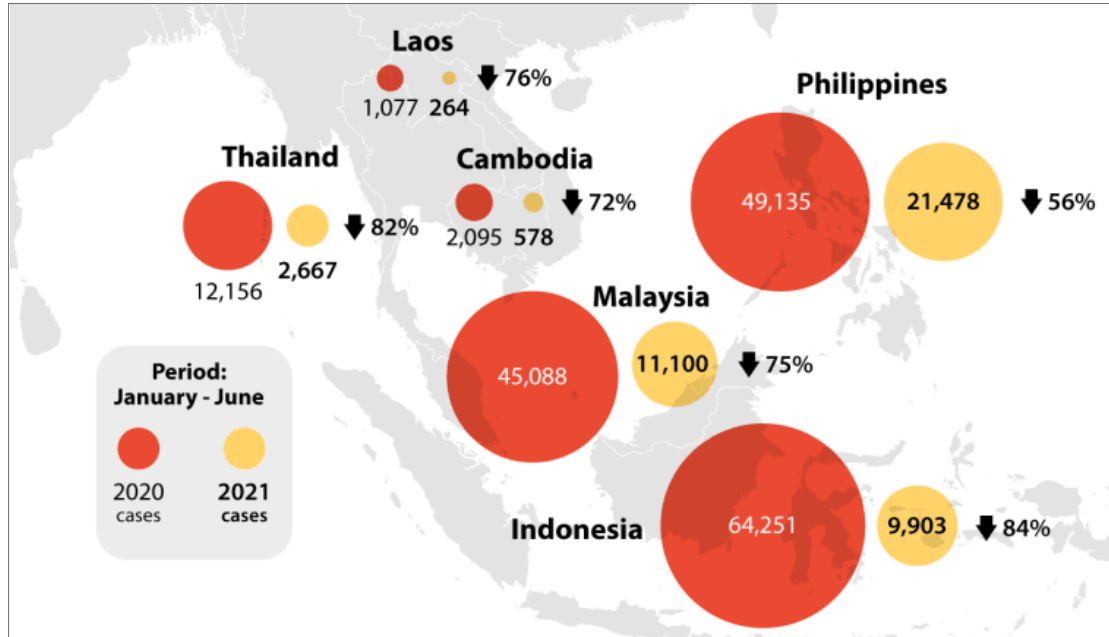
Source: PhRMA(2016) Chart Pack – Biopharmaceuticals in Perspective.  
(<http://phrma.org/sites/files/pdf/chart-pack-biopharmaceuticals-in-perspective-pdf>)

### Medicines in development in 2021 (selected categories)



Source: IFPMA Facts & Figures (<https://www.ifpma.org/wp-content/uploads/2021/04/IFPMA-Facts-And-Figures-2021.pdf>)

## Reported cases of dengue fever in Asia from January to June in 2021 as opposed to 2020



Source: CNA (<https://www.channelnewsasia.com/asia/dengue-fever-plummet-southeast-asia-2021-covid-19-lockdown-1949581>)



### DENGUE FEVER

There have been recurrent infections of dengue fever since it appeared in the country in 1902. The fever which is transmitted via mosquito bites affects a significant portion of Malaysia's population especially those who live in underdeveloped areas with bodies of stagnant water, creating the perfect condition for Aedes mosquito reproduction.

There were reports of only 16,565 dengue cases from January to August 2021, compared to 63,988 cases in 2020. The reduction in cases was similar among other ASEAN countries. The trend suggests underreporting due to movement restrictions.<sup>8</sup> However, the correlation between human movement and incidences of dengue needs to be further explored.

