KPMG

Digital Health in Vietnam

Market Intelligence Report

Department for International Trade

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Department for International Trade report prepared by KPMG and Oxford University Clinical Research Unit

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Welcome to the *Digital health in Vietnam – Market intelligence* report!

In an age of growing challenges from non-communicable diseases, and emerging threats from infectious diseases such as COVID-19, digital health has the potential to offer new solutions and alleviate pressure on overstretched health systems. Digital health technology can empower patients to actively participate in their care, improve clinical outcomes and enhance operational efficiency.

Innovation and technology have touched many aspects of life in Vietnam and healthcare is no exception. In a concerted effort to embrace Industry 4.0, the Vietnamese government has committed to a national agenda that seeks to harness the potential of digital solutions across the health system. This has set a solid foundation for digital transformation in Vietnam.

Vietnam and the UK share many of the same aspirations. We seek to utilise digital innovation to expand equitable access to quality care, in line with United Nations Sustainable Development Goal 3, on good health and wellbeing. At the early stage of digital transformation, Vietnam has plenty of opportunities for innovative solutions from the UK. In this comprehensive guide, we provide insight into current market opportunities across health informatics technology, telemedicine, AI and Big Data. The report also explores the future direction of digital healthcare transformation in Vietnam and potential challenges facing new entrants to the market.

The UK and Vietnam have a rich history of collaboration, and this year we celebrate 10 years of strategic partnership. I am delighted to support UK organisations interested in entering the Vietnamese market and I wish you every success in exploring long-term partnerships in Vietnam that will further strengthen our bilateral healthcare ties.

For more information on these opportunities and how we can help you do business in Vietnam, please reach out to our team.

Emily Hamblin
Department for International Trade in Vietnam
December, 2020

Foreword

Over the past two decades, Vietnam has achieved laudable improvements in key quality of life metrics such as life expectancy, infant mortality, and access to affordable medicines. This success is the result of the government's concerted effort to modernise the health system and expand access to affordable care. At the time of writing, Vietnam has extended Universal Health Coverage (UHC) to 90% of the population, and targets to reach 95% by 2025. This coverage ratio leads its regional peer markets. The country nevertheless still has a relatively high out-of-pocket expense ratio while spending the highest amount of GDP on healthcare. It is therefore likely that if Vietnam hopes to continue to expand access to quality care and maintain sustainable health financing, the health system will need to find a way to provide more services, while expending fewer resources per patient.

Digital health is one answer to achieving scale of access while improving clinical outcomes and maintaining costs. To do this, the government needs to expand market access and encourage international business and clinical partnerships.

UK companies have many of the missing digital pieces Vietnam needs to accelerate progress towards its healthcare development goals. At the same time, digital health companies that understand Vietnam's unique population health challenges and can provide collaborative solutions will gain access to one of Asia's fastest growing healthcare markets. Through this market access, companies can achieve early-entrant advantage and meaningfully help Vietnam's financial and physical burden of disease.

This document is intended as an introductory guide to Vietnam's digital health market. Please do not hesitate to reach out to its authors or Department for International Trade as you begin your exploration.

Enjoy the read

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Overview of Vietnam's economy

Macroeconomic indicators

Population

Population overview

At the time of writing, Vietnam has a population of 96.5 million, making it the 15th most populous country in the world, 8th in Asia and 3rd in Southeast Asia (behind Indonesia and Philippines)[1]. Despite the addition of around 1 million people per annum, the rate of Vietnam's population growth has slowed gradually, from approximately 2% per annum in the early 1990s to around 1.1% throughout the 2010s. By 2024, the county's population growth rate is expected to slow to 0.8% per annum, reaching a total population of 101.1 million[2].

As Vietnam's birth-rate declines, its average population age will continue to rise. Currently, Vietnam is enjoying a so-called "golden structure" in its age demographics, with 70% of the population aged 15 to 64 years. This age structure has been a key driver in the country's recent economic development and will continue to push its transition from a largely agrarian economy to one led by export manufacturing and domestic consumption. After 2030, Vietnam will however begin to age rapidly, with the over-65 years of age cohort growing at an anticipated 5.3% per annum. This could drive the growth of the current "retirement age" population distribution 300% by 2050, potentially straining health and related resources.

