



The economics of healthy and active ageing series  
New evidence for the Western Pacific Region

**Viet Nam**

**HOW WILL POPULATION  
AGEING AFFECT HEALTH  
EXPENDITURE TRENDS  
IN VIET NAM  
AND WHAT ARE THE  
IMPLICATIONS IF PEOPLE  
AGE IN GOOD HEALTH?**

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# HOW WILL POPULATION AGEING AFFECT HEALTH EXPENDITURE TRENDS IN VIET NAM AND WHAT ARE THE IMPLICATIONS IF PEOPLE AGE IN GOOD HEALTH?



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## Acronyms

<b>GDP</b>	gross domestic product
<b>HALE</b>	health-adjusted life expectancy
<b>NCD</b>	non-communicable disease
<b>OECD</b>	Organisation for Economic Co-operation and Development
<b>SHI</b>	social health insurance
<b>THE</b>	total health expenditure
<b>WHO</b>	World Health Organization

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***“Changes in people’s needs due to population age-mix shifts have consequences”***

## Introduction

Countries around the world are experiencing population ageing in some form, with the share of older people in the population increasing (UN, 2019). This is driven by rising life expectancy, which results from declines in infant mortality, fertility and premature death. Low and middle-income countries are experiencing some of the most rapid rates of increase in the number of people aged 65 years and older, while high-income countries are seeing a substantial rise in the number of the so-called ‘oldest old’ (people aged 80 years and above).

In the World Health Organization (WHO) Western Pacific Region, home to 1.9 billion people, substantial diversity exists in terms of the population age-mix. While 28.4% of the population in Japan in 2020 is estimated to be over 65 years of age, this falls to below 4% in other countries, including Papua New Guinea, Solomon Islands and Vanuatu. Overall, the share of the population over 65 years in the region is expected to more than double from 12.4% in 2020 to 28.4% in 2060, while the proportion of people aged over 80 years will see a four-fold increase from 2.3% to 9.6% over the same period (UN, 2019).

Changes in people’s needs due to population age-mix shifts have consequences for health and long-term care systems. Data from most countries show that, on average, older people have higher health expenditures than younger people. This often leads to the assumption that health expenditure growth will accelerate as older people make up an increasing share of the population, potentially challenging the sustainability of health systems. Yet, while providing appropriate health and social care to an increasing number of older persons does place additional pressure on the health system, (calendar) ageing is not the main driver of expenditure growth. Many argue instead that factors such as organization of care, technology, price regulation, proximity to death and health status are more important drivers of health care spending.

In this note we assess the role of population ageing as a determinant of future health expenditure growth in Viet Nam. We also consider how ageing in better or worse health will impact these projections. Data and methods for the projections used in this report are outlined in the annex.

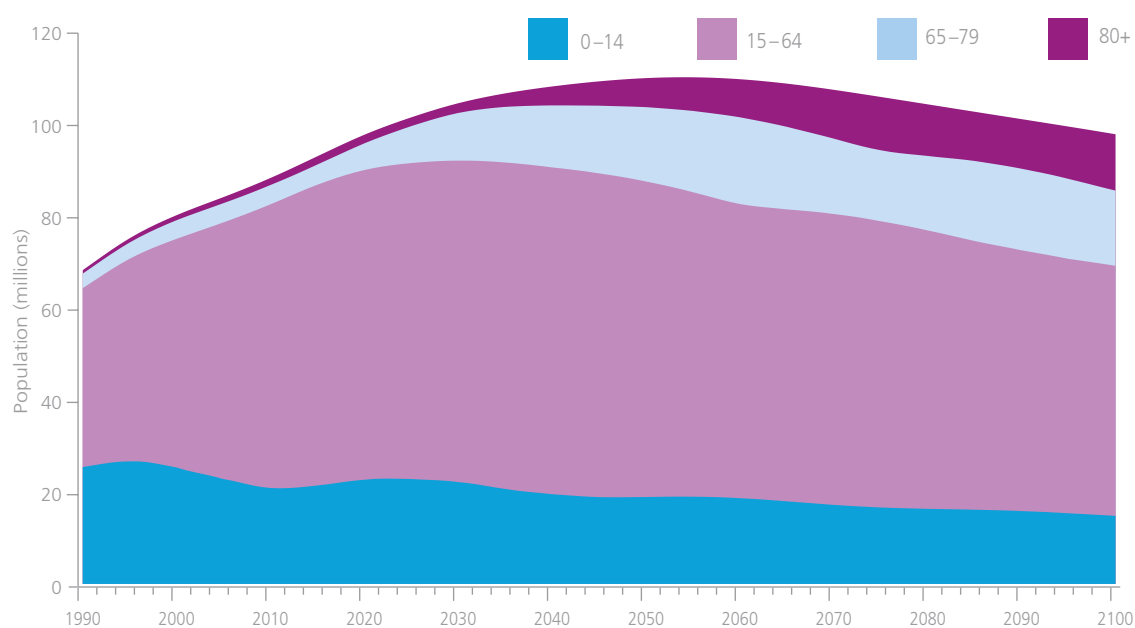
## Population ageing, health and health spending in Viet Nam