#### REFERENCES

- Digital Influence Lab. (2021). Malaysia Digital Marketing Statistics 2020. Retrieved from Digital Influence Lab: <https://digitalinfluencelab.com/malaysia-digital-marketing-stats/>
- Digital News Asia. (2022, September 2). MOSTI-MOH announce 5 hospitals as Health Technology Hubs under Malaysia's NTIS. Retrieved from Digital News Asia: <https://www.digitalnewsasia.com/digital-economy/mosti-moh-announce-5-hospitals-health-technology-hubs-under-malysias-ntis>
- National Institute of Health. (2019). NCDs-Risk Factors & Other Health Problem. Retrieved from National Health and Morbidity Survey

2019: [https://iku.moh.gov.my/images/IKU/Document/REPORT/NHMS2019/Report\\_NHMS2019-NCD\\_v2.pdf](https://iku.moh.gov.my/images/IKU/Document/REPORT/NHMS2019/Report_NHMS2019-NCD_v2.pdf)

- Chandran A, S. K. (2021, July 6). Non-communicable Disease Surveillance in Malaysia: An Overview of Existing Systems and Priorities Going Forward. Retrieved from Frontiers in Public Health: <https://www.frontiersin.org/articles/10.3389/fpubh.2021.698741/full>
- Andre, F, Booy, R., Bock, H., Clemens, J., Datta, S., John, T., ... Schmittk, H. (2007). Vaccination greatly reduces disease, disability, death and inequity worldwide. National Library of Medicine, 1.
- VIPER GROUP COVID19 VACCINE TRACKER TEAM. (2022,

September 6). Malaysia. Retrieved from Covid19 Vaccine Tracker: <https://covid19.trackvaccines.org/country/malaysia/>

- WHO. (2020, December 9). The top 10 causes of death. Retrieved from WHO: <https://www.who.int/news-room/fact-sheets/detail/the-top-10-causes-of-death>
- Board, J. (2021, June 23). Why the dengue fever caseload has plummeted in parts of Southeast Asia this year. Retrieved from CNA: <https://www.channelnewsasia.com/asia/dengue-fever-plummet-southeast-asia-2021-covid-19-lockdown-1949581>



## CHAPTER 6

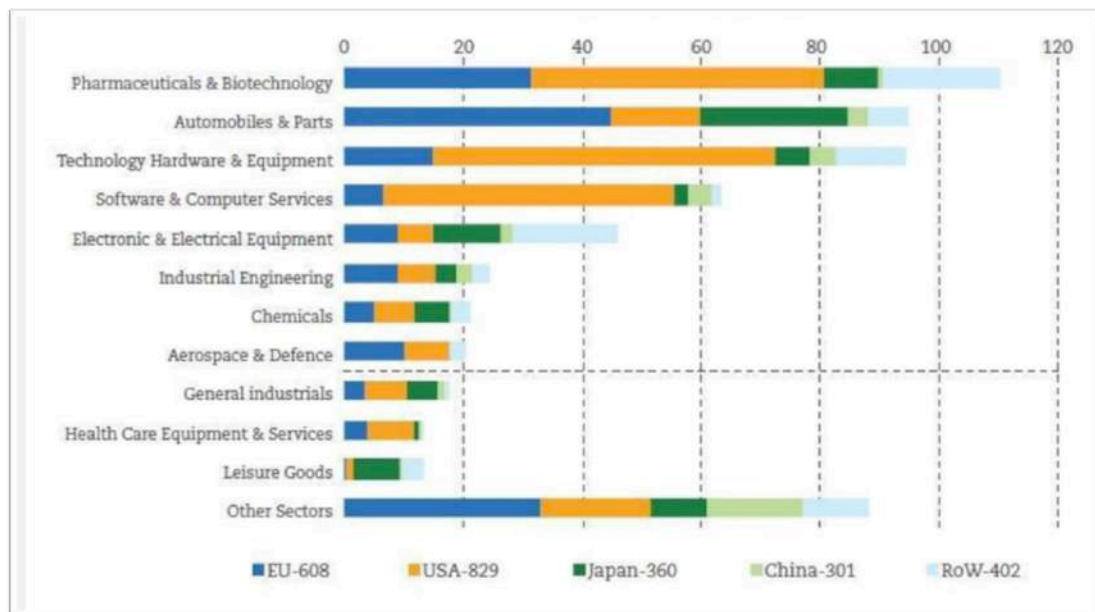
# Future-proofing the Healthcare System

The pandemic has spurred governments worldwide to review their healthcare systems. Many healthcare systems sit within their respective ecosystems, with structures that are peculiar to their respective countries, facilitated by policies that provide frameworks and guidance.