Implications to digital health

Indicator	Issue	Implication
Golden population structure	Among the working-age population, nearly half are under 34 years of age, which is favourable for the adoption of innovative science and technology.	Vietnam is well positioned to adopt digital health solutions. For instance, there will be a potentially large addressable market for consumer health electronics in the country.
Ageing population	The golden population structure is also associated with an ageing population. The faster growth rate of the people aged 65 years and above will create a burden on healthcare facilities and demand for care services. This will be particularly acute for elderly-care in the country.	The application of Big Data and AI can bring geriatric care solutions. Vietnam can apply passive sensors and other near-patient monitoring technologies to enable remote care solutions that link an individuals' behaviour to treatment. At the same time, electronic health records will pave the way for more efficient medical information management. Governments and policymakers can utilise relevant population-based data to initiate preventative programs and make decisions at a health-system level. Health workers will be able to deliver healthcare services more effectively, thanks to the availability of historical health records and related training programs. The adoption of remote monitoring and telemedicine of elderly patients will lessen hospital overcrowding by allowing doctors to monitor patients from their homes, and thus freeing hospital resources such as beds and saving administrative costs .

1. World Population Prospects, the 2019 Revision
2. Fitch Solutions

Economic development

Over the last several decades, Vietnam has achieved rapid economic and social development, which has driven the demand for more advanced healthcare services. Beginning in 1986, the Doi Moi reforms initiated a broad-based economic transformation, which opened a largely closed economy to international markets and trade and began a series of 'pro-business' reforms. As a result of these policies, Vietnam achieved high economic growth rates that lifted the country to Emerging Market economic status. This strong economic expansion will likely continue to benefit the country by creating an attractive growth story that will further attract Foreign Direct Investment (FDI) (growing by 13.5% per annum from 2014 to 2019 in terms of registered capital), which in turn will bring much needed technology and knowledge transfer[3]. Vietnam has signed 13 Free Trade Agreements (FTAs) further accelerating inbound FDI. Most notably of which are the ASEAN Free Trade Agreement (AFTA), the Comprehensive and Progressive Agreement of Transpacific Partnership (CPTPP), and more recently the EU Vietnam FTA (EVFTA). These trade agreements are lowering tariffs on many goods including medical equipment and will help position Vietnam as an attractive investment and trade destination. At time of writing, Vietnam is in discussions with the UK on a possible bilateral agreement. Such an agreement would extend similar market access benefits to UK-based organisations.

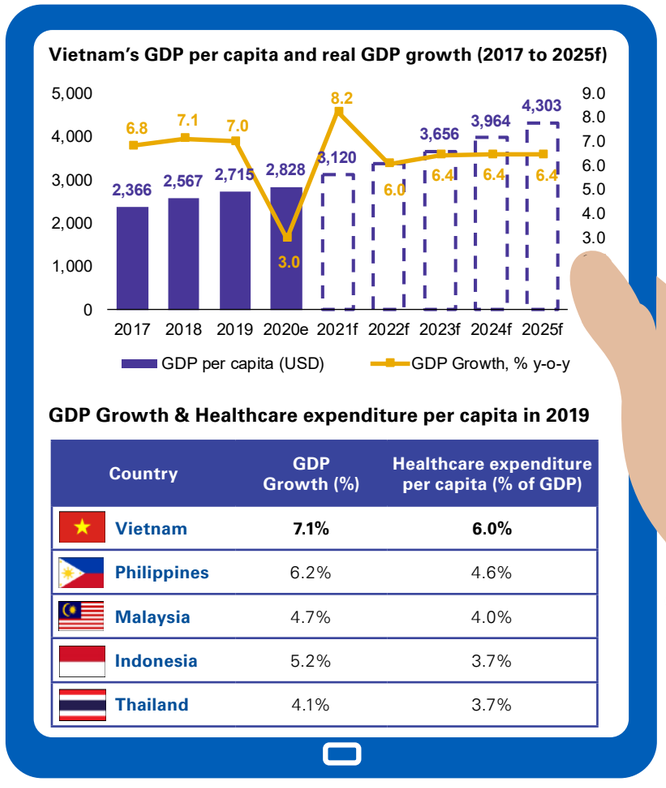
Growth in FDI is driving GDP per capita and the rapid expansion of an urban middle class. This middle class is expected to account for up to half of the total population by 2035[4] and will, according to the World Bank, drive growth in per capita healthcare expenditures. This expansion in healthcare expenditures will be more apparent in higher-end care and in urban areas, which could expand rural healthcare access inequalities.