2020 Population	2020 Share of the population 65 years and above	2017 Total health expenditure per capita (USD)	2017 Total health expenditure as a share of GDP	2017 Life expectancy (years at birth)	2016 Healthy life expectancy (years at birth)
97.3 million	7.9%	130	5.9%	75.2	67.5

### *Viet Nam has a relatively young population, but is rapidly ageing*

Viet Nam’s population is expected to grow by more than 12% over the next four decades, increasing from 97.3 million in 2020 to 109.4 million in 2060. In 2020, 7.9% of the population was older than 65 years of age, with 1.9% over 80 years of age – up from 4.7% and <1% respectively in 1960 (Figure 1). These shares will continue to rise rapidly and by 2060 an estimated 24.7% of the population will be over 65 years of age and 7.5% will be in the oldest age groups (UN, 2019). Owing to the increasing number of older people, the economic old-age dependency ratio (ratio of population aged over 65 to population aged 20–64 years) is expected to almost quadruple from 12.6% in 2020 to 47% in 2060.

**Figure 1.** Population age-mix in Viet Nam, historical and projections, 1990–2100



Source: UN, 2019.



## ***People in Viet Nam are living for longer than ever before, but the burden of disease from non-communicable diseases is growing***

Life expectancy at birth in Viet Nam has increased by more than 16 years since 1960, reaching 75.2 years in 2017 (79.4 years for women and 71.1 years for men) (WHO, 2020; World Bank, 2020). These gains in life expectancy have been driven by a decline in deaths from infectious diseases, congenital defects, neonatal disorders and respiratory infections (Hoi et al., 2009; IHME, 2020), which has resulted partly from effective public health measures and improvements in health care treatments and access. A woman of 60 years of age in Viet Nam in 2016 could expect to live for another 25.1 years, with 18.8 of these years spent in good health; the corresponding figures for men were 19.7 years and 15.2 years respectively (WHO, 2020). The gap between life expectancy and health-adjusted life expectancy (HALE) at 60 years has remained stable since 2000. The burden of disease in Viet Nam over the past three decades has shifted from infectious diseases to non-communicable diseases (NCDs), with premature deaths from cardiovascular diseases, lung cancer, diabetes and chronic obstructive pulmonary diseases rising substantially (Hoi et al., 2009; IHME, 2020). The growing disease burden from NCDs is likely linked to the rising prevalence of risk factors including smoking, overweight and obesity, high blood pressure and alcohol use (IHME, 2020).

## ***Per person public health spending in Viet Nam has increased substantially in the past two decades***

Viet Nam began to introduce social health insurance (SHI) in 1992, with The Health Insurance Law of 2009 creating a national SHI programme. SHI now covers approximately 87% of the population, with participation mandatory for formal-sector workers, and the government subsidizing enrolment of vulnerable groups, including the poor, ethnic minorities, children under 6 years and people over the age of 80 (Teo et al., 2019; WHO, 2019). Public health expenditure accounted for 49% of current health expenditure in 2017, with direct private spending in the form of out-of-pocket payments accounting for 45%, and development assistance and pre-paid private expenditure the remainder (WHO, 2020). Total health spending as a share of gross domestic product (GDP) was 5.9% in 2017, a slight increase from 5.0% in 2000, and equating to per person spending of VND 2.8 million (USD 130). These spending levels are close to other countries with a similar level of GDP (WHO, 2020). Between 2000 and 2016, public health spending per capita in Viet Nam trebled (adjusting for inflation) and World Bank estimates suggest that public spending on health has increased by 1.7% for every 1.0% increase in GDP per capita (Teo et al., 2019).