Improving the delivery of healthcare services, whether in the public or private sector, involves a holistic review of the situation as all stakeholder groups are inter-connected. While there is no one-size-fits-all solution, there are a few initiatives or concepts employed in other parts of the world that can be considered for adoption. Ultimately, the system must facilitate sustainable transformation while encouraging and incentivizing R&D efforts that will benefit humankind.



## R&D investments in sector (Euro Bn)



Source: European Commission (2015)- The 2015 EU Industrial R&D Investment Scoreboard; p50  
<http://iri.jrc.ec.europa.eu/scoreboard15/>

## CREATING NEW ECONOMIC SECTORS

Biotech manufacturing has recorded the highest potential and strongest growth opportunities over the past few years. As companies and enterprises consider moving their production facilities out of China, it is crucial and timely that Malaysia capitalises on this opportunity to position itself as the next leading, attractive and preferred investment destination in South East Asia.<sup>1</sup>

As an emerging regional manufacturer, Malaysia has the potential to attract large investments while developing local infrastructure and advanced manufacturing capacity. There is stiff competition, with neighboring countries Singapore and Vietnam also competing to be the investment hub of South East Asia. More fiscal and non-fiscal incentives could be explored for Malaysia to be ahead of its competitors.

## HEALTH PASSPORT

The Ministry of Health has already implemented Electronic Health Reports (EMR) for patients in bigger hospitals. However, there needs to be a single record of a patient's lifetime medical history that supports a HCP's better understanding of the patient's condition from birth. The creation of a Health Passport that is integrated with the National Registry and Electronic Medical Record for Key Diseases will provide real-time data for ease of information and transfer between facilities and other sectors.<sup>2</sup> A robust digital healthcare framework, which includes cybersecurity features using advanced blockchain technology is required to support this integrated data information management system.

