



chapter 16
Healthcare

Chapter 16: Creating Wealth Through Excellence in Healthcare

“Healthcare is now at the cross-roads. While maintaining focus towards providing for the health and well-being of Malaysians, we also realised the unlimited economic potential of this sector.

We are aware that healthcare sector is also a wealth creator. Beyond just the organic growth in services, pharmaceuticals and medical devices, we will explore new horizons in services, clinical research, health travel, and generics pharmaceuticals manufacturing.

In this journey, we aspire to contribute USD10.4b to GNI by 2020. To achieve this, I seek the support of all healthcare providers, corporations and organizations.”

Y.B. Dato’ Sri Liow Tiong Lai
Minister of Health

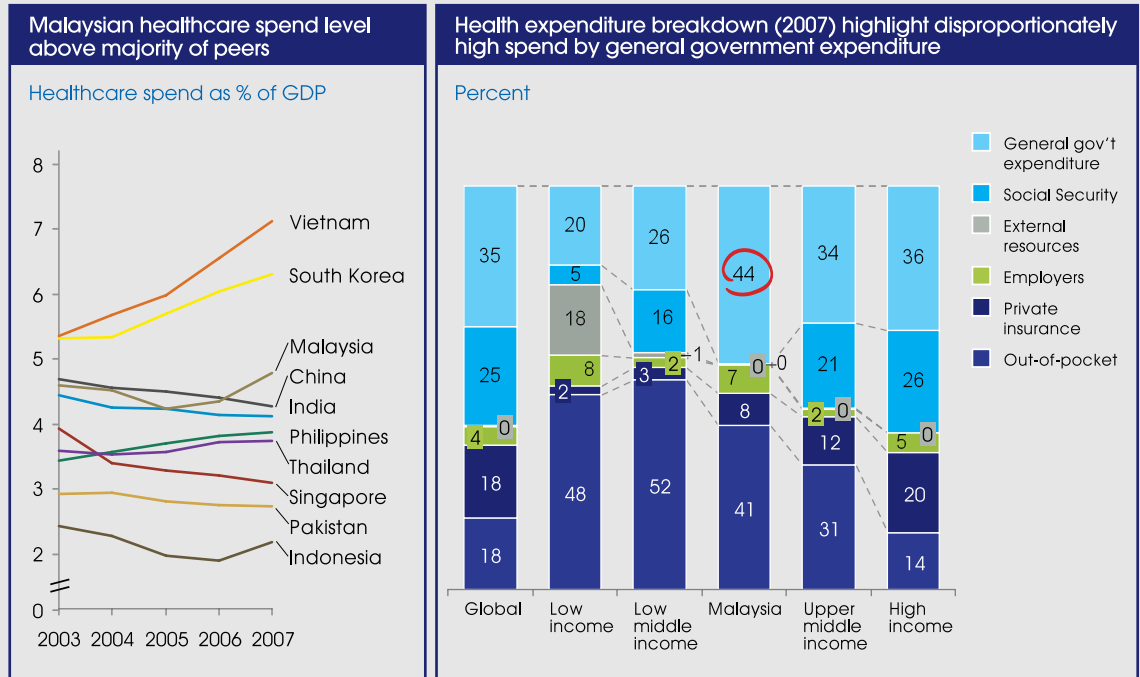
The global healthcare industry is among the most dynamic and rapidly growing industries in the world economy. Spurred by demographic shifts such as extended longevity and a rise in lifestyle diseases such as hypertension and cardiovascular ailments, cancer and diabetes, national healthcare costs are increasing dramatically. At the same time the health industry has become a powerful engine of economic growth.

Malaysia’s record of healthcare expenditures is no exception to the rule. At 4.8 percent of GDP, our spending on healthcare is above our regional peers and public spending is a disproportionate contributor to healthcare costs. The burden on public spending is even more pronounced when compared to countries in the upper-middle to high-income brackets (*Exhibit 16-1*).

While numerous efforts are already underway to stem the expenditure trajectory, there is no coordinated effort to grow healthcare revenues. The Healthcare NKEA intends to address this asymmetry of focus and identify private sector opportunities to reframe health as an economic commodity as well as a social right.

Exhibit 16-1

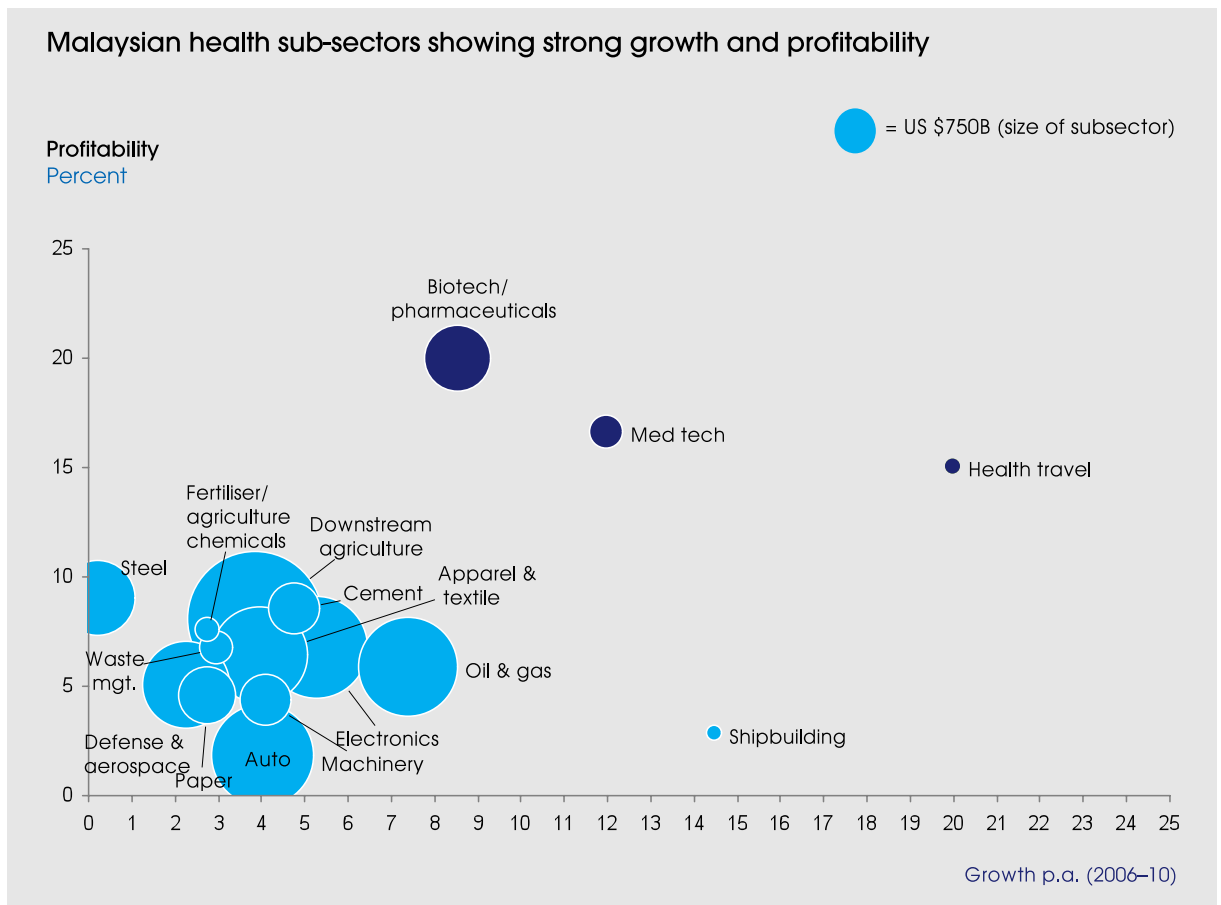
Healthcare spending in Malaysia higher than majority of peers, and much of it coming from the government



DEFINITION OF THE HEALTHCARE NKEA

While it is easy to develop a singular focus on healthcare as a cost and view managing these costs as the critical agenda, it is time for Malaysia to reframe the discussion. The healthcare industry can be a robust economic engine and one that indirectly creates significant social impact. Higher value jobs can be created, infrastructure can be upgraded and both specialist skill-sets and technology can be harnessed to improve the quality of care for patients. When examined from a profitability and growth lens, the Malaysian health sector opportunity looks extremely attractive despite its modest beginnings. As seen in Exhibit 16-2, all three key sub-sectors of the larger healthcare ecosystem, pharmaceuticals and biotechnology, medical technology (med tech) and health travel, have delivered stronger performances relative to the larger, more traditional economic sectors such as automotive, agriculture and electronics.

Exhibit 16-2



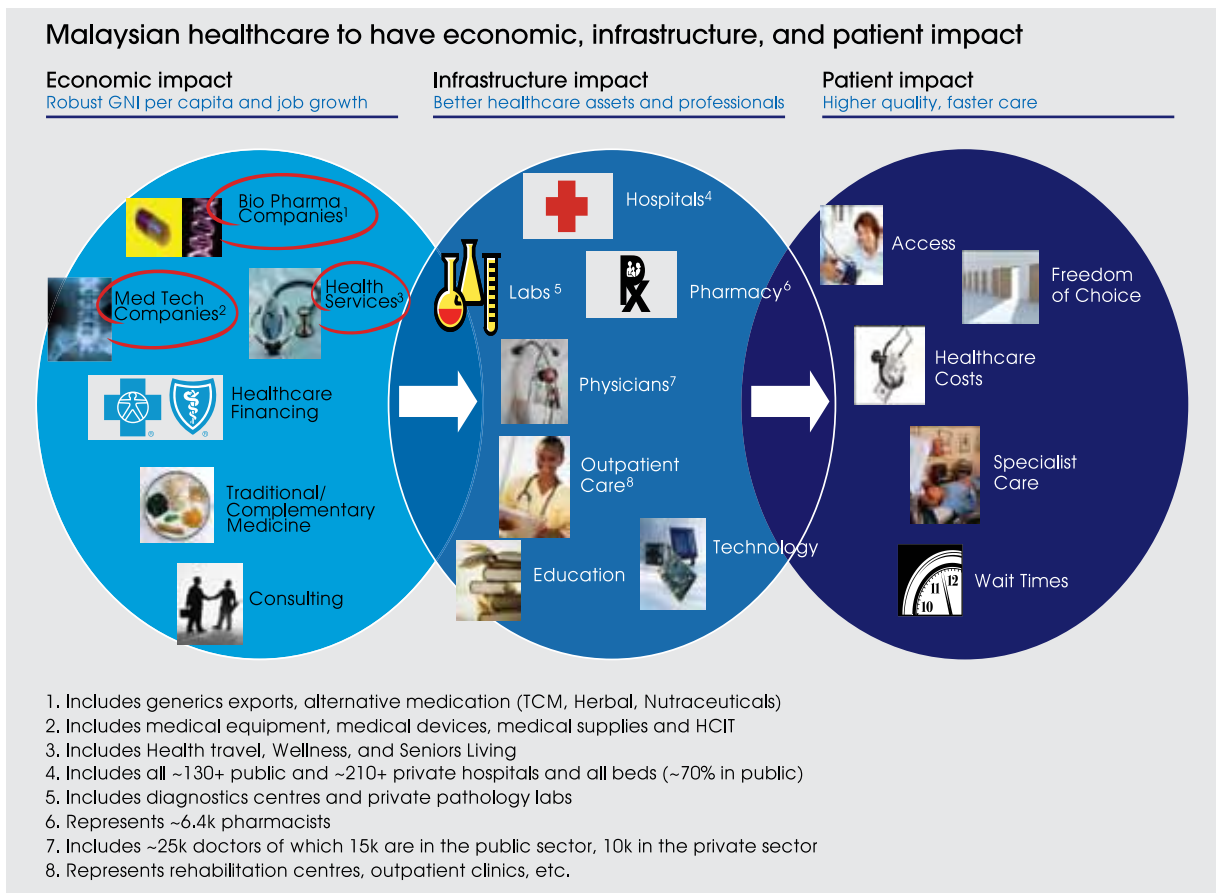
SOURCE: WHO; Ministry of Health; Department of statistics 2000-2007, Yearbook of statistics 2008; Malaysia Tourism Promotion Board; Epsicom; Matrade data; EIU; Lab analysis

The growth of the healthcare industry in Malaysia has been organic in nature and is primarily driven by domestic consumption of healthcare products and services. Moving forward, it is now time to reframe and position healthcare as an engine of economic growth.

To ensure the right balance of breadth and depth of coverage, the Healthcare NKEA is focused on the larger sub-sectors within the healthcare ecosystem. These include bio-pharmaceuticals, med tech, private healthcare financing and health services. Wellness services as related to traditional and complementary medicine (T&CM) are considered out of scope for the Healthcare NKEA given the infancy of the industry, fragmentation of the competitive landscape and the fact that until the enactment of the T&CM Bill, the boundaries of T&CM are still not well defined.

As seen in *Exhibit 16-3* our expectation is that focus on the largest economic engines will directly impact the healthcare infrastructure and indirectly result in better quality care for the *rakyat*. For example, the increase in hospital beds, doctors and nurses as a result of the growth in the healthcare industry should reduce wait times for patients, shorten the turnaround time on diagnostic lab results and improve the quality of patient outcomes through access to more specialist care centres.