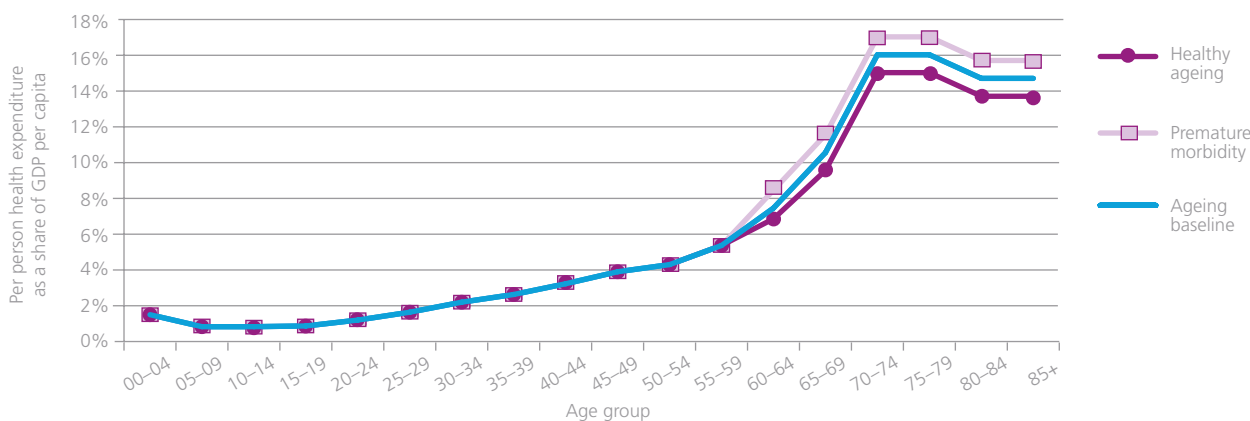


## How will population ageing in Viet Nam affect health expenditure trends?

### Health expenditures in Viet Nam generally increase with age, before falling for the oldest age groups

Using data on health expenditures for Viet Nam’s SHI scheme in 2017, we are able to assess the relationship between calendar age and per person health spending (Figure 2, solid blue line). It should be emphasized that these data are a proxy for health spending by age and do not represent the whole population or all public health expenditure, but are the only data available for this note. As expected, health expenditures are relatively high at birth until 1 year of age. At about 40 years of age, health expenditures start to steadily increase and continue to rise until 79 years of age, subsequently declining slightly for the oldest age groups (80 years and over). Per person health spending for an average 75-year-old is more than 9 times higher than for an average 20-year-old. This per person expenditure pattern for people enrolled in SHI (87% of the population) is common across countries.

**Figure 2.** Per person health expenditure by age group (baseline and two alternative scenarios), 2017, Viet Nam



Source: World Bank, 2020.