## MANDATORY PORTABLE MEDICAL COVERAGE

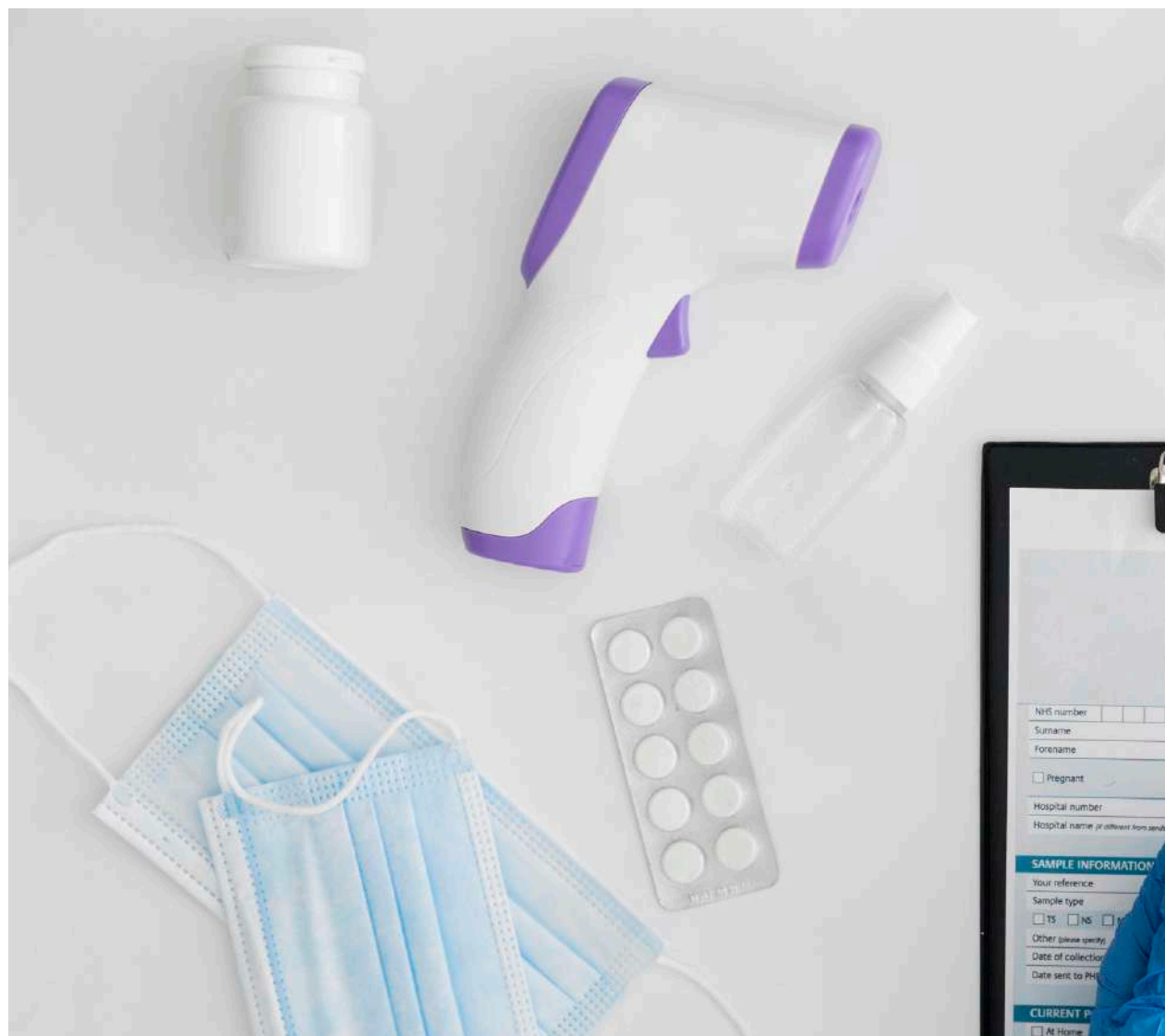
Already available in the market are policies which allow employees the choice of continuing medical coverage by taking over their premium payments once they leave employment of a company or retire. However, such coverage is not readily offered or available from employers. Having the option to continue insurance coverage allows past employees the opportunity to mitigate the risk of financial hardship if they were to contract illnesses which require long-term medical treatment.

## PROMOTING SELF CARE INTERVENTIONS

Self-care has been utilised in other countries to reduce the burden on the healthcare system primarily within the public sector. It includes prevention and early mitigation behaviour that can help arrest an individual's health condition before it deteriorates. Health-seeking behaviour includes obtaining treatment/medication from the pharmacy using OOP as an outpatient. A more innovative health policy that includes coverage for OOP spent for medical treatment, would encourage patients to seek speedier treatment, reduce the risk of exacerbating the medical condition, reduce absenteeism, maintain productivity and reduce reliance on the resources of public healthcare services.<sup>3</sup>

## DIAGNOSTIC KITS: OUT OF THE LAB AND INTO USERS' HANDS

Diagnostic kits such as Rapid-Test Kits (RTK), glucometers, pulse oximeters and more proved to be critical items in screening the health status of individuals at home during the recent pandemic. Diagnostic kits that can also screen for other diseases will be an invaluable part of the healthcare system in the future. Continuous research into disease pathogens may help identify probable markers for certain diseases. Incorporating that knowledge into self-diagnosing test kits for diseases (which are currently done in the lab, e.g., for NCD-related diseases) would enable earlier and easier screening as well as potential earlier presentation.