Exhibit 16-3

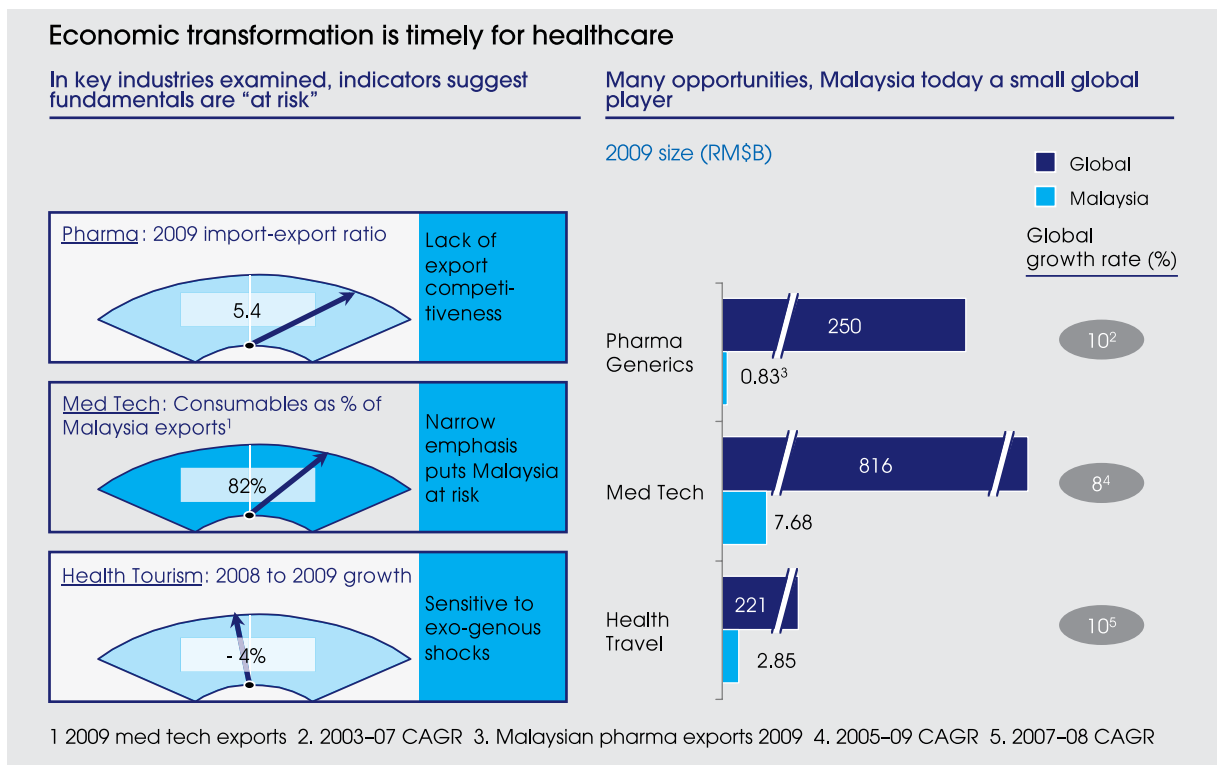


MARKET ASSESSMENT

Malaysia is in a unique position today. We can either aggressively participate in the global shift towards Asia by becoming a major player in the region’s healthcare arena, or we can become marginalised as less developed countries such as Indonesia and less expensive countries such as Vietnam play larger roles on the ASEAN stage. Indonesia and Vietnam are already positioning themselves for healthcare growth. In Indonesia, local pharmaceutical companies are capturing an increasing share of the domestic market. In Vietnam extensive commitments and strong government support are going towards growing the med tech sub-sector through developing infrastructure and building a skilled, low-cost labour force.

Malaysia must act now and determine how best to use its infrastructure capabilities, domestic consumption base and diverse population to create an economic growth agenda for healthcare. Recent indicators show that despite fundamentals being at risk, the Malaysian healthcare industry has a solid starting point to undertake an economic transformation (*Exhibit 16-4*).

Exhibit 16-4



SOURCE: WHO, MOH, Department of Statistics, Matrade, EIU, IMS, Epsicom

From *Exhibit 16-4*, we can see that there is a real opportunity to improve our position on each of the fundamental sub-sectors. Although RM422 billion of prescription and pharmaceutical drug patents are about to expire in the next 10 years, Malaysia remains a net importer of generic products. Despite the rapid growth in med tech products, Malaysia remains focused on one category of products, medical consumables, which are primarily rubber-based products. The emphasis on lower-value products has resulted in Malaysia not fully developing the more profitable med tech sub-sectors such as medical devices, diagnostic equipment and healthcare information technology.

Finally, the health travel industry in Malaysia remains small and fragile and in 2009 declined by four percent. This can be primarily attributed to the lack of clear positioning relative to peers and an insufficient network of partners for source patients. In contrast neighbouring countries such as Singapore and Thailand continued to grow during the same period and leveraged price, quality of care and an overall health travel experience to retain volume. It is critical for Malaysia to bounce back in this attractive sector.

With 1.9 beds per thousand and 0.8 doctors per thousand as of 2008, Malaysia has a solid foundation to build on. In addition the high incidence of lifestyle diseases and experience with quality assurance permits Malaysia to be a credible R&D and clinical trial destination for the pharmaceutical and med tech industries.

Our goal is to migrate from primarily a lower-value product strategy to a more comprehensive product, services and asset strategy that better leverages our competencies.

TARGETS AND ASPIRATIONS

To achieve our target incremental GNI growth of RM35.3 billion between 2010 and 2020 aggressive targets will be set for each sub-sector.

For pharmaceuticals, we are targeting a 22 percent GNI growth rate that will deliver RM16.6 billion GNI by 2020. This is driven by higher exports of generic pharmaceuticals and enhanced generics and increased clinical research in Malaysia. The impetus for this aggressive growth is two-fold. First, we believe that significant extra capacity in the domestic pharmaceuticals industry can be re-focused on higher value manufacturing. Second, we believe that through investment in research and development, original research and product innovation, we can create a sustainable and thriving pharmaceutical industry.

In the services sector, we are targeting a GNI growth of 10 percent which will result in a GNI of RM27.8 billion by 2020. Driving this growth is an increased emphasis on export-focused services such as health travel, specialist care centres and seniors living.

Finally our planned growth in med tech remains a moderate eight percent. We believe that in the next 10 years growth will continue to come from the export of consumables to new markets, but towards the end of the next decade a new higher margin industry will emerge. Malaysia will be able to manufacture in-vitro diagnostic (IVD) test kits, orthopaedic implants and dental devices that leverage our ongoing research efforts and manufacturing advantage.

The next 10 years could be transformative for the healthcare industry. To succeed we must not only move faster than our regional peers, for example Indonesia, Thailand and Vietnam, but also migrate beyond a product-centric strategy to one which is centred on offering services to patients.

To ensure success we must work closely with a number of the other NKEAs, such as: palm oil, tourism, financial services and education. In the near future, a Health Industry Development Corporation (HIDC) will need to be established to drive the economic agenda for Malaysian healthcare.

Six EPPs, Two Business Opportunities and Baseline Growth to Deliver RM35.3 billion of GNI Impact

By 2020 we aspire to generate RM35.3 billion incremental GNI from the entry point projects (EPP) and business opportunities on top of baseline growth, welcome one million health travellers and conduct 1,000 clinical trials, all of which will result in approximately 181,000 new jobs. This includes about RM400 million of GNI from the multiplier effect created by EPPs from other sectors. The largest source of the multiplier effect on the Healthcare NKEA is the Tourism NKEA, which is estimated to contribute to 38 percent of the multiplier effect. This includes, for example, benefits to the Healthcare NKEA from a growth in medical tourism.

These projects represent an aggressive export campaign, an upgraded services platform and a commitment to better healthcare for Malaysians. *Exhibit 16-5* details the GNI contribution across these projects. The six EPPs are categorised into three themes: quick wins, strategic opportunities and longer term bets.

Quick wins

These are initiatives that can be implemented immediately in 2010 as they are already being debated within the public sector and require low to moderate levels of private sector support to enable successful execution. The two EPPs falling within this theme are:

- **EPP 1:** Mandating private health insurance for foreign workers
- **EPP 2:** Creating a supportive ecosystem to grow clinical research

Strategic opportunities

This theme includes medium-term initiatives that require significant change to the status quo and strong individual champions to rally the private sector into action. The two EPPs falling within this theme are:

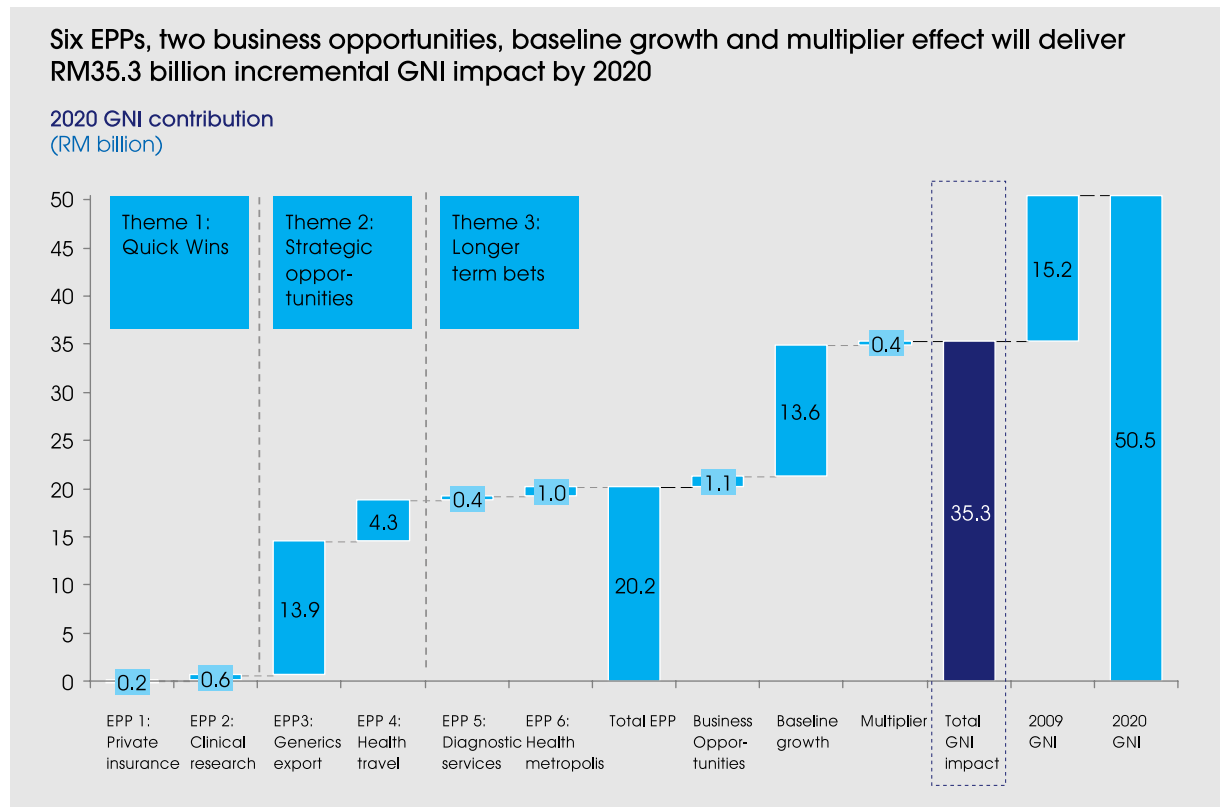
- **EPP 3:** Pursuing generics export opportunities
- **EPP 4:** Reinvigorating health travel through better customer experience, proactive alliances and niche marketing

Longer term bets

This theme includes initiatives that require significant support from both the public and private sector and are critical to placing Malaysia on the global innovation map. The two EPPs falling within this theme are:

- **EPP 5:** Creating a diagnostic services nexus to achieve scale in telemedicine for eventual international outsourcing
- **EPP 6:** Developing a health metropolis: A world-class campus for healthcare and bioscience

Exhibit 16-5



QUICK WINS

The two quick win projects tackle two issues that share nothing more than an ease of implementation due to a general bias towards action and few private sector stakeholders. The first is the insurance of foreign workers to protect worker health, secure healthcare payments and bolster Malaysia's image. The second is a structural change in how clinical research is managed in Malaysia to reverse the decline in clinical research trials.

EPP 1: Mandating Private Health Insurance for Foreign Workers

Rationale

There are over three million foreign workers in Malaysia, 1.8 million of whom are registered and of which, only 75 percent are covered by workman's compensation schemes. Current compensation payouts for occupational injury and death within the Malaysian schemes are significantly below those of our neighbours including Thailand and Singapore. This leaves us with two problems. First, given our current compensation schemes, Malaysia's image as an employer of foreign labour is at a disadvantage compared to other nations. Second, we face an ever-increasing load of unpaid hospital bills that increases the burden of healthcare costs on the *rakyat*. To illustrate, foreign workers left RM64 million of unpaid healthcare bills in the past five years, 2005 to 2009, 19 percent of which were for care at public hospitals.