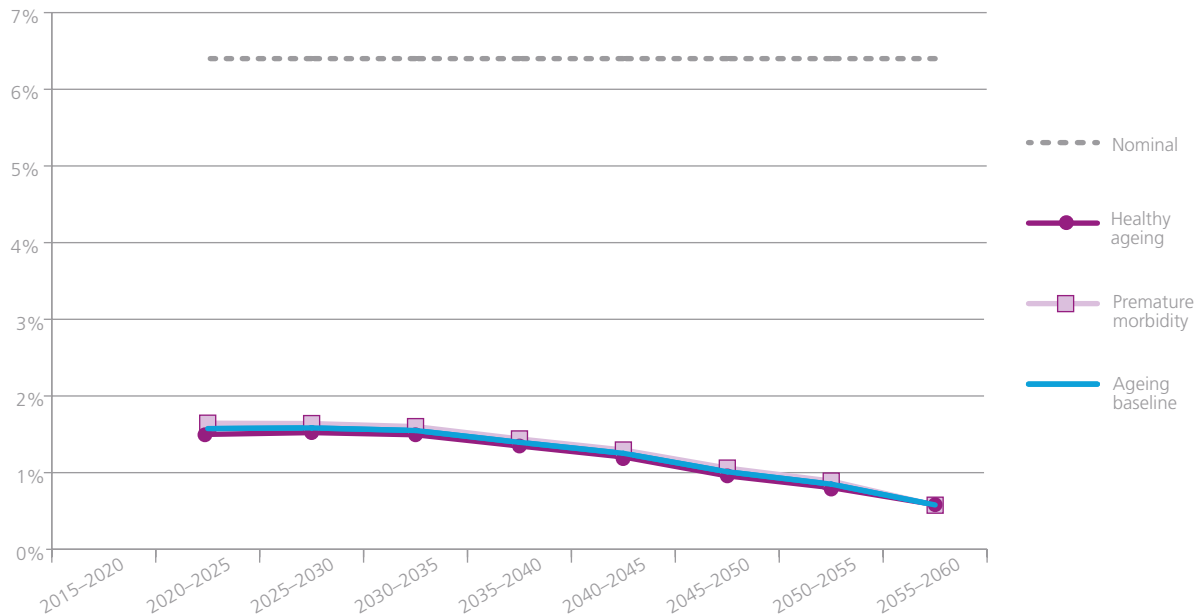
### Population ageing in Viet Nam is expected to contribute modestly to growth in per person health spending through 2060

Using 2017 per person SHI spending levels by age (Figure 2, solid blue line), we project the contribution of population ageing to public health care expenditure growth through 2060 for Viet Nam (Figure 3). Our projections indicate that the additional growth in average annual per person health care spending attributable to population ageing is expected to peak at 1.58 percentage points per year between 2025 and 2030, before steadily declining to 0.57 percentage points per year in 2060 (Figure 3).

To place this in context, the average nominal per person annual growth rate in health expenditure due to all causes including population ageing was approximately 6.4% in Viet Nam from 2010–2017 (shown in Figure 3, grey dashed line) (WHO, 2020). From this, one could infer that population ageing in Viet Nam accounts for about one-quarter of per person health spending growth, with the remaining growth driven by prices, volume of care and technology and an expansion of benefits and improvements in quality of care.



**Figure 3.** Projected additional growth in per person health expenditure attributable to population ageing, Viet Nam, 2015–2060



Source: Authors' calculations.

**Population ageing on its own is expected to slowly (and only moderately) increase public health spending as a share of the economy between now and 2060**

The projections above suggest that public health expenditure as a share of GDP will increase by 1.84 percentage points over the next four decades as a result of population ageing. This is not an insignificant additional share of the economy; however, it is important to note that this increase will occur slowly. Over the 40-year period, the average increase in the share of the economy spent on health as a result of population ageing would be about 0.045 percentage points of GDP per year (Figure 4).

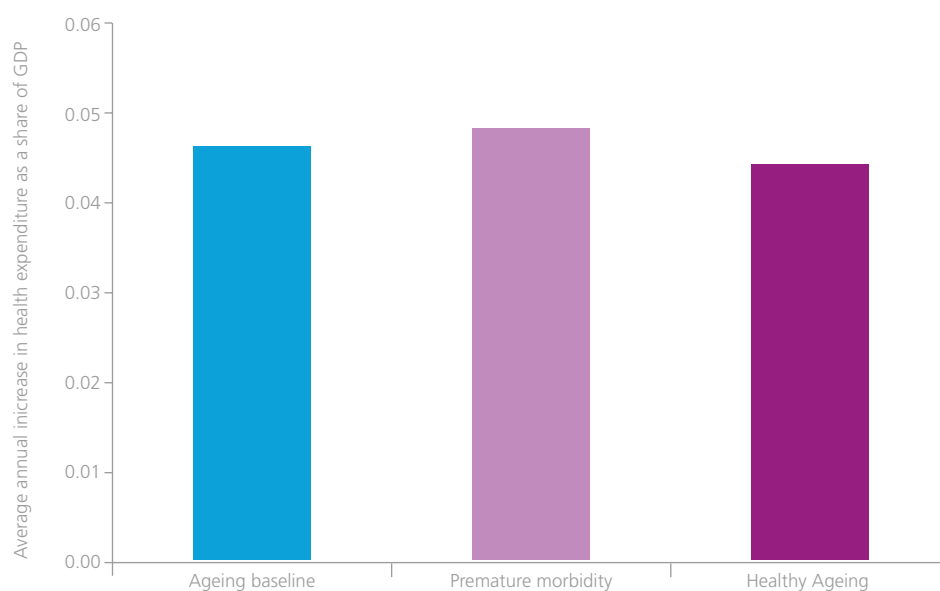
Overall, the estimates suggest that population ageing is not likely to be the primary driver of growth in health spending in Viet Nam in the coming decades.