## CAPITALISING ON DATA

More studies and observation of environments and variables that heighten the prevalence of certain diseases, especially those infectious in nature, should be undertaken. Such data could be built into a long-term healthcare system early warning algorithm to predict possible health trends and threats. This would allow nations to be more proactive instead of reactive and thus enable them to plan and build up their resources better. The use of Big Data, Artificial Intelligence and Machine Learning have the potential of driving predictive, preventive and promotive aspects in the Continuum of Care.



## PRIVACY POLICY

As more personal data gets captured digitally, there is increasing risk of information being misappropriated and used for non-consented purposes. A clear legal framework which governs data collection processes, consent from the data contributor, security, enforcement and rights to view, and scope to utilise the data is required to protect the rights of the people and strengthen their confidence in government digitization efforts. Likewise, an effective and easily-accessed legal recourse for the data contributor should be built into the framework.

## EMERGENCY MEDICAL FUND

The recent pandemic saw a reallocation of national funds for COVID-19 management.<sup>4</sup>

Although it was an unprecedented action to address an unforeseen emergency, such a budgetary reallocation places the population's existing health needs at risk. Establishing a specific Emergency Medical Fund will allow the country to implement timely interventions or measures required against future health crises and ensure that healthcare needs of the population are continuously addressed and effectively managed.

## TRANSPARENCY OF BUDGET ALLOCATION FOR MEDICINES

Due to the categorisation of budget for services and supply, the total allocated budget for medicines in 2021 remains unclear.<sup>6</sup> A clear and transparent categorisation of budget allocation must be in place to review effectiveness of decisions and

rationalise allocation of future resources.

An individual programme allocation, rather than a consolidated budget, will provide better clarity. Data-driven planning is necessary to help manoeuvre a country through future challenges. Other opportunities include the expansion of government health policies through progressive roll-out of health protection schemes that will increase healthcare access and increase sales volume of pharmaceutical products.

In contrast, medicine pricing controls and promotion of generic medications as cost-containment measures will affect investments by industry members in the long-term. National budget allocations need to factor in intangible elements such as socio-economic contributions and foreign direct investments from the industry.



## ALLOCATION OF DRUG BUDGET AS A PERCENTAGE OF TOTAL HEALTH BUDGET

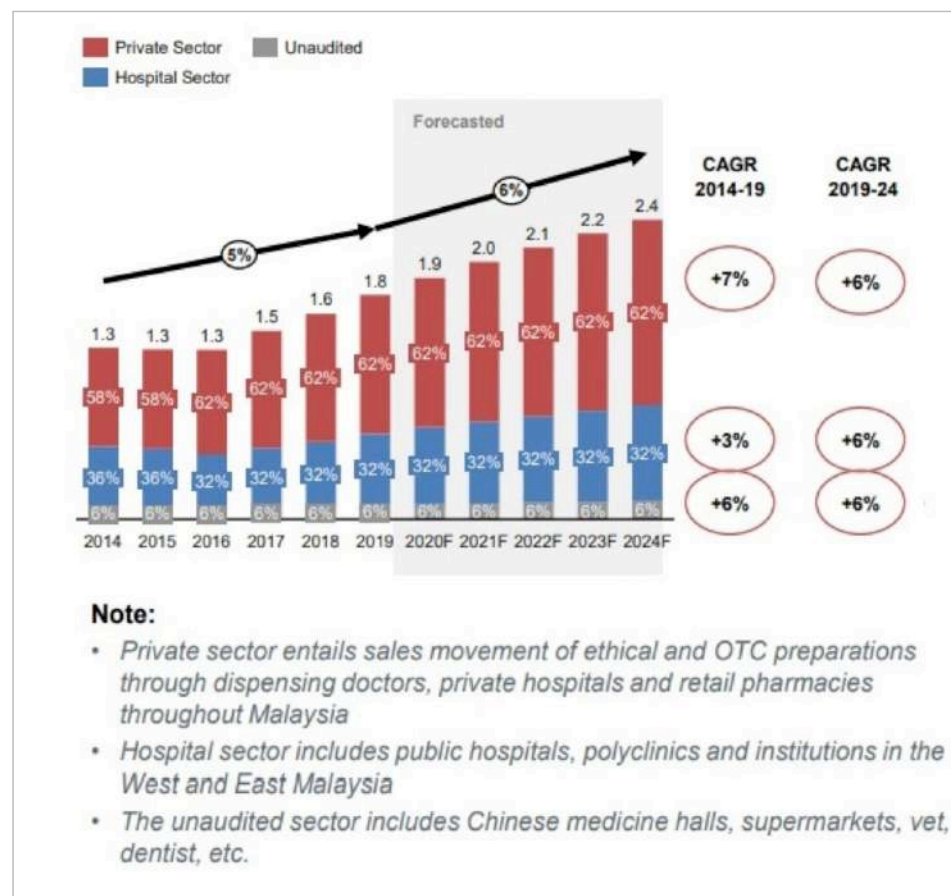
Malaysia's ageing population requires that the healthcare industry support prolonged productive years through making better treatment options more easily accessible to the public<sup>5</sup>. Funding/budgetary constraints limit the access to treatments and options to better health outcome. An increase of the existing drug budget by at least 5% would contribute to the population's access to advanced treatment options.