Action

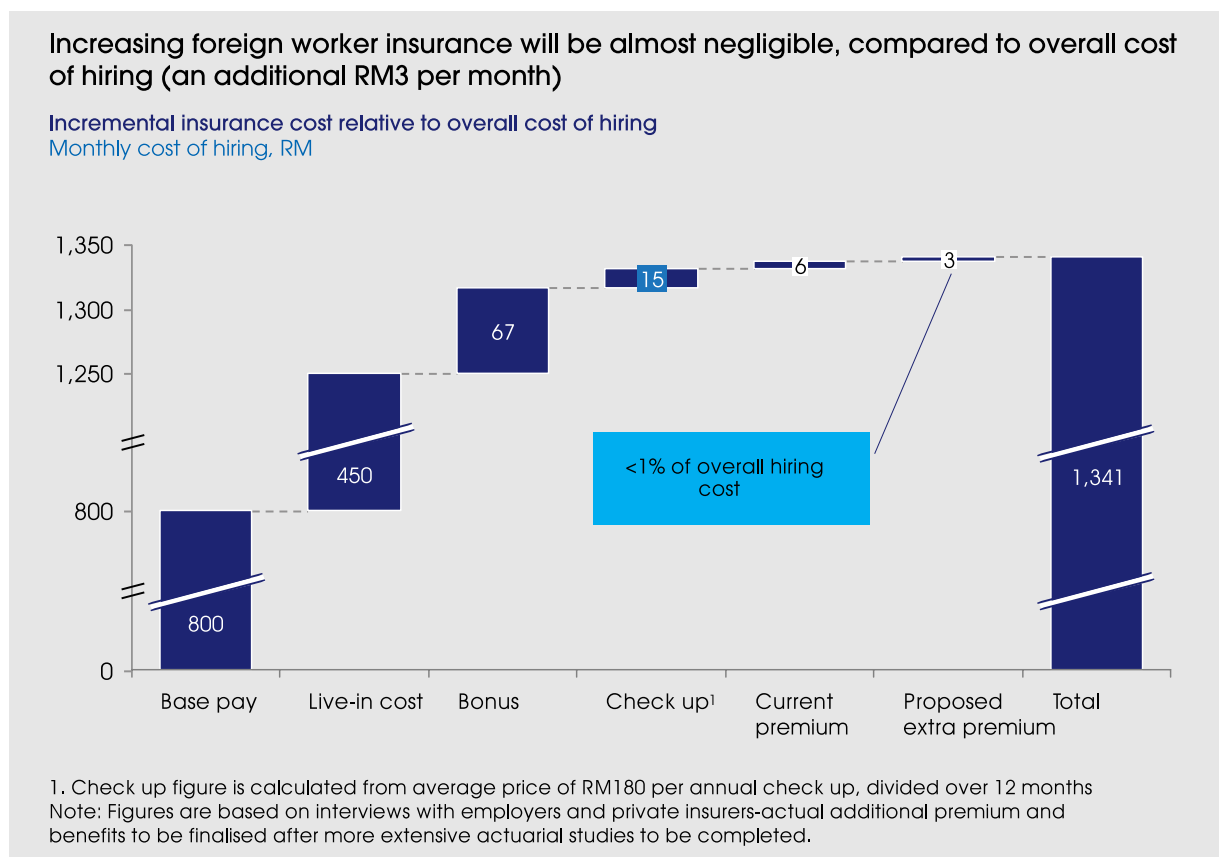
To alleviate this problem, we will amend workmen’s compensation regulation and impose mandatory insurance. All foreign workers will have to be covered under two insurance schemes:

- Workmen’s compensation insurance to cover occupational-related diseases and accidents will be paid by the employer; and
- Medical insurance for non-occupational diseases and injuries will be paid by the foreign worker.

This initiative requires the alignment of the various stakeholders: Ministry of Human Resources (MOHR), the Ministry of Health (MOH), Ministry of Home Affairs (MOHA) and Bank Negara Malaysia (BNM). In addition to the above, support is also required from the General Insurance Association of Malaysia (PIAM), industry and employer associations and the governments that are exporting foreign workers, for example Bangladesh, Cambodia, China, Indonesia, Myanmar and Philippines.

We believe that private health insurance for foreign workers will not be significantly more expensive for employers to provide as it translates to just an additional RM3 per month per foreign worker (*Exhibit 16-6*).

Exhibit 16-6



SOURCE: Interview with employers and private insurers

Given that the initiative will only increase cost marginally and that there exists numerous benefits for workers, employers and the public hospital system we believe there will not be significant implementation risk or investment required.

The primary owner for this project and each of its steps will be MOH. For the Private Insurance EPP to be implemented successfully four critical steps have to be taken:

- Amendment of workmen's compensation regulation for all foreign workers. This will be tabled in Parliament by 2011;
- Agreement by leading private insurance companies to insure all foreigners who currently do not have insurance per the FOMEMA database, which will be completed by 2011;
- Alignment with MOHR, MOHA and employer groups; and
- Commitment by the Immigration authority to check for insurance while approving work permits, which will be achieved by end 2011.

Funding

In order to be able to process insurance for foreign workers, we need to make an investment into system integration and provide computer terminals in government hospitals. A one-off cost of RM5 million is required, which will be funded by the Government.

Enablers

In addition to the policy and regulatory reform detailed above, MOH will need to further facilitate the process by serving as a third-party administrator to ensure that payments for hospital services used by foreign workers are billed to their respective health insurance companies. MOHA will look into enforcing compulsory insurance as part of work permit applications for foreign workers, with all regulatory amendments to be tabled by end of 2011.

Impact

This EPP will deliver RM171 million in GNI by 2020.

EPP 2: Creating a Supportive Ecosystem to Grow Clinical Research

Rationale

The global clinical research industry has grown at 15 percent annually to reach more than RM64 billion in 2009. Growth in Asia has outpaced the global market, with China, India and Southeast Asia collectively delivering approximately 30 percent year-on-year growth in recent years. Malaysia's performance has lagged behind its Asian peers; in 2009 only 100 trials were conducted and the annual growth rate in clinical trials was only seven to eight percent between 2003 and 2009.

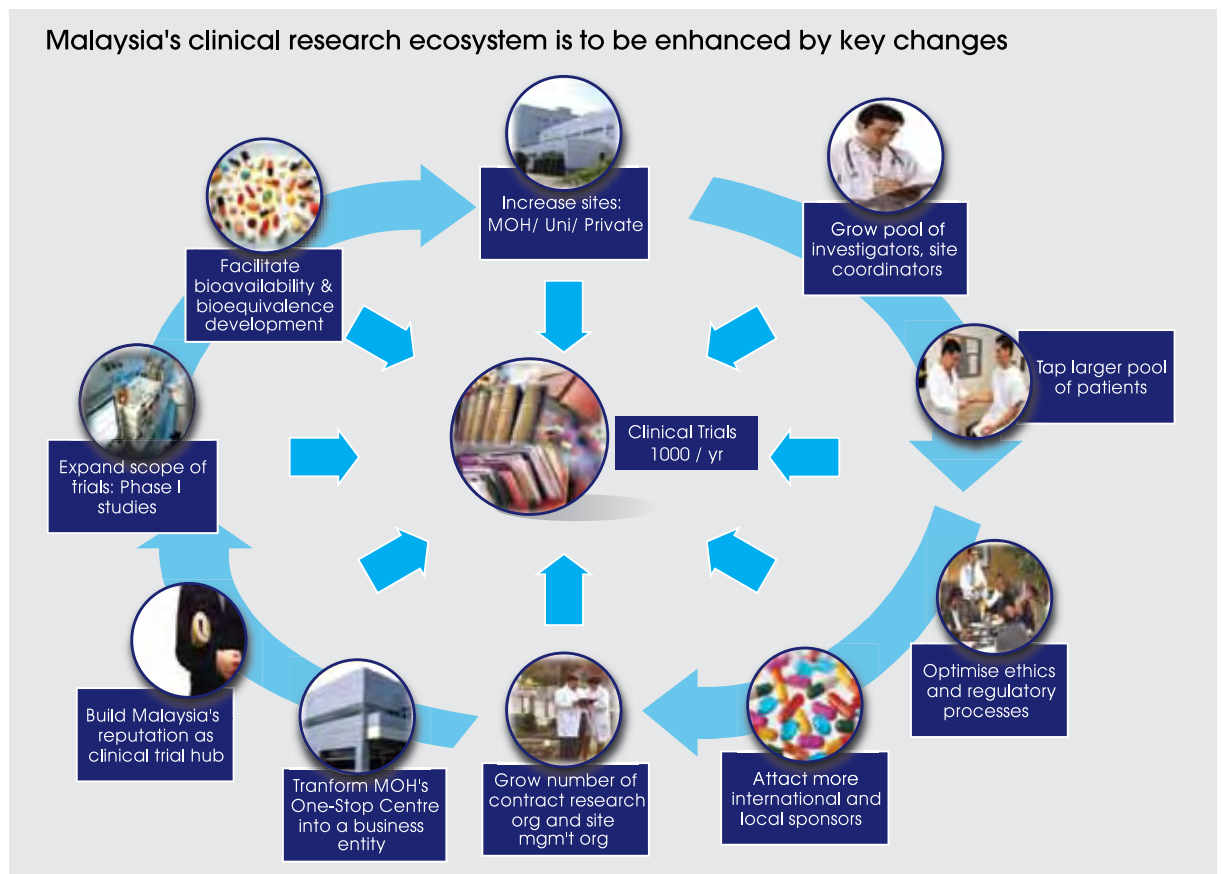
We aspire to move from 100 ongoing clinical trials in 2009 to 1,000 ongoing clinical trials by 2020. This would place Malaysia in a competitive position vis-à-vis countries like Taiwan, which has the same population size as Malaysia but eight times the number of ongoing clinical trials.

Actions

Our goal is to fundamentally change the Malaysian growth trajectory by creating focus and accountability as well as an emphasis on sponsors and investigators. To enable these goals, a new corporatised business entity will be created within MOH to spearhead the industries development, Clinical Research Malaysia (CRM). CRM will act as a clearing house for all funds relating to clinical trials to meet strict international requirements on transparency in payment. It will also support home-grown successful clinical research organisations that focus on building expertise in lifestyle diseases such as diabetes and cardiovascular conditions and tropical infectious diseases. The aim in the coming 10 years is to ensure Malaysia is seen as the Asian destination of choice for Phase II to Phase IV trials in these areas.

To succeed, we must reshape the clinical research value chain and address some of the fundamental issues limiting higher quality clinical trials. With CRM taking steps to plug current capability gaps that exist in Phase I trials and analytical studies, Malaysia will be able to offer services along the entire spectrum of drug and device development. *Exhibit 16-7* provides a snapshot of the key changes that are being proposed, the highlights of which are detailed below.

Exhibit 16-7



CRM will support our high-performing sites and groom investigators into regional or even global centres of excellence with cutting-edge technology medical centres that provide integrated service and undertake research and training. CRM will improve coordination and communication between the sites and investigators in government hospitals and tap the currently under-utilised capabilities of senior, experienced investigators in private centres.

MOH will expand the pool of investigators by providing dedicated time for research, address the shortage of skilled support staff and overcome the administrative hurdles for remuneration and reimbursement for all participants in contract research. CRM aims to meet industry expectations of speedy ethical approvals, outperform rivals in patient recruitment and improve data quality, support and logistical services. Finally, we will coordinate the promotion of Malaysia as a high quality and high performing clinical research site in the ASEAN region.

Funding

The Government will provide an investment of RM38 million to fund the initial capital expense and the operating costs of a network of individual clinical research hubs. A hub will exist in each of the 13 states. In addition to the hubs, seven centres of excellence will be established. A further investment of RM4 million will be required from private investors by 2020 to upgrade existing clinical research sites.

Enablers

To develop a culture of research, MOH will demonstrate high-level support, by assigning research key performance indicators to hospital administrators and doctors, creating protected time for research and making research critical to career progression. Both MOH and MOHE will also train and conduct regular re-certification of doctors in the international standard Good Clinical Practice (GCP). MOH will also increase the number of clinical research associates and study coordinators and promote study coordination as a career with good prospects.

The Government will provide seed funding for the network of CRM hubs across Malaysia and seven centres of excellence focusing on major disease areas like cardiology and oncology by 2015. Each facility will include basic physical infrastructure (internet access, secure facilities for the storage of research products) and a core team with permanent staff on-site to provide crucial support services such as site and document management and study coordination. MOH will also develop facilities and capability to perform bio-equivalence testing.

Another key driver of success is MOH establishing CRM as a corporatised business entity within MOH by mid 2011, to enable commercial transactions and business flows for the commercial function of MOH Clinical Research Centre. MOH will also change its policy to allow for payments to individual public sector employees for conducting trials to incentivise participation. MOH will further consider a change in policy to allow MOH's Clinical Research Centre to sign clinical trial agreements on behalf of the government, in place of the current requirement of Cabinet approval since speed is important when competing for international trials. Finally, the Government will impose a requirement for all clinical trials conducted by universities and private hospitals to be registered with MOH's Clinical Research Centre, in order to create a complete Malaysia National Clinical Research Registry. These policy changes will be completed by 2011.

To turn Malaysia into a destination for clinical research and drug trials, CRM will market directly to international pharmaceutical companies to base their drug trials in Malaysia, offering fast-track registration of such products. These marketing efforts will occur at international trade shows and promotional events,

promoting Malaysia as a high-quality, high-performing clinical research site across diverse disease areas. CRM will also engage experienced local pioneers and regional leaders as consultants to enable quick ramp-up and develop systems for project oversight and monitoring. In addition, CRM will maintain a network of high-quality trial sites and work towards achieving the vision of a more vibrant clinical research ecosystem that will support home-grown innovation in pharmaceuticals and med tech.

Impact

When all the enablers have been achieved, there should be no significant operational risk in accelerating the transformation process of CRM to deliver the GNI target of RM578 million and 900 new jobs by 2020. There will also be significant social impact as fast-track registration will give patients quicker access to the latest treatment options available.