3. The Ministry of Planning and Investment
4. Fitch Solutions

Implications to digital health

Indicator	Issue	Implication
Increased living standard	An increase in living standards and healthcare expenditures will likely expand Vietnam's access to digital health, which can be provided at a lower incremental cost than traditional models of care.	Some of the most notable examples include **consumer health electronics** (e.g. hi-tech wearables) and **telehealth** (e.g. remote health diagnostics, monitoring, intervention, and education). The application of telehealth will play an important role in supporting the diagnosis and treatment of non-communicable diseases across the population. However, this poses a challenge for the lower income groups with less access to technological advances, particularly those in remote, underdeveloped, or rural areas. To attain universal health coverage for the entire population, further government support and policy incentives will be required.

Vietnam's GDP per capita and real GDP growth from 2017 to 2025f



GDP Growth & Healthcare expenditure per capita in 2019

Country	GDP Growth (%)	Healthcare expenditure per capita (% of GDP)
Vietnam	**7.1%**	**6.0%**
Philippines	6.2%	4.6%
Malaysia	4.7%	4.0%
Indonesia	5.2%	3.7%
Thailand	4.1%	3.7%

Source: Fitch Solutions

Vietnam's healthcare sector overview

Health status in Vietnam

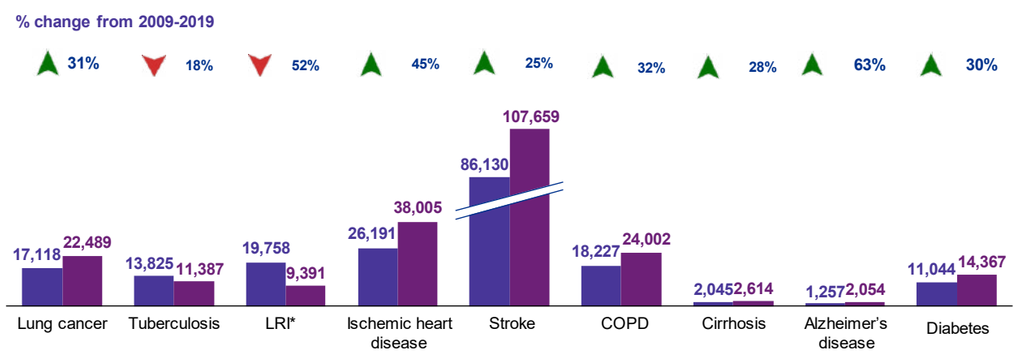
The World Health Organization (WHO) recently estimated that non-communicable diseases now account for 77% of all death and disability in Vietnam. Of these, cardiovascular disease and cancer are the two most common contributors to premature death and loss in disability-adjusted life years (DALYs), followed by diabetes/chronic kidney disease as the 3rd most common cause of death and 4th cause of DALYs. Many of these deaths can be prevented with improved diagnosis, monitoring, and tech-enabled early-stage interventions.