**Health spending would make up a comparatively lower share of GDP in 2060 if people age in better health**

In two hypothetical scenarios we project how future public health expenditure growth will differ depending on whether people age in better or worse health than predicted, leading to lower or higher per capita health expenditures respectively than currently (see annex for details).

Under a *premature morbidity* scenario where people age in worse health, the additional growth in average annual per person spending attributable to population ageing would peak at 1.64 percentage points per year between 2020 and 2025, before declining to 0.58 percentage points per year in 2060 (Figure 3, line with square). This scenario would see population ageing increase health expenditure as a share of GDP by 1.93 percentage points between 2020 and 2060. This represents an increase of 0.09 percentage points above the projection using actual baseline health expenditures. Over the 40-year period, the average increase in the share of the economy spent on health as a result of population ageing under a premature morbidity scenario would be just under 0.05 percentage points per year (Figure 4).

**Figure 4.** Average annual increase in public health expenditures as a share of GDP between 2020 and 2060 in Viet Nam as a result of population ageing under current health expenditure by age patterns (baseline) and healthy ageing and premature morbidity scenarios



Source: Authors' calculations.

Under a *healthy ageing* scenario where people age in better health, the additional growth in average annual per person spending attributable to population ageing would peak at 1.52 percentage points per year between 2025 and 2030, before declining to 0.58 percentage points per year in 2060 (Figure 3). This scenario would see population ageing increase health expenditure as a share of GDP by 1.75 percentage points between 2020 and 2060. This represents a decrease of 0.09 percentage points from the projection using actual baseline health expenditures. Over the 40-year period, the average increase in the share of the economy spent on health as a result of population ageing under a healthy ageing scenario would be just over 0.04 percentage points per year (Figure 4).

Comparing the two scenarios, people ageing in good health in Viet Nam would see total health spending consume 0.18 fewer percentage points of GDP in 2060 than if people age in poor health. While this seems small, based on 2018 GDP estimates, it would amount to savings of USD 440 million in 2060. However, it should be emphasized that these figures are based on hypothetical scenarios and should *not* be viewed as forecasts of savings in future health spending.

## Discussion

Our analysis finds that population ageing in Viet Nam will result in an increase in health expenditures as a share of GDP by 1.84 percentage points between 2020 and 2060, an average increase of just under 0.05 percentage points per year. This suggests that population ageing on its own will not become the primary driver of growth in health expenditure in Viet Nam. Nevertheless, our projections rely on current health expenditure patterns that reflect what has been achieved with the existing levels of health systems capacity and utilization rates. If per capita health spending levels for older age groups were to increase in the future, it is possible that the impact of population ageing in health expenditures may be greater than anticipated.



One factor that may cause health spending by age patterns to change in the future is the health of people at older ages. If the population on average ages in better health than currently, per person health spending for older age groups may be less than they are now. Conversely, people ageing in worse health may cause health expenditures for older age groups to be even higher. In recognition that variations in health status matter for spending by age patterns, we simulate two scenarios assuming healthy or unhealthy population ageing in the future. Our findings indicate that premature morbidity in the population would see health spending as a share of GDP increase by 1.93 percentage points between 2020 and 2060, but healthy ageing would see growth of 1.75 percentage points over the same period. This suggests that policies to promote healthy ageing can help to reduce growth in health spending as a result of population ageing.