STRATEGIC OPPORTUNITIES

The two strategic opportunities for healthcare are in generics and health travel segments. As these segments have the potential to move Malaysia up the healthcare value chain, we need to change the way we think about our industry and how the public and private sectors can work together.

EPP 3: Pursuing Generics Export Opportunities

Rationale

While Malaysia's pharmaceutical manufacturers have, thus far, been largely focused on the domestic market, the patent expiration of major blockbuster drugs (drugs that generate over RM3.2 billion of revenue for its owner each year) over the next 10 years opens up an attractive global market opportunity for Malaysian generics exports worth RM435 billion.

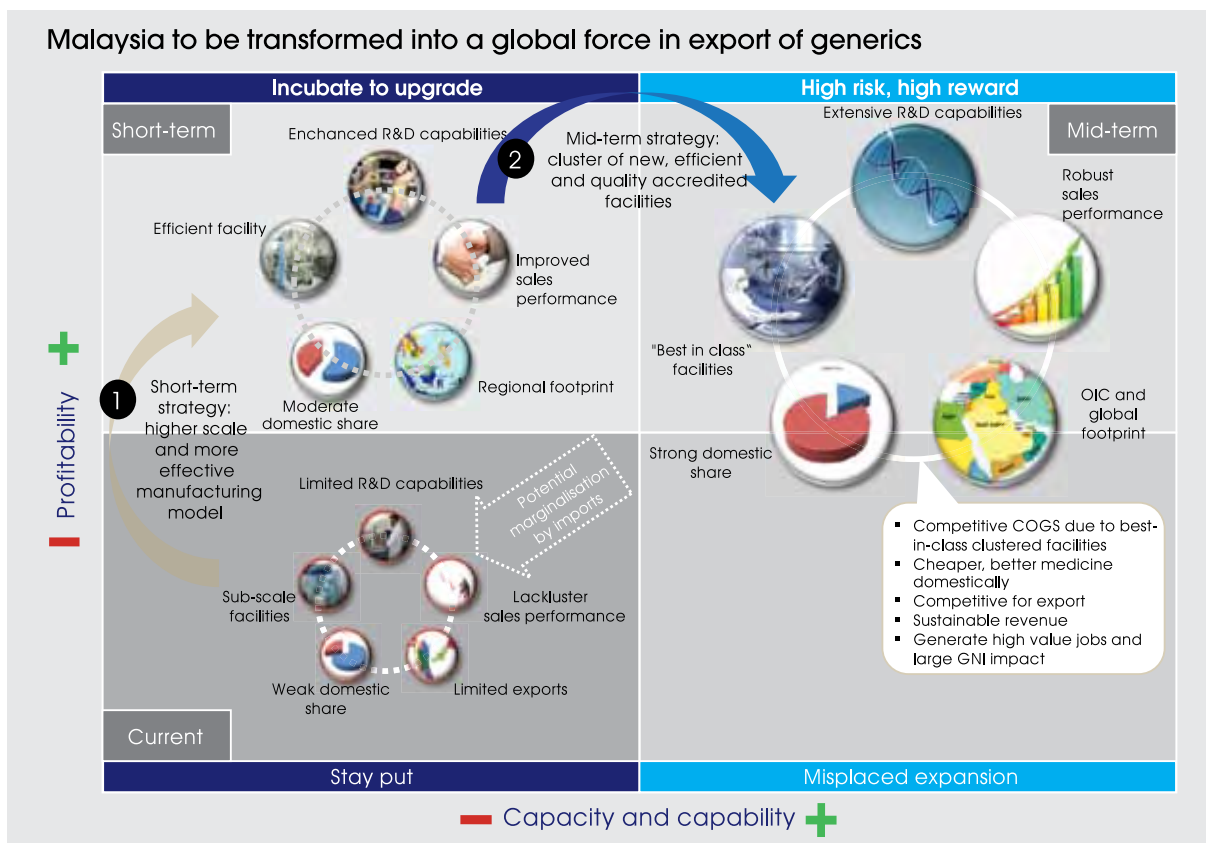
At face value, Malaysian generics are not cost-competitive relative to India and China. However an export-oriented strategy geared towards the Organisation of The Islamic Conference (OIC) countries, may mean Malaysia could succeed. As the only OIC country with the highly-regarded PIC/S (Pharmaceutical Inspection Convention and Pharmaceutical Inspection Co-operation Scheme) membership and a credible halal platform, Malaysia can differentiate itself from its larger competitors. In addition, by actively seeking local partners and pursuing mutual recognition agreements Malaysia may be able to enter several target countries.

Actions

The key to success will be migrating from an inefficient industry model (overlapping portfolios, sub-scale production) to a leaner, more focused set of local pharmaceutical manufacturers.

As shown in *Exhibit 16-8*, the Healthcare NKEA will execute a strategy to transform Malaysia into a major force in the export of generic pharmaceuticals. The critical driver in the first 12 months is MOH, which is currently looking into ways to support private sector efforts to generate business in OIC countries. In parallel between 2011 and 2015 the private sector is likely to get increasingly involved in both rationalising existing capacity and investing in new operations.

Exhibit 16-8



Private investors to create higher scale and efficient manufacturing model by 2011. By enabling multinational pharmaceutical companies to license production to local manufacturers, the issue of the latter's sub-optimal scale could be addressed. On the basis of efficiency improvements, companies can move up the value chain into higher value-added products like biological drugs and enhanced generics.

Private investors and pharmaceutical companies to build a cluster of new, efficient and quality accredited manufacturing facilities. The new facilities will begin construction from 2011 and have dedicated production lines focused on specific therapeutic areas. These will focus on large-volume production of generic drugs with recent patent expiries. The result will be a more globally competitive cost structure and a more flexible mechanism to deliver high-quality drugs into OIC markets.

For this ambitious initiative to succeed, it is imperative that we position pharmaceuticals as a key strategic industry. The following actions and enablers, especially regulatory enablers, will ensure that the pharmaceutical industry is well positioned internationally and domestically.

The government will consider a more robust domestic strategy for local generics and will look into permitting only audited PIC/S equivalent international generics into the Malaysian market. In addition, MOH together with a Special Purpose Vehicle (SPV) sponsor will pursue private investment for new manufacturing clusters, while supporting novel R&D efforts to create a sustainable advantage. Further efforts to tie in ongoing research programmes at local universities and put in place appropriate incentives to encourage commercialisation of such research will help to drive success.

Enablers

To ensure adequate human capital for the pharmaceuticals sub-sector, new pharmacists will be allowed to spend part of their studies and compulsory service in the pharmaceutical industry by mid-2011.

For this EPP to succeed, the government will recognise pharmaceuticals as a strategic industry within the healthcare ecosystem and ensure its interests are represented in international trade missions and negotiations. MOH will establish the post of a National Pharmaceutical Industry Advisor to the Minister of Health, who will be appointed by 2011. This person is accountable for developing the pharmaceutical industry. The advisor should also encourage local industry to rationalise and create companies that focus on high value-added products. To promote R&D, MOH will look into regulatory changes to bundle pharmaceutical products into a limited set of public procurement tenders and require a minimum percentage of sales to be ploughed back into pharmaceutical research and development by 2011. MOH will further implement and enforce the National Medicines Policy by mid-2011 to require local production of specified patented drugs that are sold to the public sector. MITI will further look into ways to encourage multinational pharmaceutical companies to out-source manufacturing to local companies, while requiring imported generics to meet manufacturing standards of local companies.

Another regulatory change MOH will look into is the requirement for bio-equivalence testing in the registration of all generics products. MOH will also consider building a consolidated national database of all local manufacturing capabilities: capturing financial, operational, organisational and portfolio information to augment policy-making abilities by mid-2011. Furthermore, all other ministries will need to obtain MOH approval before making concessions regarding the pharmaceutical industry in any trade negotiations. Finally, we need to modify patent laws to prohibit multiple patent extensions and align with U.S. patent expiry data.

MITI, MOH and the Pharmaceutical Industry Advisor will look into the establishment of government-to-government agreements giving Malaysia preferential market access and mutual recognition of product registration with select countries from 2011 onwards. MITI will also look into trade negotiations to open up access to various markets within ASEAN.

MITI will further provide grants to cover a certain percentage of the costs for pharmaceutical trade shows and promotions and will assist more Malaysian companies to promote made-in-Malaysia pharmaceuticals internationally.

Funding

In order to realise our Generic Pharmaceutical Export strategy, HIDC will need to attract private investment totalling RM10.2 billion. In addition, the Government will provide public investment of RM96 million over three years (2010 to 2012) to kick-start the project and for the building of 60 highly efficient manufacturing facilities for production of generic drugs for export.

Impact

With the implementation of the various enablers detailed in this book, this EPP will yield a significant impact of RM13.9 billion GNI and 12,400 new jobs by 2020.

EPP 4: Reinvigorating Health Travel through Better Customer Experience, Proactive Alliances and Niche Marketing

Rationale

Although the Malaysian healthcare travel industry has shown consistent growth of 38 percent per annum between 2003 and 2008, in 2009 the market experienced a contraction. The industry continues to remain small (estimated at RM350 million in 2010) and is prone to both exogenous shocks such as a global economic crisis and increased competitive pressure from neighbouring countries.

Markets such as Singapore and Thailand have not only shown faster historical growth but weathered the downturn better by positioning themselves as leaders in specific niches of the industry – high-quality care and high-value health experiences.

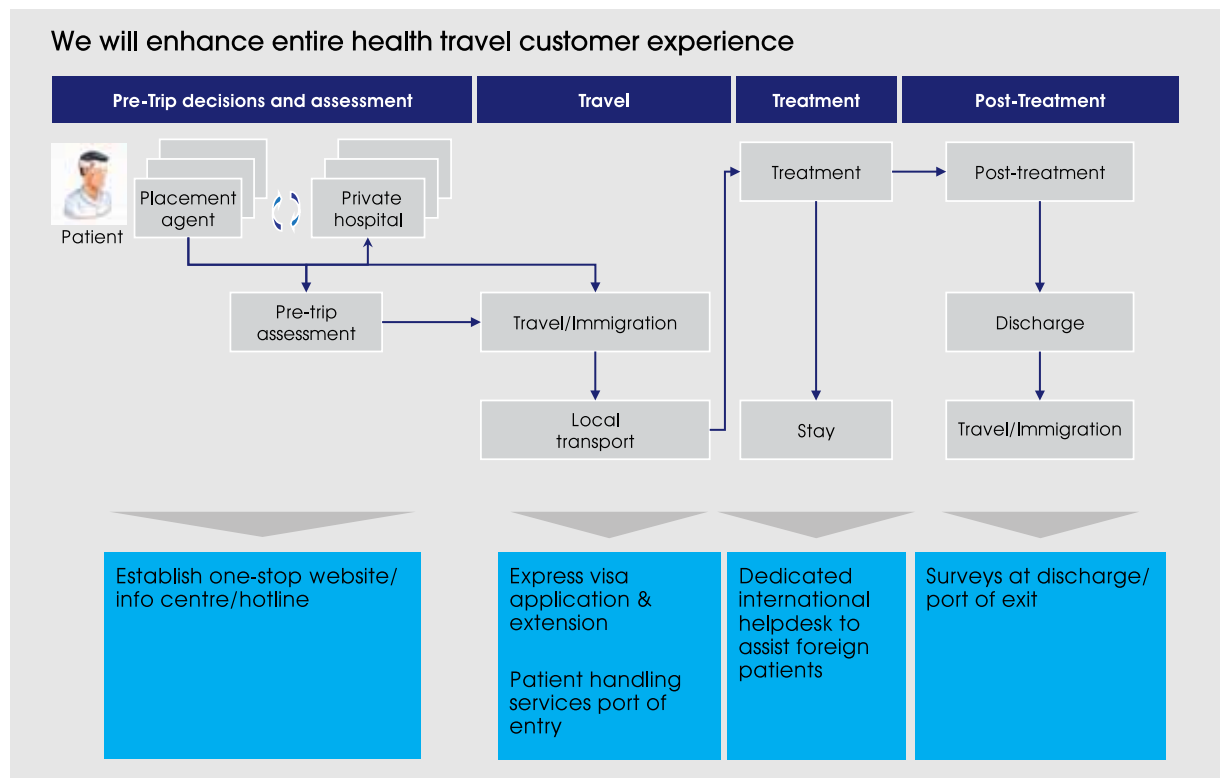
Actions

The goal of this EPP is to create a differentiated position for Malaysia and to broaden the customer base beyond Indonesia (70 percent of 2009 receipts) and beyond lower margin outpatient treatments (more than 80 percent of health travel procedures). The primary owner for the extensive marketing efforts is the Malaysia Healthcare Travel Council (MHTC). The effort to develop better infrastructure and the development of strategic bilateral relations will be undertaken by the MOH and Ministry of Tourism (MOTOUR). It is expected that the development of the marketing campaign and bilateral relations will occur within 2011.

The first phase of the strategy will be to grow patient volume and expand beyond the Indonesian market, and the second phase will be to build capability in niche specialties to drive a shift towards more profitable in-patient care in later years.

Eight potential markets have been identified for expansion and a three-tiered value proposition has been developed. For the proposed target markets of Indonesia, Vietnam and Bangladesh, we intend to provide a healthcare service that offers good value-for-money. Examples of healthcare services would range from regular health check-ups to more complex in-patient procedures in the fields of cosmetic surgery, cardiology and oncology. We believe that a different approach towards the Middle East and Singapore markets, providing high quality healthcare at a reasonable price, will attract more patients. For Japan, China and Western countries alike, a healthcare and tourism package will increase the attractiveness of Malaysia. Providers of these services would be the 35 identified private hospitals earmarked to promote health travel.

