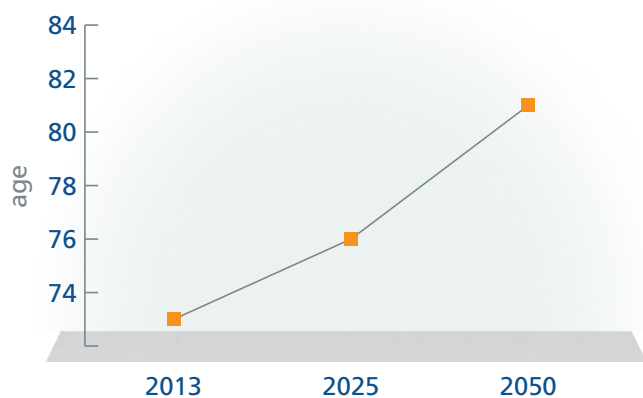


VIETNAM

COUNTRY OVERVIEW

The population of Vietnam in 2013 was 92.4 million. Life expectancy was 73 years and is projected to increase by 11% by 2050, at which time the Vietnamese will be living to an average age of 81 years (Figure 1). The population is expected to grow to 102.4 million by 2025, and reach 111.1 million by 2050 (Figure 2)¹. Population projections by age group show that by the year 2025 and 2050 the number of people aged above 50 years will be 25.9 million and 45.8 million respectively, with women accounting for approximately 50.5%. Most notably, the population aged over 70 years is expected to increase by 46% in just over a decade from 3.5 million in 2013 to 5.2 million in 2025. From 2025 to 2050 the number of individuals in this demographic of the population will increase by 202% to reach 15.87 million, comprising 14% of the total population in Vietnam.

FIGURE 1 Life expectancy in Vietnam



State of osteoporosis/osteopenia

Detecting the prevalence of osteoporosis has been difficult in Vietnam, due in part to the lack of ethnic-specific criteria for diagnosis; in many cases it is based on reference levels from the Western population².

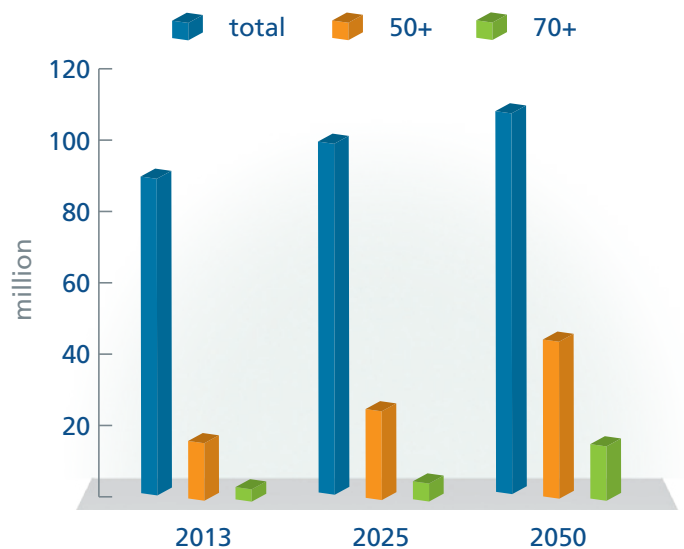
CURRENT

- Population **92.4 million**
- Aged over 50 years **18%**
- Life expectancy **73 years**
- Hip fracture incidence per year **no data**
- Cost per hip fracture **1,000–4,000 USD**
- Number of DXA per million population **< 0.1**
- Fracture liaison services **not implemented**

PROJECTED 2050

- Population **111 million** ↑
- Aged over 50 years **41%** ↑
- Life expectancy **81 years** ↑

FIGURE 2 Population projection for Vietnam



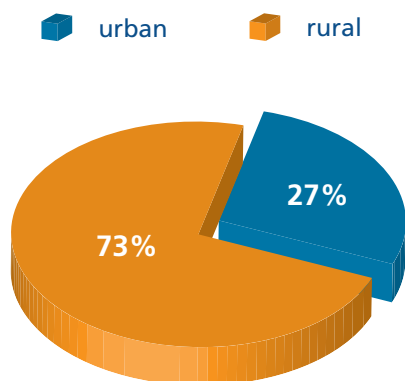
Notwithstanding this lack of data, it is likely that osteoporosis is one of the most common bone diseases in Vietnam. Previous studies estimated that prevalence of osteoporosis in the general population was 4.7%, similar to the prevalence of other common rheumatic diseases such as rheumatoid arthritis and osteoarthritis³. A more recent study on osteoporosis in women and men aged over 50 years reported the disease as highly prevalent and similar to that in developed countries at 30% and 10% respectively². According to the Vietnam Rheumatology Association, assuming that the prevalence of osteoporosis in the general population in Vietnam is similar to the findings of these studies, the number of women with osteoporosis aged 50 years and above would likely be more than 7 million by the year 2050.