## HEALTHCARE FINANCING

Malaysia's public spending on health as percentage of GDP (2020) is 2.2%<sup>1</sup>, compared to the average upper middle-income country spending of 3.7% of GDP as advocated by WHO. Malaysia's public spending on health as percentage of government spending (2020) is 9.9%<sup>2</sup> (\*actual spending as reported in 2021), compared to the average upper middle-income country spending of 11.6%.<sup>3</sup>

Data derived from OECD and the Pan American Health Organization (PAHO) in 2014 showed that countries with more disease burden invest less in healthcare.<sup>4</sup> With an ageing population on the horizon and a potential increase in NCD risks among the population, a higher allocation of public health budget to 3.7% of GDP will help the nation cope with the new demographic landscape.

## Malaysia pharmaceutical market sales (USD Bn)



Source: Market Prognosis Report Q3 2020, IQVIA MIDAS and National Audit Data Source



## STRONGER COLLABORATIONS

A public-private partnership (PPP) unites the public and private sectors to carry out initiatives or offer a service that is typically handled by the public sector, as leveraging both resources and strengths result in better value for the nation. One such example is COVID-19 Diplomacy, which enabled the early availability of COVID-19 vaccines to Malaysia. Other possible areas of collaborations to consider are improving health literacy on healthy ageing through lifestyle modification and promoting early screening and treatment, especially for NCDs via more PPP.

Such short and long-term initiatives between the government and the private sector healthcare industry have the potential to address health concerns and at the same time help elevate the socio-economic status of the country.

The Health Minister's clarion call for health reforms and the creation of a Health White Paper that will encapsulate and facilitate enhancements in Malaysia's healthcare system in the next 15 years sets the direction for PPP in the country. Essentially, the healthcare system would require a whole-of-government and whole-of-society approach towards a good Quality of Life for all.