There is increasing recognition of the important interactions between non-communicable diseases co-existing with infectious diseases, particularly cardiovascular diseases. For example, hepatitis C Virus infection is associated with an increased risk of cardiovascular disease and represents a global burden of the loss of 1.5 million DALYs. This tragic burden falls disproportionately on low-income and middle-income countries. Risk of type 2 diabetes mellitus is increased by almost 70% in Hepatitis-C infected patients. Similarly, in people living with HIV, increased risk of cardiovascular disease has been noted. Whilst there is limited data on co-existing cardiovascular and infectious diseases in Vietnam, the high rates of both means that improving diagnosis and management of these is likely to have a particularly significant impact in Vietnam.

Implications to digital health

Indicator	Issue	Implication
NCD impact on health	The nature of ill health in Vietnam is changing from communicable to non-communicable diseases. This trend is expected to continue, which will create a greater need for long-term and coordinated healthcare services that cater to chronic diseases. Digital health is well-positioned to help address these challenges.	**Telehealth** can promote a healthy lifestyle and encourage preventative measures through patient risk-factor monitoring in pre-disease stages. The utilisation of **Big Data and AI in digital health** allows for real-time, population-based, forward-looking data that can help avoid or mitigate non-communicable diseases while enhancing care delivery.

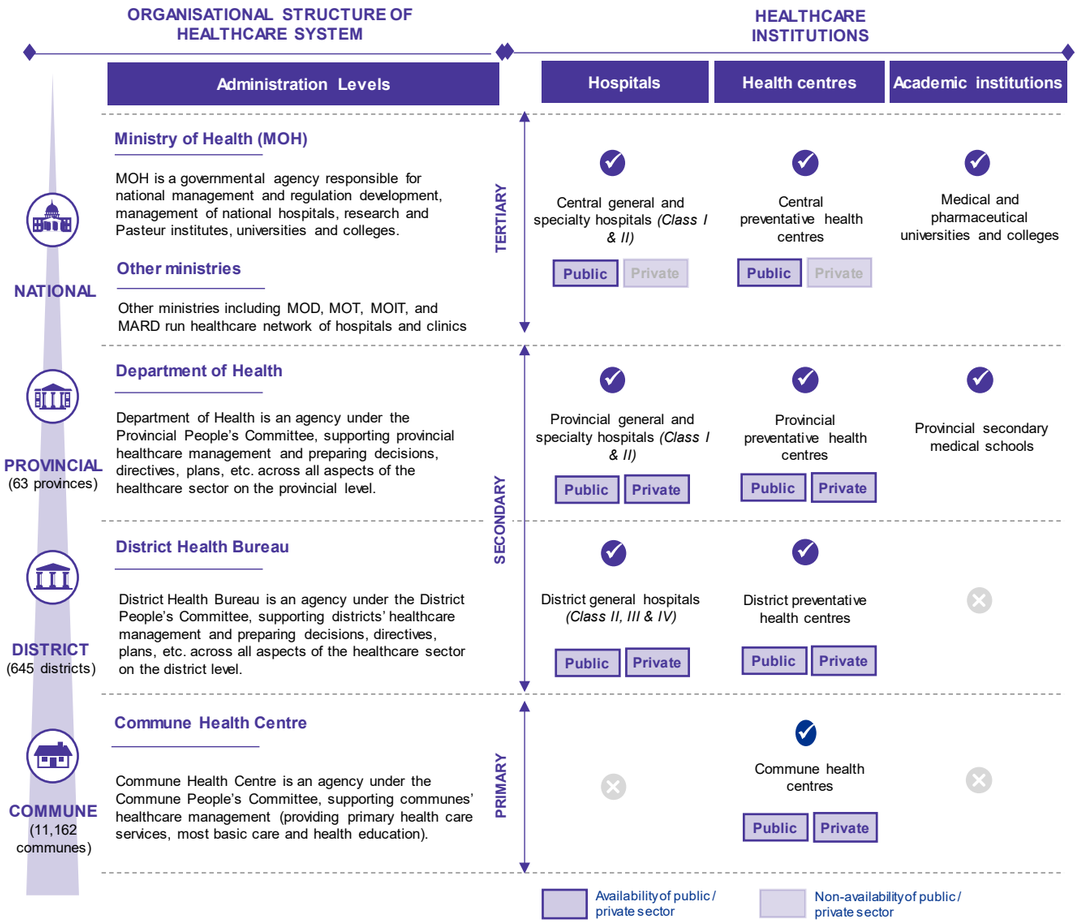
Top causes of death in 2019 & percentage change from 2009 - 2019