Exhibit 16-9



SOURCE: Interviews with industry experts, lab analysis

As illustrated in *Exhibit 16-9*, MHTC will work with private hospitals, placement agents and multiple agencies to introduce a customer experience incorporating four critical changes:

- Extensive and well-coordinated marketing effort from both state agencies and individual hospitals to penetrate new markets;
- Proactive alliances with foreign governments and insurers to secure patient loads and ensure medical insurance is portable, for example Indonesian insurers;
- RM335 million investment into infrastructure and human capital to ensure sufficient hospital capacity and 5,300 trained medical professionals to support growth in demand; and
- A seamless end-to-end patient service to create positive word of mouth, which plays an increasing role in patient choice of healthcare destinations.

The operational risk with this EPP is more pronounced than others as greater coordination across multiple agencies is required. A very clear, simplified roadmap for potential patients will require collaboration across all 35 of the private hospitals earmarked to lead health travel. A strong operational leader from the private sector to catalyse this change will be critical and MHTC has begun a search for the right candidate. MHTC's goal is to ensure that this champion has the ability to impact the most critical parts of the new healthcare travel strategy.

The plan encompasses several steps, one of which is launching a focused, aggressive and segmented marketing campaign to better reach our target markets. Next, healthcare travel in Malaysia should migrate towards higher value customers by offering specialised treatments. MHTC will work with BNM to negotiate for portability of medical insurance between countries and secure targeted alliances across Ministries, for example Tourism, Home Affairs, Finance, Foreign Affairs and with all Malaysian representative offices abroad. The continued development of adequate healthcare infrastructure and specialised human capital to cater to more specific healthcare needs is also crucial to this initiative. Finally, enabling a seamless end-to-end patient experience – from the time a patient decides to explore Malaysia as a healthcare destination, through the actual clinical experience and during the post operative recovery period – will improve the attractiveness of Malaysia as a healthcare destination.

Enablers

The Ministry of Home Affairs and Immigration Department will consider ways to shorten the time required by private hospitals to bring in foreign doctors, nurses and other allied health labour to support the growth in hospital capacity. In addition, MOH and MOHE will increase specialist doctor training capacity to raise domestic supply and establish centres of excellence, which will be a one-stop location for innovative care, research and specialised education to further enable development of a greater pool of specialists in the nation.

MOF shall continue offering tax incentives for the upgrade of existing facilities to accelerate the development of health travel infrastructure. Further speeding up the processing time of approvals on areas such as renovations, new buildings and licence inspections at both local authorities and MOH level will also enable infrastructure development. Meanwhile, MOH will continue monitoring existing hospital capacity and expand the number of private hospitals and facilities that are allowed to offer health travel services.

MOH will consider revising advertising guidelines to allow hospitals to publish patient testimonials on their websites and in marketing collateral. MOH also needs to work with Immigration Department to allow express visa approvals and extensions for health travellers and their companions by end of 2011.

To attract more health travellers, MITI will involve MOH in various trade missions, to seek agreement with foreign governments or foreign insurers to provide portability of medical insurance. In addition, MOH will encourage hospitals to pursue alliances with foreign hospitals and doctors to strengthen the referral network. Private hospitals will also actively engage Malaysian MNCs to encourage them to send their overseas employees to Malaysia for treatment.

MOH will enable MHTC to function as a corporate entity with flexibility to coordinate marketing activities by end of 2010. MHTC will need to prepare marketing collateral and conduct training for all relevant offices within Malaysia's global network of offices for example, embassies, Foreign Trade mission offices, MATRADE, Malaysia Airlines (MAS) and Tourism Malaysia. MHTC will also allow co-branding with MAS and Air Asia – these would take the form of promotional packages that include healthcare inserts in in-flight magazines and the inclusion of a healthcare segment within in-flight arrival videos. Finally, MHTC will sponsor the establishment of a Brand Ambassador for Health Travel who will actively market Malaysia as a healthcare destination.

Funding

It is critical that RM335 million be sourced from the private sector hospitals to upgrade hospital infrastructure required to accommodate the rising number of health tourists.

Impact

With all these enablers in place, we are expecting Malaysia's health tourists from the identified markets to reach 1.9 million in 2020, contributing RM9.6 billion revenue. This translates into a GNI impact of RM4.3 billion and the creation of an estimated 5,300 jobs.

LONGER TERM BETS

We believe that we must tackle more difficult issues in order to gain a strong position early in new technologies such as telemedicine and to establish Malaysia as a source of significant medical innovation. These two EPPs will require government to work hard to gain the support, commitment and energy of a variety of public and private sector partners.

EPP 5: Creating a Diagnostic Services Nexus to Achieve Scale in Telemedicine for Eventual International Outsourcing

Rationale

As Malaysia's population grows there will be increased demand for preventative care, including early diagnosis of diseases. Today's distributed model of providing diagnostic services such as radiology and pathology across more than 130 public and 210 private hospitals is far from ideal. As a result, the average turnaround time for elective radiology and pathology services in public hospitals ranges from one to six months.

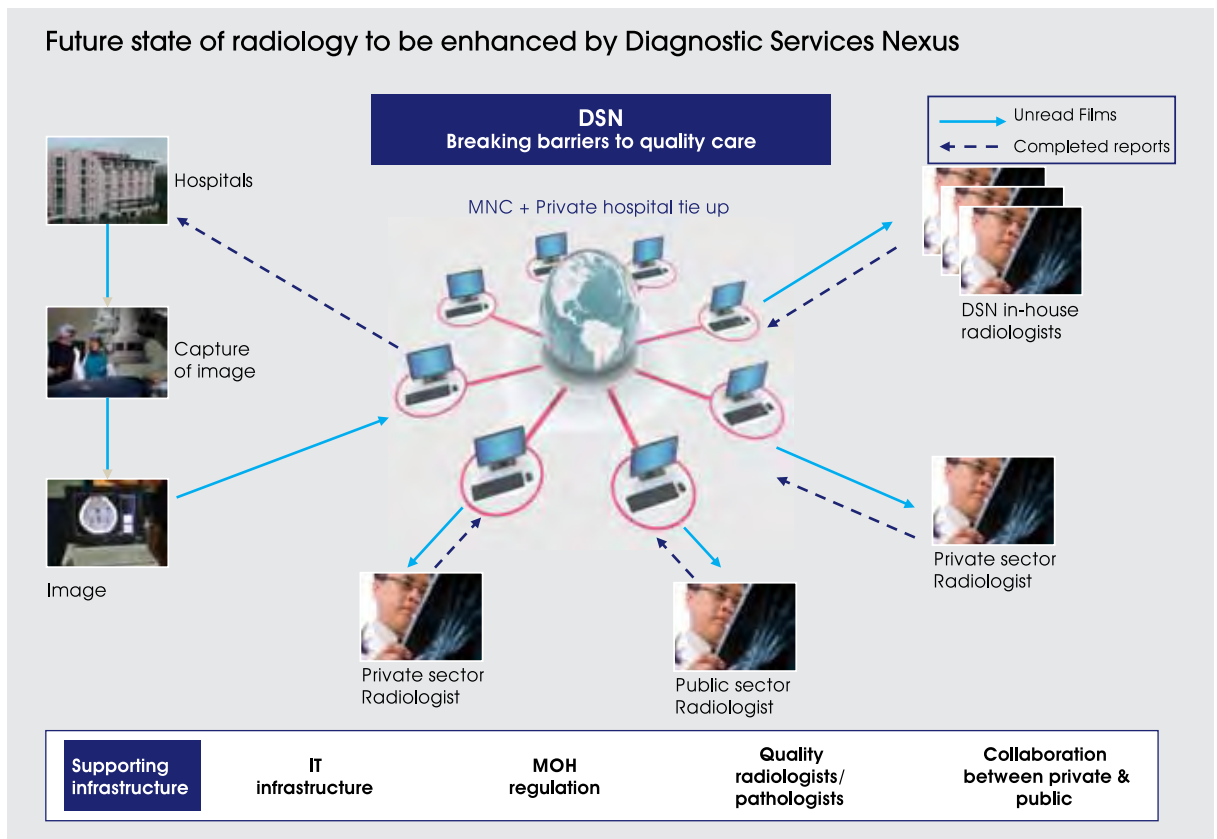
Actions

The Diagnostic Services Nexus (DSN) aspires to deliver two changes:

- Create efficiency within the existing domestic diagnostic services through public-private partnerships. For radiology a partnership between a private diagnostic services provider and a large multinational corporation as a technology partner would create a central coordinating body to help evenly distribute the workload. For pathology, a partnership between the MOH and private pathology providers would allow the outsourcing of pathology laboratory services; and
- Leverage a scaled business model that would pursue international diagnostic outsourcing opportunities via telemedicine and build on Malaysia's first-mover strength in having telemedicine statutes and regulations.

The initial focus will be on radiology and pathology. Radiology services will be linked to the DSN via a tele-radiology grid and will include general radiology, mammography, multi-slice cardiac and neuro computed tomography (CT) and general, cardiac, neuro and breast magnetic resonance imagery (MRI) as illustrated in *Exhibit 16-10*. Pathology services will be consolidated and outsourced and include all basic tests and some specialised tests.

Exhibit 16-10



The critical building block for success will be creating connectivity between healthcare information systems residing within hospitals and the DSN. The plan is to engage a large global company with healthcare IT capabilities and a proven track record of successful telemedicine implementation to invest in and develop this network. Examples of global companies with the required IT expertise are GE, Philips and Siemens. The private sector healthcare service provider and the global player will together form the DSN, which will be implemented in four phases.

- Phase I: Pilot tele-radiology in three hospitals, starting with domestic connectivity for radiologists to access and read the films or images remotely. DSN is to fund the necessary information and communication technology (ICT) investment. DSN will also reduce scanning and waiting times via an online queuing system among participating facilities. At the same time, MOH will pilot the outsourcing of pathology services in selected hospitals;
- Phase II: Expand to all hospitals with digital radiology capability and have each hospital outsource their excess workload to DSN, which will guarantee faster turnaround but at the same cost;
- Phase III: Expand scope to additional hospitals and diagnostic centres nationwide in Malaysia; and
- Phase IV: DSN to export tele-radiology and pathology services globally, backed by the solid foundation in the domestic market, standard operating policies and protocols as well as robust business models.

The operational risks of this model are high, of which gaining agreement from public sector hospitals to outsource diagnostic services will be the biggest challenge. Active dialogues have begun with various MOH radiologists and pathologists, and the use of pilot sites will facilitate smooth transition during the expansion phase. MOH will be involved through the setting of standards and KPIs for the DSN and private pathology service provider, to ensure that all stakeholders are clear on expectations. The second concern is identifying a diagnostic services champion, and the search is currently underway. Finally, although attracting investment from MNCs whilst developing capacity for radiologists and pathologists is expected to be challenging, we believe this concern is more manageable. A number of large MNCs have already expressed an interest in investing and a mutually beneficial path is currently being explored.

Enablers

MOH and MOHE will need to provide for the training of more radiologists and sub-specialist in various radiology and pathology fields beginning in 2011. Examples of sub-specialties include MRI, CT and interventional radiology. They will go one step further by creating linkages between Malaysian Masters programmes and international colleges for radiology and pathology, in for example Australia, the UK and USA. This is to enable local radiologists and pathologists to be accredited and recognised internationally, thus facilitating the export of radiology and pathology services to the global market. This effort will begin in 2012.

Telecommunication service providers and the private investor will ensure that a robust and secure high bandwidth broadband infrastructure and the establishment of dedicated bandwidth for transmission of the diagnostic images are in place in targeted areas. The DSN service provider, through a tie-up with the MNC technology partner will implement a modern data compression technology to allow the smooth and reliable transfer of images leading to faster diagnostic turnaround times. Another infrastructure requirement for DSN would be the establishment of cloud computing and/or server farms by the private sector investor by 2011 for secure archival of radiology and pathology digital files; storage will be for a minimum of seven years, as per statutory requirements for patient medical records.

MOH will endorse the outsourcing of radiology reporting from public hospitals to DSN and pathology to another private sector operator to be determined during a tender process. MOH will also review a change in policy to allow MOH radiologists and pathologists to accept financial reimbursement for reading and reporting additional diagnostic tests and for providing help with the establishment of standard operating protocols for the DSN. Finally, MOH also needs to mandate professional indemnity insurance for all radiologists who participate in the DSN. These policy changes will be implemented by mid-2011.

To facilitate international export of our diagnostic services in the later phases of the EPP, MITI will need to negotiate free trade agreements to allow for cross-border export of medical services, specifically radiology and pathology starting from 2013.

Funding

It is necessary that the private sector investor and MNC technology partner contribute RM91 million to build the infrastructure and purchase equipment for a radiology central job bank, which can serve as the foundation for a future national archive of diagnostic images. This funding is expected to come primarily from the private sector investor.

Impact

The resulting impact of this effort would be incremental GNI of RM356 million and the creation of approximately 300 jobs. The benefit for the MOH would be achieving consistent quality of diagnostic services and quicker turnarounds of radiology and pathology reports, with the potential for earlier detection of diseases and medical conditions. For Malaysia, the DSN will create higher-value jobs for trained medical professionals and enable us to gain a leadership position in healthcare digitisation and telemedicine in Asia.