Healthcare Financing Forum jointly organised by PhAMA and Asia Pacific Economic Council (APEC) that explores financing options for healthcare in Malaysia.  
6 September 2022

## REFERENCES

1. Milken Institute. Malaysia is Top Country in Emerging Southeast Asia for Foreign Investment. [www.milkeninstitute.or.article/Malaysia-top-country-southeast-asia-foreign-investment](http://www.milkeninstitute.or.article/Malaysia-top-country-southeast-asia-foreign-investment)
2. Malaysian MoH developing electronic medical record system. [www.opengovasia.com/Malaysian-moh-developing-electronic-medical-record-system](http://www.opengovasia.com/Malaysian-moh-developing-electronic-medical-record-system)
3. Reduce reliance on resources of public healthcare services. Digital technologies in the public health response to COVID-19. [www.nature.com/articles/s41591-020-1011-4](http://www.nature.com/articles/s41591-020-1011-4)
4. National funds for COVID-19 mitigation. Measures to address COVID-19 impact. [www.bnm.gov.my/covid19](http://www.bnm.gov.my/covid19)
5. Budget for medicines in 2021. Health Ministry's 2021 Budget increased by whopping 7.8%. [www.codeblue.galencentre.org/2021/12/11/health-ministrys-2021-budget-increased-7-8-chua-hong-tek](http://www.codeblue.galencentre.org/2021/12/11/health-ministrys-2021-budget-increased-7-8-chua-hong-tek)
6. Malaysia's ageing population. Malaysia's path to becoming ageing nation fast even by global standards. [www.nst.com.my/news/nation/2022/01/760251](http://www.nst.com.my/news/nation/2022/01/760251)
7. MOH. Malaysia National Health Accounts Health Expenditure Report 1997-2019. Retrieved from Health Facts 2020 Reference data for 2019: [https://www.moh.gov.my/moh/resources/Penerbitan/Penerbitan%20Utama/MNHA/MNHA\\_Health\\_Expenditure\\_Report\\_1997-2019\\_02092021.pdf](https://www.moh.gov.my/moh/resources/Penerbitan/Penerbitan%20Utama/MNHA/MNHA_Health_Expenditure_Report_1997-2019_02092021.pdf)
8. Ministry of Health Malaysia. (2021). Health Facts 2021. WP Putrajaya: Health Informatics Centre.
9. Schieber GJ, Poullier JP. Overview of international comparisons of health care expenditures. Health Care Financ Rev. 1989 Dec;Spec No(Suppl):1-7. PMID: 10313431; PMCID: PMC4195146.
10. Pan American Health Organization. (n.d.). Economics of NCDs. Retrieved from PAHO: <https://www.paho.org/en/topics/economics-ncds>

## Glossary

APEC	Asia Pacific Economic Council	OECD	Organisation for Economic Cooperation and Development
APHM	Association of Private Hospitals Malaysia	OOP	Out of Pocket
API	Active Pharmaceutical Ingredients	OTC	Over the Counter
ASEAN	Association of South East Asian Nations	PAHO	Pan American Health Organisation
B40	Bottom 40 (the 40% of the population in the lowest income group)	PhAMA	Pharmaceutical Association of Malaysia
CAGR	Compound Annual Growth Rate	PHEIC	Public Health Emergency of International Concern
CBA	Cost Benefit Analysis/Assessment	PhRMA	Pharmaceutical Research and Manufacturers of America
CME	Continuing Medical Education	PPE	Personal Protective Equipment
CRM	Clinical Research Malaysia	PPP	Public-Private Partnership
DOSM	Department of Statistics Malaysia	PRP	Provisional Registered Pharmacists
EC	European Commission	R&D	Research and Development
EMR	Electronic Medical Reports	RNA	Ribonucleic acid
EPF	Employees Provident Fund	RTK	Rapid Test Kit
EU	European Union	SOCISO	Social Security Organisation
FDI	Foreign Direct Investment	T20	Top 20 (the 20% of the population with the highest income)
GDP	Gross Domestic Product	TEH	Total Expenditure in Healthcare
HCP	Health Care Practitioner	UHC	Universal Health Coverage
ISR	Industry Sponsored Research	WHO	World Health Organisation
M3C	Malaysia Cancer Care Coalition	YoY	Year on Year
M40	Middle 40 (the 40% of the population in the middle income group)		
MCO	Movement Control Order		
MMA	Malaysia Medical Association		
MNHA	Malaysia National Health Accounts		
MoH	Ministry of Health		
MOPI	Malaysian Organisation of Pharmaceutical Industries		
MOSTI	Ministry of Science, Technology and Innovation		
MPC	Medicine Price Control		
NC	Non-Communicable Diseases		
NHMS	National Health & Morbidity Survey		
NPRA	National Pharmaceutical Regulatory Authority		
NTIS	National Technology and Innovation Sandbox		