Source: World Health Organization

Healthcare structure in Vietnam

Healthcare system



Source: The Ministry of Health, World Health Organization

Hospital capacity

Hospital numbers

Vietnam's public sector has a decentralised hospital system classified into four groups corresponding to four administrative levels. At the central level, specialised and general hospitals provide secondary and tertiary care, and are active in research, and function as teaching hospitals. At the provincial or city level, hospitals and medical centres mostly provide secondary and tertiary care, combined with outpatient services. Each province is divided into roughly 20 districts. District health centres offer primary and some secondary care services. Finally, at the communal level, Communal Health Centres (CHCs) offer primary and preventative health services. Communal healthcare centres are generally the first point of contact for much of the population, especially in rural areas.

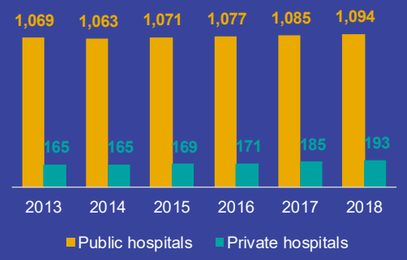
The Vietnamese private healthcare sector has started to play an important role as a provider of care in major cities. The percentage of private hospitals is projected to increase rapidly in the coming years as domestic corporations develop hospital groups and clinic chains across the country. Some of the examples include Hoan My Medical Corporation, and Vinmec Hospital Network of Vingroup. Main drivers behind growth are:

01 Many public hospitals lack needed infrastructure investment;

02 Rising personal income allows patients to increase out-of-pocket payments for private sector and/or premium healthcare services and

03 FDI encouragement policies allows foreign investors to build wholly foreign-owned hospitals.

Number of hospitals in Vietnam (2013-2018)



CAGR	'13-19
Total hospital numbers	1.3%
Public hospitals	1.2%
Private hospitals	1.6%

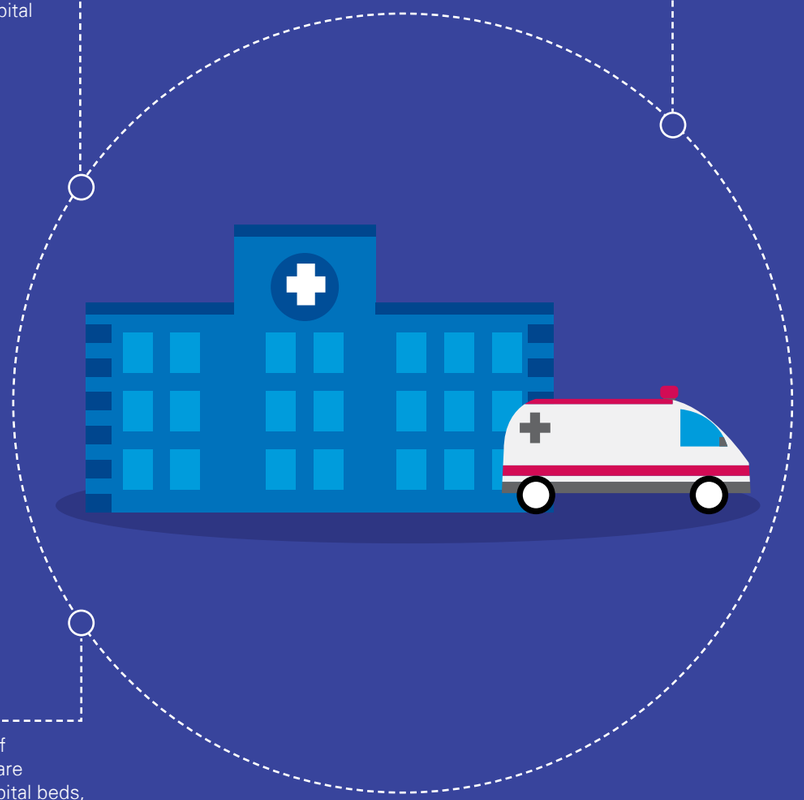
Source: Fitch Solutions, World Health Organization, General Statistics Office of Vietnam