## References

- Hoi LV et al. (2009). Remaining life expectancy among older people in a rural area of Vietnam: trends and socioeconomic inequalities during a period of multiple transitions. *BMC Public Health*, 9(471) (doi: 10.1186/1471-2458-9-471).
- IHME (2020). Vietnam health data. Seattle, WA: Institute for Health Metrics and Evaluation, Global Burden of Disease (GBD) Compare. (<http://www.healthdata.org/vietnam>, accessed 4 May 2020).
- Teo HS et al. (2019). The future of health financing in Vietnam: Ensuring sufficiency, efficiency, and sustainability. Washington D.C: World Bank Group. (<http://documents.worldbank.org/curated/en/222831563548465796/pdf/The-Future-of-Health-Financing-in-Vietnam-Ensuring-Sufficiency-Efficiency-and-Sustainability.pdf>, accessed 4 May 2020).
- UN (2019). World Population Prospects 2019. New York: United Nations, Department of Economic and Social Affairs, Population Dynamics, custom data acquired via website (<https://population.un.org/wpp>, accessed 4 May 2020).
- WHO (2019). Health financing in Viet Nam. World Health Organization, Representative Office for Viet Nam (<https://www.who.int/vietnam/health-topics/health-financing>, accessed 4 May 2020).
- WHO (2020). Global Health Expenditure Database. Geneva: World Health Organization (<https://apps.who.int/nha/database>, accessed 4 May 2020).
- Williams GA et al. (2019). Sustainable health financing with an ageing population: Will population ageing lead to uncontrolled health expenditure growth? Copenhagen: WHO European Observatory on Health Systems and Policies, The economics of healthy and active ageing series, Policy Brief 3 (<https://www.euro.who.int/en/about-us/partners/observatory/publications/policy-briefs-and-summaries/sustainable-health-financing-with-an-ageing-population-will-population-ageing-lead-to-uncontrolled-health-expenditure-growth-2019>, accessed 4 May 2020).
- World Bank (2020). Life expectancy at birth, total (years) – Vietnam. Washington, DC: World Bank Data (<https://data.worldbank.org/indicator/SP.DYN.LE00.IN?locations=VN>, accessed 4 May 2020).



## Annex: Data and methods for population ageing projections

Data on health spending by age group were obtained for social health insurance expenditures in 2017, which accounted for 23% of current health expenditure. While these baseline data only capture one-third of health spending, they provide an understanding of the distribution of per person health spending by age group in Viet Nam, which we assume applies to public health expenditure levels in total. For our projections, per person health expenditures by age are divided by per person GDP to calculate health expenditures per capita as a share of GDP per capita by age group. Population projections by age were extracted from the United Nations Department of Economic and Social Affairs population projections website (UN, 2019).

In model 1 (*ageing baseline*), we isolate the contribution of population ageing to future health expenditure growth for Viet Nam, by multiplying per person health expenditures for each age group by the respective age group's population size, with the resulting expenditure across all age groups added together; we then divide by the total population size. This leaves us with a per person health expenditure level which varies from year to year only due to changes in the age-mix of the population.

This model assumes that relative per person spending patterns by age remain constant. That is, any changes in other drivers of health care expenditures, such as prices, technology, quality and volume of care, affect all age groups equally in the future. Doing this allows us to isolate the effects of population ageing on expenditure trends. As a result, if people aged 65 years and over currently spend four times as much on health care as younger age groups, it is assumed that this continues in the future, even if the actual level of spending has increased. Historical data from other countries suggest this is a reasonable assumption (Williams et al., 2019).

In models 2 (*premature morbidity*) and 3 (*healthy ageing*), we adjust the baseline ageing model projections to simulate scenarios where people age in worse and better health respectively than indicated by current expenditure by age group. In model 2, older people age in worse health and therefore have a greater demand for and use a greater volume of health services. We assume that such an increase might occur because of an expansion of morbidity leading to the early onset of care for chronic conditions. In this scenario, we modify actual per person health expenditures in Viet Nam by assuming that health spending for each age group from 60–64 years and above is 1 percentage point higher than indicated by actual baseline expenditure data (Figure 2, line with square).

For model 3, we assume the reverse scenario: people age in better health than now, leading to a delay in onset of chronic disease and disability, and thus a lower utilization of health care services and lower per capita health spending for older age groups than currently. We modify baseline per person health expenditures in Viet Nam by assuming that health spending for each age group from 60–64 years is 1 percentage point lower than indicated by actual baseline expenditure data (Figure 2, line with circle).

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