## PhAMA Members



A. Menarini Singapore Pte. Ltd.



Abbott Laboratories (M) Sdn Bhd (Pharmaceuticals)



AbbVie Sdn Bhd



Amgen Biopharmaceuticals Malaysia Sdn Bhd



Aspen Medical Products Malaysia Sdn Bhd



Astellas Pharma Malaysia Sdn Bhd



AstraZeneca Sdn Bhd



Bayer Co. (Malaysia) Sdn Bhd



Boehringer Ingelheim (Malaysia) Sdn Bhd



CaringUp Malaysia Sdn Bhd



DCH Auriga (Malaysia) Sdn Bhd



Digital A Plus Healthcare Sdn Bhd



DKSH Malaysia Sdn Bhd



Eisai (Malaysia) Sdn Bhd



Eli Lilly (M) Sdn Bhd



EP Plus Group Sdn Bhd



Ferring Sdn Bhd



GlaxoSmithKline Consumer Healthcare Sdn Bhd



GlaxoSmithKline Pharmaceutical Sdn Bhd



iNova Pharmaceuticals (Singapore) Pte Ltd. Malaysia Branch



IQVIA Solutions Malaysia Sdn Bhd



Johnson & Johnson Sdn Bhd



Kyowa Kirin Malaysia Sdn Bhd



LNS Integration Sdn Bhd



Lundbeck Malaysia Sdn Bhd



Merck Sdn Bhd



Merck Sharp & Dohme (Malaysia) Sdn Bhd



Mitsubishi Tanabe Pharma Malaysia Sdn Bhd



Mundipharma Pharmaceuticals Sdn Bhd



Novartis Corporation (Malaysia) Sdn Bhd



Novo Nordisk Pharma (M) Sdn Bhd



Pfizer (Malaysia) Sdn Bhd



Primabumi Sdn Bhd



Reckitt Benckiser (Health) Malaysia Sdn Bhd



Roche (Malaysia) Sdn Bhd



Sanofi Aventis (Malaysia) Sdn Bhd



Servier (Malaysia) Sdn Bhd



Sun Pharmaceutical (M) Sdn Bhd



Takeda Malaysia Sdn Bhd



Wellesta Healthcare Sdn Bhd



Zuellig Pharma Sdn Bhd

# LOGO RATIONALE

**The PhAMA Logo** comprises two curves and a plus symbol. The overall appearance of the corporate identity is nimble to emphasize the agility in the movement of the association.

**The Plus Symbol** represents healthcare and quality of life.



**The Curves** (forming the shape of a tablet) symbolise dynamism and cooperation among key stakeholders for better health and quality of life. It bridges the pharmaceutical industry with both nation and consumers.

The different sized logotype showcase innovation in skills, knowledge, research, resources and development in PhAMA's mission to provide Innovative Medicines for Malaysia. The typeface reflects ethical promotion of medicines in compliance with local laws and marketing practices.

**Blue and Red** reflect reliability and sturdy years of experience in the Malaysia's pharmaceutical industry. The vibrant combination depicts consistency and commitment to quality.

**Pharmaceutical Association of Malaysia  
(PhAMA)**

C-18-02, 3 Two Square (Dataran 3 2)  
No. 2, Jalan 19/1, 46300 Petaling Jaya  
Selangor Darul Ehsan

+603 7960 8322/23 

+603 7960 8324 

phama@phama.org.my 

**[www.phama.org.my](http://www.phama.org.my)**