EPP 6: Developing a Health Metropolis: A World-class Campus for Healthcare and Bioscience

Rationale

Various academic institutions, public and private sector hospitals and private sector conglomerates in Malaysia and the region are all working towards the creation of a thriving medical ecosystem located in one large campus. Potentially interested companies include University of Malaya (UM), MAHSA University College, International Specialist Eye Centre (ISEC), Kumpulan Perubatan Johor(KPJ), Pantai Group, General Electric (GE), Gribbles and Forest Medical Centre.

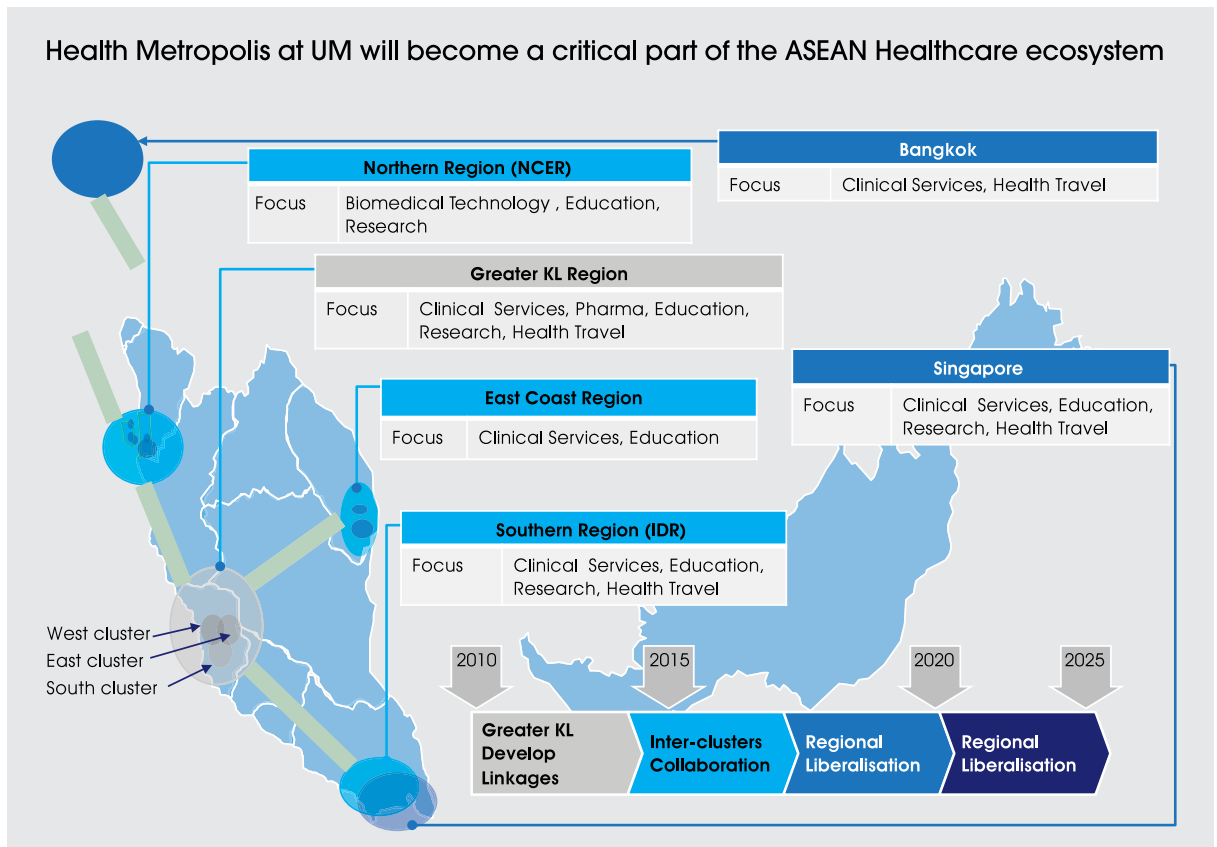
Two of the global best-in-class examples, Harvard's Longwood Medical Area and Stanford's Bio-X Centre, show that a successful ecosystem can deliver better quality care, generate innovative research and produce better trained clinicians.

Actions

The goal for this EPP is to create a healthcare ecosystem in Greater KL/KV as a launching pad for a series of ecosystems in other locations. UM would serve as the anchor. With its strong academic curriculum, research capabilities and large tracts of available real estate, the ecosystem will create traction on education and research and be able to attract others to deliver the remaining components of clinical care. Organisations such as Institut Jantung Negara (IJN), Columbia Asia, Cell Safe, Khazanah, Sime Darby and International Medical University (IMU) have all expressed interest in participating and understand the synergies of having access to trained professionals and innovative research.

By creating an economically self-sustaining metropolis University Malaya will be able to expand, at a later stage, into value-added services and products, for example healthcare education, medical expositions and collaborative global research and patents. Although the achievements of Harvard or Stanford may take quite some time, as shown in *Exhibit 16-11*, University Malaya plans to be the first critical first step towards building a successful network of healthcare focused hubs in Malaysia.

Exhibit 16-11



The moderate to high levels of operational risk are mitigated by the momentum already created by alliance partners willing to invest in the idea. Nonetheless, various enablers required to accelerate success have been identified.

Enablers

MOH and MOHE will work together with private hospitals to ensure that university hospitals and private healthcare providers can help with specialist doctors and allied health training programmes to meet national needs.

The Land Transport Commission (*Suruhanjaya Pengangkutan Awam Darat* or SPAD) will look into building an MRT station, providing public transport and approving the construction of new car parks in Health Metropolis by 2015 to reduce traffic congestion. Selangor state government and Petaling Jaya City Council (MBPJ) will also approve land zoning and construction plans to kick-start infrastructure development in 2011.

To assist in the development of the metropolis, MOHE will consider providing strategic research grants to encourage R&D activities. MOF will also provide tax incentives to companies qualifying under Health Metropolis status.

Funding

The investment required for Health Metropolis is estimated at RM1.1 billion, channelled towards the construction of necessary infrastructure to be able to provide patient services, research and healthcare education in a single location. EPU's facilitation fund will supply targeted incentives for 10 percent of the investment, and the remaining 90 percent is to come from private sector tenants.

Impact

The incremental GNI delivered from this EPP is estimated at RM986 million with 4,400 jobs by 2020 and the development of a thriving medical ecosystem.

BUSINESS OPPORTUNITIES

The Healthcare NKEA has identified two longer term business opportunities, both of which could deliver significant economic benefit but are still in very early stages of growth. The first, med tech contract manufacturing is organically mushrooming, but the market remains fragmented and we do not have enough information to understand how this segment can be enabled further. The second, seniors living, addresses the outpatient and community-based care needs for the elderly, but is still a novel concept in Malaysia.

Business Opportunity 1: Med Tech Manufacturing

The medical device industry in Malaysia is still in the initial stages of development. Although a baseline growth rate of eight percent is expected in the future, the fact that there are 180 companies and that exports are largely composed of rubber-based consumables (for example catheters, examination gloves) make a growth strategy for non-consumables challenging.

We believe however that Malaysia's contract manufacturing heritage and experience with rubber-based products as well as the more sophisticated electrical and electronic industry creates a unique niche opportunity for the country that should be explored further. An example of the products that could be further developed includes orthopaedic replacement devices, in-vitro diagnostic kits and dental surgical products.

Med Tech will be closely tied to the pharmaceuticals EPPs (generics and clinical research) and should benefit from the growth and innovation in this industry.

One example of a med tech opportunity is the manufacturing of in-vitro diagnostic kits and equipment. We estimate the global IVD market to be RM94 billion and believe that with our high prevalence of tropical diseases such as malaria as well as tuberculosis and H1N1, Malaysia is well positioned to win in this sub-segment. We already have a small base of high-quality research and production in this sub-segment and with the right incentives (soft loans, MNC alliances, R&D investment), it could scale rapidly and attract global companies to manufacture equipment in Malaysia. Developing IVD manufacturing could potentially lead to a RM72 million GNI impact and creation of 1,200 jobs.

To create a truly world-class med tech industry it is first important to attract anchor MNCs that will work with local companies to manufacture medical devices that can be consumed in the local market and exported abroad. Second, SME grants and enforcement of international certification such as ISO 13485 can enable small local companies in niche medical device sub-sectors to grow into regional and global

companies. Lastly, it is important that med tech manufacturing become a priority, both for the domestic healthcare agenda as well for bilateral trade agreements.

Funding

An estimated RM518 million for the establishment of new manufacturing facilities for contract manufacturing will be required. This funding is expected to come from the private sector, mostly from foreign direct investments.

Business Opportunity 2: Seniors Living

The number of Malaysians aged 60 years and older is projected to increase to 3.4 million in the year 2020 (9.9 percent of total population). Few elderly people can escape the accumulation of chronic pathologies due to physiological changes such as ageing kidneys, memory deficit, altered dietary habits and dependence on multiple drugs. This growing segment of consumers is likely to create a need for outpatient care such as seniors living facilities. Seniors living care resides in the middle of the outpatient care continuum between post operative check-ins on one end and acute care nursing homes on the other.

The long-term goal is to create a number of centres offering assistance to people who need help with activities of daily living, but wish to live as independently as possible, for as long as possible. Unlike nursing homes which focus on final stages of care, seniors living promotes active ageing and productive living.

Key services offered under the umbrella of seniors living would be integrated personal assistance, domiciliary, personal and medical care. To address the physical location needs, existing infrastructure would be refurbished in order to develop barrier-free housing, fitted with disabled-friendly features. Other facilities would include wellness, primary and secondary healthcare options.

Though still in the early stages of development we expect the seniors living to deliver 11,400 new jobs and RM1.0 billion in incremental GNI by 2020. The target market is primarily local Malaysians and potentially a small portion of the Malaysia My 2nd Home applicants who come for healthcare purposes.

For Seniors Living to be successful Malaysians should be able to tap into their Employee Provident Fund or other retirement savings to fund a seniors living lease; or that insurance reform occurs to permit coverage of seniors living support. The second initiative is to get support from property developers to view a build-operate-transfer model as an attractive value proposition instead of the current build-and-sell model. We propose that property developers not only build, but work through third parties to manage the properties. Finally, there is a need to manage the cultural shift that will be required for Malaysians and foreigners to outsource care for the elderly to third parties.

Examples in Hong Kong and India validate our hypothesis. As our society develops and ages, there will be a growing demand for seniors living, current efforts in the Iskandar region and moves by private property developers on a small scale show the beginnings of organic growth of such a sub-sector. However we also believe that seniors living represent a much longer-term investment opportunity.

Funding

An estimated RM4.8 billion will be required over the period of 2010 to 2020 to develop elderly-friendly property developments that will offer a range of medical and personal services for assisted living.

Baseline Growth

We project near-steady state organic growth in the pharmaceuticals, med tech and health services sub-sectors. The pharmaceuticals sub-sector is forecast to grow at two percent, below the industry forecast of nine percent, due to anticipated competition from the new manufacturing cluster to be formed under EPP 4 and to avoid double counting domestic and international generics.

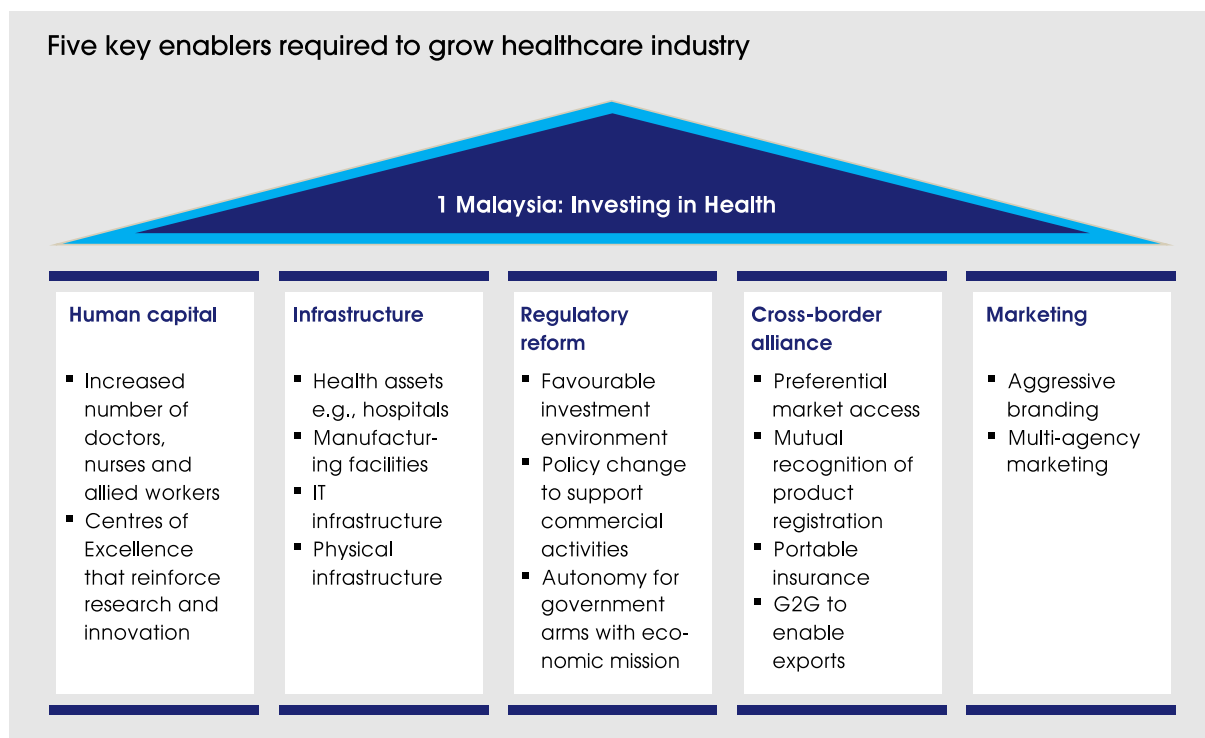
The med tech sub-sector is projected to grow at eight percent, above historical growth of six percent given the consumables growth strategy into high-growth markets China and India.