Hospital beds

Over the past five years, according to Fitch Solutions and the General Statistics Office of Vietnam, approximately 6,000 hospital beds per annum have been added to the healthcare system, corresponding to a CAGR of 2.5% (from 2013 to 2018). Of these additional hospital beds, nearly 16% are at national level, while 43% and 41% are added to provincial and district levels, respectively. This demonstrates the effort of the government in alleviating the overloaded capacity of hospitals across Vietnam.

However, the proportion of private hospital beds remains low (5%), mainly due to the marginal volume of private hospitals. Nevertheless, the government has indicated its intent to grow the ratio of private hospital beds to 20% of total hospital beds through public and private partnerships.

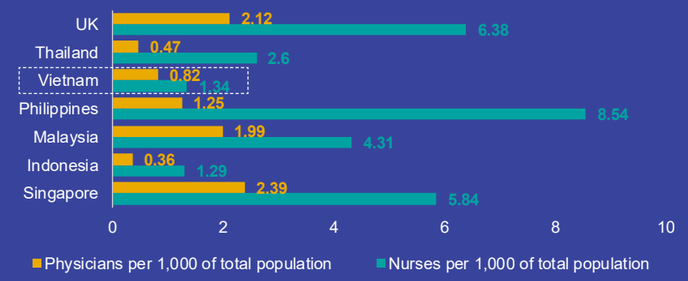
In terms of the number of hospital beds per capita, there are large regional variations. More specifically, Vietnam's North Central and Central Highlands have far fewer hospital beds per capita compared to other regions. Recently, the shortage of hospital beds has increased: bed to patient occupancy rates has reached 120-160% in some public hospitals. This increase is often most pronounced in central hospitals in major cities.



Healthcare professionals

Vietnam ranks on the lower end of countries with regards to trained Healthcare Practitioners (HCPs) per capita. This shortage is particularly acute in specialised care, such as cancer, palliative care, geriatrics, and mental health. The distribution of health workers between urban and remote areas is also a challenge, with higher concentrations in urban areas.

When compared with regional peer markets, one can see Vietnam's shortages are particularly acute in trained nurses. As of 2018, there are 77,995 physicians and 128,386 nurses in the country, which is relatively low compared to the total population (around 1 physician and 1.3 nurses per 1,000 residents).



Source: Fitch Solutions

Indicator	Issue	Implication
Hospital capacity and professional staffing	Congested and overcrowded hospitals remain a challenging issue in Vietnam. This strains resources in central and provincial hospitals and creates inefficiencies at the district and community levels.	Digital health can help address capacity constraints faced by public hospitals By introducing solutions such as **telehealth and electronic health records**, more patients, even in rural settings, can gain access to needed healthcare, thus also improving hospital efficiency and reducing patient crowds. From a health-economics viewpoint, telehealth and electronic health records can also help healthcare providers cut cost by reducing paperwork, improving safety, eliminating duplicative tests, and improving health outcomes. The latter drives economic benefit by lowering readmittance through long-term remote monitoring. **AI and wearable tech** have the potential to improve quality of care while reducing cost of care in Vietnam. By extending patient access to AI-enabled wearable devices, healthcare professionals can gain a real-time view of patient conditions and make more accurate and faster diagnoses. Layering AI and Big Data into the monitoring and diagnosis process will give clinicians the ability to analyse multiple patient data sets simultaneously to identify irregularities and take early-stage preventative action when interventions are more effective and cheaper.