Finally the health services sub-sector, which comprised domestic expenditure and health travel, is projected to grow at seven percent, below historical growth of 11 percent due to the belief that healthcare expenditure growth is likely to be managed down due to domestic healthcare reform. Although health travel will grow at a double-digit rate the starting base is small (less than RM325 million) and the incremental upside is being counted in the health travel EPP.

COMMON ENABLERS

The enablers described for each EPP can be grouped into human capital, infrastructure, regulatory reform, cross-border alliance and marketing. Collectively they represent the foundation upon which the initiatives rest. *Exhibit 16-12* shows these enablers.

Exhibit 16-12

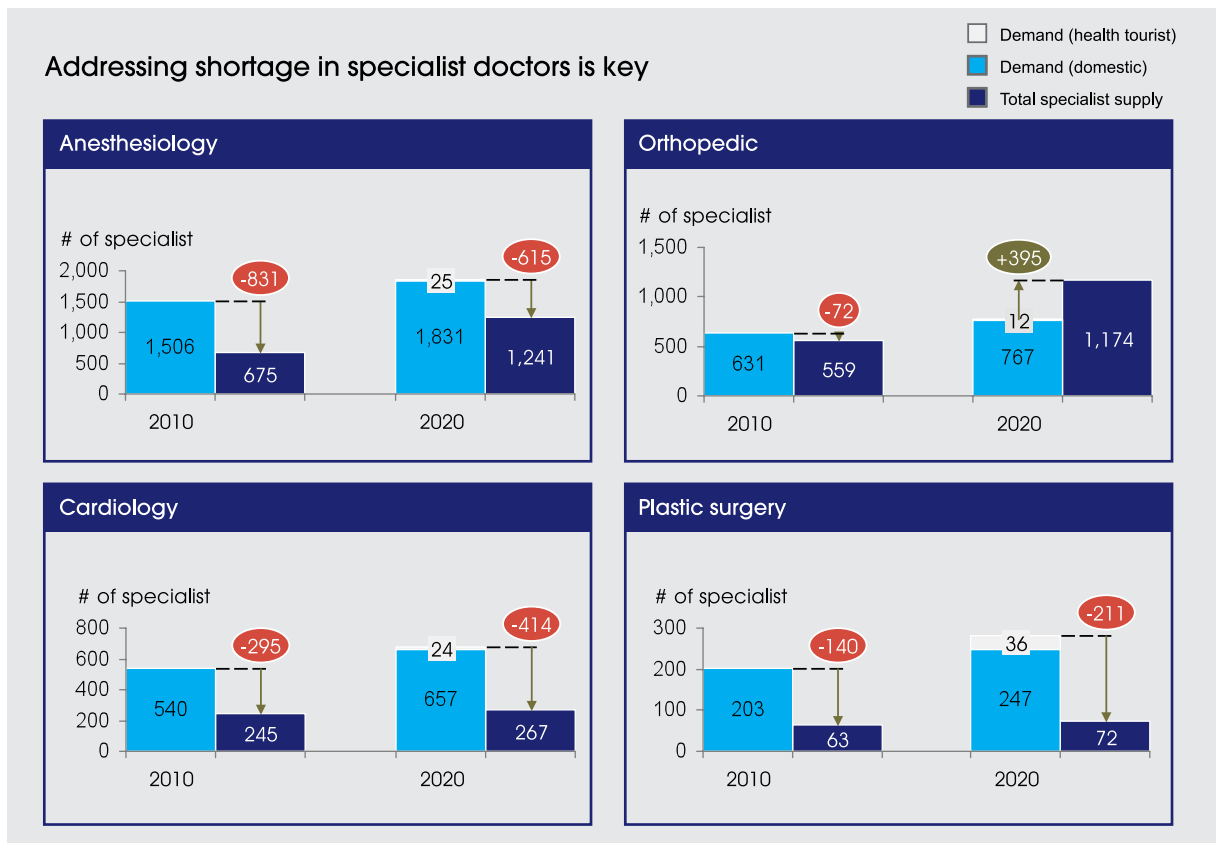


Secure the Right-Skilled Human Capital

Overview

Access to skilled human capital is paramount to the success of the Healthcare NKEA. In 2009, the healthcare industry is estimated to have employed 160,000 people which, through both baseline and EPP driven growth, will increase to a total of 340,000 by 2020. Although we will see a potential surplus in the number of healthcare professionals, we expect that the current gap in specialists (for example general surgeons) and sub-specialists (for example hepato-biliary surgeons) will continue into the foreseeable future. *Exhibit 16-13* shows the projection for four main specialties which predicted mostly shortages and an instance of oversupply. Currently the training of specialist and sub-specialist doctors is done in isolation, which means that there is little planning to meet actual demand in specialist fields; to compound this is the fact that although the private hospital sub-sector has a large population of practicing specialists, it plays no role in training doctors.

Exhibit 16-13

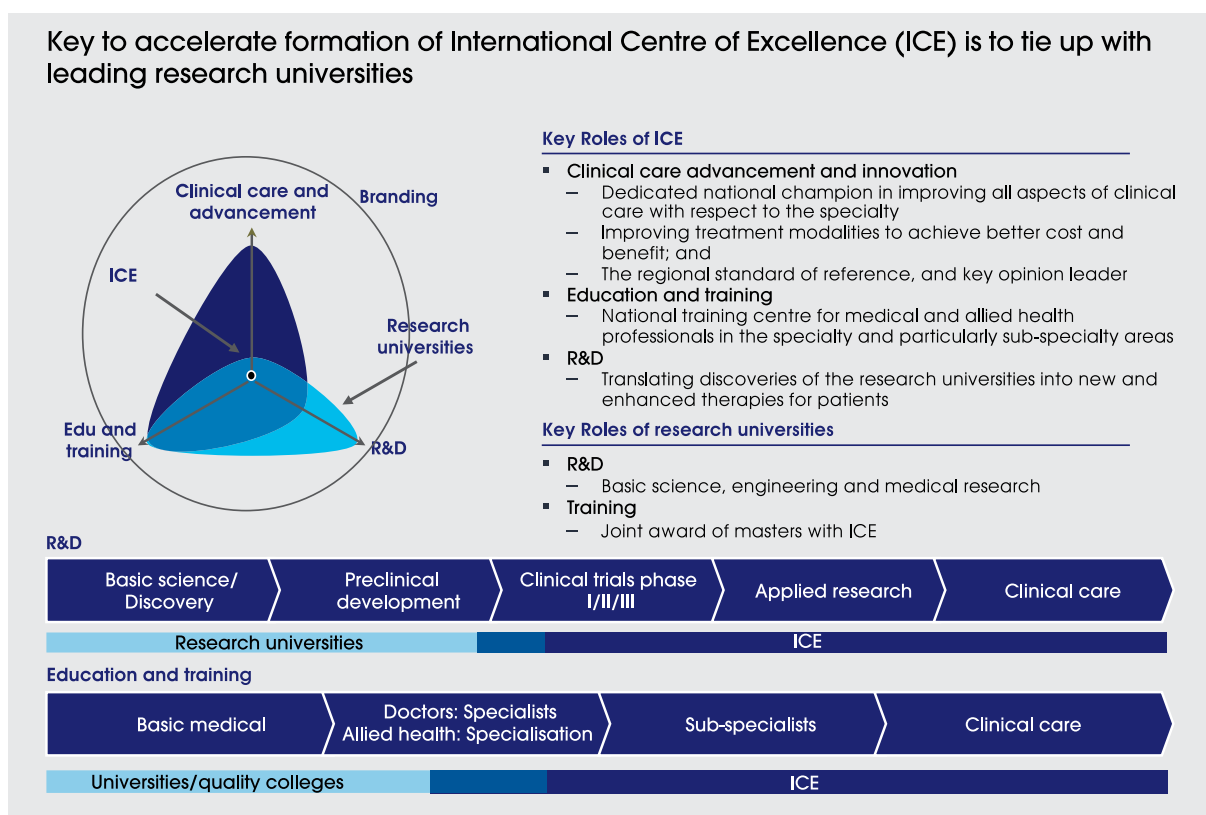


SOURCE: Lab projections, interview with industry experts

Actions

We need to ensure that these facilities work together to alleviate this shortage of specialist doctors. MOH and MOHE will consider the model of International Centres of Excellence (ICE), for different specialties. We need to put in place systems and structures to develop specialised medical manpower (sub-specialists, specialised allied health professionals and specialists, under certain instances) by combining research, innovation in care and training. As shown in *Exhibit 16-14*, the ICE will partner with leading local or foreign research universities to expedite the training of specialised manpower and to elevate the standard of care and outcomes in Malaysia through research and innovation. Such centres, which would leverage on existing physical infrastructure and human resources in MOH, MOHE and the private sector, will consolidate our efforts to propel Malaysia to becoming a regional leader in selected specialties.

Exhibit 16-14



Utilise Infrastructure Efficiently

Overview

Although there are approximately 130 public and 210 private sector hospitals in Malaysia and a growing culture of clinical research, there needs to be a more comprehensive effort to create greater information system connectivity and coordination across the care settings. Without this, Malaysia’s existing infrastructure will remain sub-optimally deployed. Only by redeploying our assets can we hit our target of 1,000 annual clinical trials, an active outsourced diagnostic services hub and a more seamless customer experience for health travellers. Dedicated physical assets such as specialist sites will be required, as well as stronger virtual connectivity such as data sharing networks.

Actions

Efforts for improving infrastructure will include relatively minor but valuable tasks such as comprehensive databases providing health travellers helpful information and a robust search engine for sourcing health providers (*Exhibit 16-15*). They also include fundamental investments in manufacturing sites and information and communication technology data infrastructure and servers as detailed in each EPP.

Exhibit 16-15

Example of an infrastructure quick win - comprehensive hospital database will provide quick matches of health tourists' needs

The screenshot shows the Malaysia Healthcare website interface. At the top, it features the Malaysia Healthcare logo and the Ministry of Health Malaysia logo. The main navigation includes 'Overview', 'Why Malaysia', 'Planning Your Trip', 'Healthcare Facilities Services', 'Malaysia Healthcare Travel Council', 'Upcoming Events', 'Media Centre', and 'Talk to Us'. A prominent 'Search Doctors' section allows users to find a doctor by specialty and region. Below this, a search filter shows 'Country of origin: China (Shanghai)', 'Type of treatment: Cardiology (Coronary Artery Bypass)', 'Preferred region: None', and 'Preferred accommodation: 4-star hotel'. The search results are sorted by 'Specialty ranking' and display a table of hospital rankings.

| Hospital ranking in selected specialty | Hospital | Top specialist | Location | Treatment price (USD) | Accommodation cost / night (USD) | Transportation option | Nearby tourism attraction rating |
|--|-------------------------------------|----------------|-------------------|-----------------------|----------------------------------|---|----------------------------------|
| 1 | National Heart Institute (NHI) | Dr. xxx (CV) | Kuala Lumpur (kl) | 8,000 - 12,000 | 150 - 300 | Direct flight by Malaysia Airlines to China | Find out more |
| 2 | Osteoarthritis Intan Medical Centre | Dr. xxx (CV) | Kuala Lumpur (kl) | 9,000 - 13,000 | 150 - 300 | Direct flight by Malaysia Airlines to China | Find out more |
| 3 | Malacca Medical Centre | Dr. xxx (CV) | Malacca (mal) | 6,000 - 10,000 | 100 - 200 | Flight + Bus to Malacca route | Find out more |

Change Regulations and Policies

Overview

Although significant regulatory policy shifts are already proposed as part of the Tenth Malaysia Plan, the Healthcare NKEA believes that creating more autonomous, commercially focused organisations and modifying regulation to drive greater exports will be critical for EPPs to succeed.

Actions

We have identified changes to regulatory policies required to facilitate the success of the EPPs, which are detailed under each and cut across the various Ministries: MOH, MOHE, MOHR and MOHA. There are ongoing efforts to make these regulatory changes happen, which the Ministry of Health will champion. In addition, to facilitate the growth of the med tech sector, MOH will ensure that the Medical Device Act be tabled in Parliament.

Create Cross-border Alliances

Overview

Our ambition through the EPPs is to position Malaysia as a global healthcare participant and regional healthcare leader. The feedback from a number of private sector companies has been that to succeed, Malaysian healthcare must establish stronger alliances within the domestic value chain and across borders with leading companies in other countries.

Actions

MOH will make active government efforts through MITI and MATRADE to allow for stronger reciprocal agreements with neighbouring countries. These cross-border alliances have been detailed by EPP and the government will factor these initiatives into future government-to-government talks.

Co-ordinate Better Targeted and More Aggressive Marketing

Overview

Today there are two streams of marketing activity conducted in parallel: promotion by government agencies and trade bodies that represent industry sectors and marketing by individual companies that advertise to create awareness and differentiation. This duplication and lack of coordination leads to mixed messages, less than crisp brand positioning statements and wasted resources.

Actions

We need to fundamentally change the current state of affairs and this can be achieved by introducing a coordinated marketing effort for each initiative across both public sector trade bodies and individual industry stakeholders. With the vast number of overseas trade agencies, tourism, hospitality and airline partners, a single umbrella marketing campaign, overseen by MOH, would be far more successful. The relevant ministries and agencies, MOH, MHTC, MOTOUR, MITI and MATRADE will work together with private entities such as pharmaceutical companies, health service providers and med tech companies to achieve this goal. In addition to creating more tailored messages this coordinated approach will permit this sectors to invest in non-traditional media such as the Internet and viral marketing.

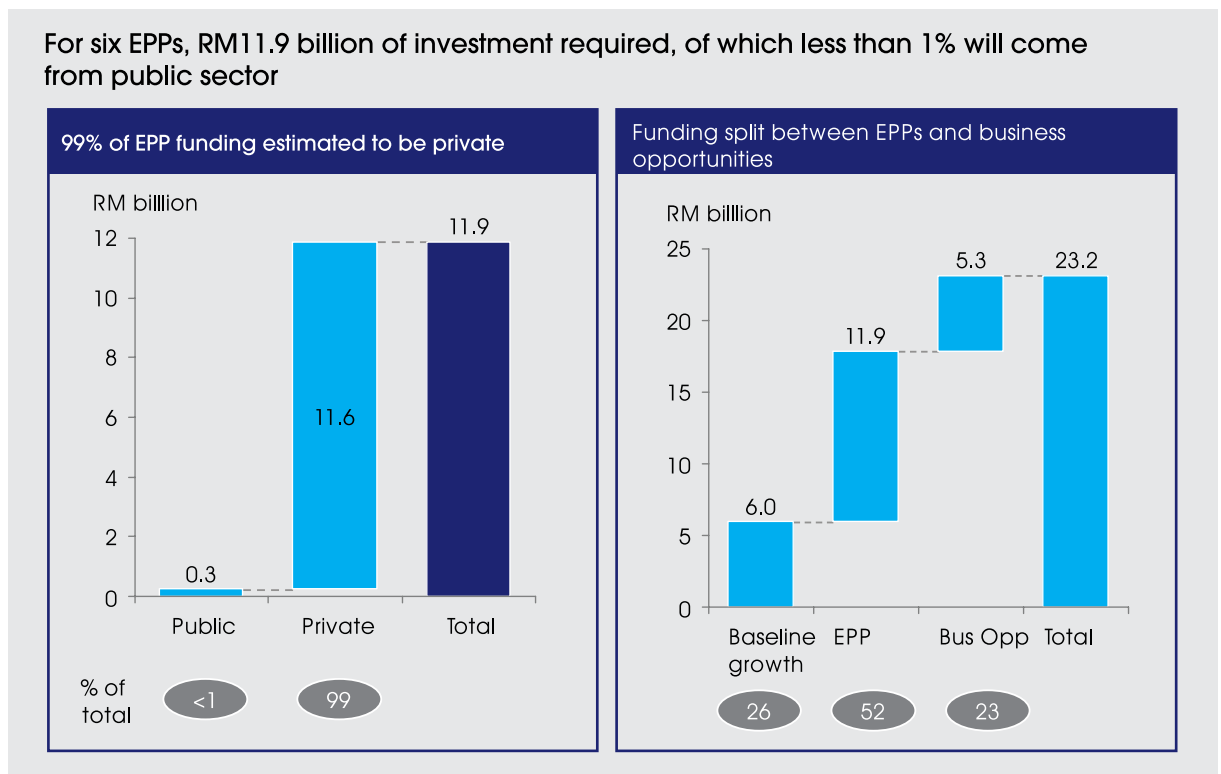
FUNDING

Given our ambitious target to grow the healthcare industry and treble its contribution to GNI from RM15.2 billion in 2009 to RM50.5 billion by 2020, a significant amount of investment will be needed.

As shown in *Exhibit 16-16*, the healthcare industry will require RM23.2 billion cumulatively from 2011 to 2020 to fund growth. Notably, we estimate that less than one percent of the investment required for EPPs will be public, while the remaining 99 percent will be funded by the private sector. Likewise, total investment required is less than one percent from public sources.

In addition, the vast majority of the funds (99 percent) will be for capital expenditure, in order to build longer-term capabilities for Malaysia’s healthcare industry; operating expenses will account for only one percent of the required funds.

Exhibit 16-16



The predominance of private investment for healthcare industry growth is in line with the paradigm shift from healthcare as a social service and consumer of wealth to healthcare becoming a private sector-driven engine for economic growth.

The high percentage of capital expenditure versus operating expense is indicative of the aim of these investments to lay the groundwork for growth beyond 2020.

The six EPPs and the two business opportunities are expected to be catalytic projects that will jump-start and drive growth within the healthcare industry. In order to successfully implement these eight initiatives, a total of RM17.2 billion additional investment will be required between 2011 and 2020 and is forecasted to deliver RM35.3 billion of annual GNI impact by 2020.

Baseline growth

A total of RM6.0 billion of investment will be required to fund baseline growth, with an estimated annual GNI value of RM13.6 billion by 2020. Of the investments, RM3.2 billion is estimated to be required for the baseline growth of the med tech sub-sector and RM2.8 billion is estimated to be required for the organic growth of the entire healthcare services sub-sector.

Looking at the healthcare industry as a whole and taking into account the baseline growth requirements, funding needs totalling RM23.2 billion are spread across 2010 to 2020. Peaks are to be expected in 2011, 2017 and 2019 due to the significant ramp-up of generics export capacity. Investment required for the next three years will account for 30 percent of the total funding needs from 2010 to 2012, with RM3.2 billion, RM0.9 billion and RM1.1 billion required for 2011, 2012 and 2013, respectively.

GOVERNANCE AND DELIVERY

Successful implementation of the various projects and opportunities hinges on ownership and accountability. To ensure proper ownership and accountability, a dedicated owner has been identified for each. In addition, a detailed delivery plan consisting of implementation details, KPIs and targets as well as a risk and mitigation plan has been developed for each for the EPPs. An overview of the agencies in charge of the various initiatives is shown in *Table 16-1*.

Table 16-1

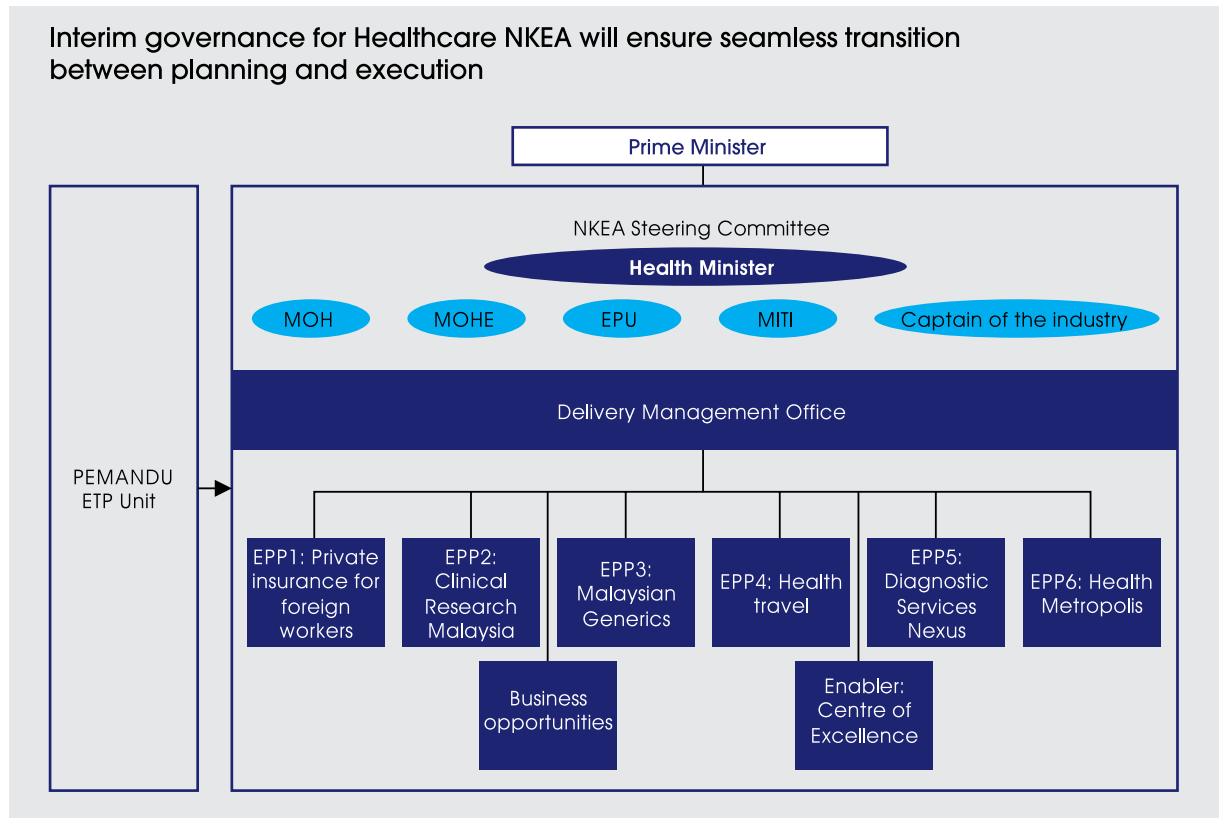
| EPP | Lead initiative owners | Other key agencies, companies and organisations |
|---|-------------------------------------|--|
| EPP 1: Mandating private health insurance for foreign workers | Ministry of Health | Ministry of Human Resources Persatuan Insurans Am Malaysia (PIAM) Ministry of Home Affairs |
| EPP 2: Creating a supportive ecosystem to grow clinical research | Ministry of Health | Ministry of Higher Education Clinical research organisations Pharmaceutical companies |
| EPP 3: Pursuing generics export opportunities | Ministry of Health | Ministry of International Trade and Industry Malaysia External Trade Development Corporation Malaysia Investment Development Authority (MIDA) Intellectual Property Corporation of Malaysia Pharmaceutical companies |
| EPP 4: Reinvigorating health travel through better customer experience, proactive alliances and niche marketing | Malaysian Healthcare Travel Council | Ministry of Higher Education Tourism Malaysia MATRADE Immigration Department Malaysia Medical Council (MMC) Talent Corporation |
| EPP 5: Creating a diagnostic services nexus to achieve scale in telemedicine for eventual international outsourcing | Ministry of Health | Ministry of Higher Education Telecommunication service providers Association of Private Hospitals of Malaysia (APHM) |
| EPP 6: Developing a health metropolis: A world-class campus for healthcare and bioscience | Ministry of Higher Education | Private sector investor University of Malaya (UM) Ministry of Health Economic Planning Unit Ministry of Finance Ministry of International Trade and Industry |

Effective Governance Model

To ensure effective implementation of the EPPs and a seamless transition between planning and execution, a governance model will be established in two phases. An interim structure will oversee the immediate implementation of the EPPs in the near future and a steady-state structure will take over thereafter to continue developing Malaysia’s healthcare industry.

Exhibit 16-17 presents the interim structure, in which a steering committee chaired by the Minister of Health and comprising MOH, MOHE, EPU, MITI and private sector leaders will oversee the Delivery Management Office (DMO) and private sector champions. The DMO will be formed from a dedicated team of MOH staff. It will work hand-in-hand with private sector champions to drive day-to-day implementation of the EPPs.

Exhibit 16-17



The MOH will establish a Healthcare Industry Development Corporation (HIDC) reporting directly to the Minister of Health. This new organisation which will be set up in stages in the coming years, will be responsible for developing and driving the economic agenda for Malaysian healthcare. Headed by a CEO, the HIDC will comprise three divisions that drive overall sub-sector development (pharma, med tech and services) and bring the EPPs and business opportunities to fruition. The HIDC will also house two corporatised entities (MHTC and CRM) that will spearhead growth in healthcare tourism and clinical research.

Extraordinary Results Lie Ahead

The six identified EPPs and two business opportunities represent a departure from the past. We are moving away from a traditional product-focused strategy that serves just the needs of the domestic market. Instead we are navigating towards a broader product, services and customer value proposition that will enable Malaysia to compete more actively in the global market and create differentiated solutions for the local market.

By 2020, we envision Malaysia healthcare as a robust wealth-creating industry, delivering GNI impact in addition to providing quality care to the people. The impact of these EPPs and business opportunities will be RM35 billion of incremental GNI and approximately 181,000 new jobs. Malaysia will be able to provide higher standards of clinical care for the *rakyat* and will continue to move from strength to strength.

| Summary of Healthcare NKEA | |
|---|-----------------------|
| • Incremental GNI impact in 2020 | RM35.3 billion |
| • Additional jobs in 2020 | 181,000 |
| <ul style="list-style-type: none"> • Critical targets / milestones within 6 to 12 months <ul style="list-style-type: none"> • Amendment to Workers Compensation Act to enforce health insurance for all foreign workers • Corporatisation of Clinical Research Centre - creation of One-Stop Centre dedicated to enabling private sector clinical trials • Corporatisation of the Malaysia Healthcare Travel Council • Appointment of pharmaceutical and med tech advisors and health travel ambassador • Ground breaking for construction of UM Medical Metropolis | |