Lifestyle

Investigation of urban and rural Northern Vietnamese of all ages demonstrated that vitamin D deficiency was highly prevalent and associated with low bone mineral density (BMD), particularly in women where prevalence of vitamin D deficiency (below 20 ng/mL) was 30%, compared with a figure of 16% in men⁴.

Although 73% of Vietnam’s population is still living in rural areas, the country is beginning to become more urbanized (*Figure 3*)⁵. As has occurred in other Asian countries with increasingly urbanized lifestyles, this too will become a risk factor for vitamin D deficiency due to indoor lifestyles resulting in less exposure to sunlight. Moreover, the highest prevalence of vitamin D deficiency was found in young Vietnamese women under the age of 30 years, and this held true for both rural and urban areas. A possible explanation for this

FIGURE 3 Urban versus rural population in Vietnam⁵



is a current trend towards sun avoidance in this group, who may feel that fair, rather than tanned, skin is aesthetically more desirable⁶.

Level of awareness

A study in Ho Chi Minh City found that awareness of vitamin D and its bone health benefits was inadequate overall; however younger participants and those with higher education levels had better knowledge of the benefits and sources. In general, information about vitamin D was obtained from the media such as newspapers, radio and TV but still as many as 17% of those surveyed did not know how they could increase their levels of vitamin D⁶.

Another study found low awareness among postmenopausal women when asked about the local calcium-rich food sources that are abundant in Vietnam (i.e. small fish and crabs). After providing nutrition education, the calcium consumption increased and bone loss slowed in the participants⁷. In a country such as Vietnam where calcium consumption is much lower than the recommended dietary allowance, studies such as this are important in pointing out the basic educational needs that will have a big impact on bone health.

FRACTURE RATES

Hip fracture

In the 2009 IOF Asian Audit, it was reported that annual hip fractures were projected to reach 47,652 by the year 2050. A 2013 survey of the national societies reported that between 10–25% of hip fractures in Vietnam are managed surgically, and the average waiting-time for hip surgery is more than 3 days. Treating hip fractures costs between 1,000 to 4,000 USD per treatment and account for an approximate hospital stay of 14 nights (*Table 1*).

TABLE 1 Hip fracture in Vietnam

HOSPITAL COSTS PER HIP FRACTURE (USD)	AVERAGE HOSPITAL BED DAYS	SURGICALLY TREATED
\$1,000–4,000	14	10-25%

Other fragility fractures

Data not provided.

Vertebral fractures

A study, using spine radiographs, estimated, based on quantitative measurements of vertebral heights, that the prevalence of clinically undiagnosed vertebral fracture in Vietnamese men and women aged 50 years or older was 23% and 26%, respectively⁸. It is even higher in the elderly. Among those aged over 70 years, 41% of men and 42% of women had a vertebral fracture. These figures are similar to the vertebral fracture prevalence in Caucasian populations and pose a serious threat to the Vietnamese ageing population given that the 5-year risk of mortality after a vertebral fracture is increased by 20%⁸.

COST OF FRACTURE

See hip fracture.

FRACTURE REGISTRIES

Vietnam does not currently have a fracture registry.

FRACTURE LIAISON SERVICES

Fracture liaison services have not been implemented in Vietnam.

SPECIALISTS RESPONSIBLE FOR OSTEOPOROSIS

Osteoporosis in Vietnam is mainly managed by the country's rheumatologists. Other healthcare professionals who also take responsibility for osteoporosis care in Vietnam are the general practitioners, orthopaedic surgeons, endocrinologists, and internal medicine and rehabilitation physicians.

Of the specialities listed above, osteoporosis is a recognized component of speciality medical training for rheumatologists, geriatricians and internal medicine physicians.



TABLE 2 Treatments available in Vietnam and reimbursement levels

	YES	NO	IF YES, % REIMBURSED
Risedronate		x	
Alendronate	x		depends on medical insurance plan
Ibandronate		x	
Zoledronic acid	x		depends on medical insurance plan
Clodronate		x	
Pamidronate		x	
Raloxifene		x	
Bazedoxifene		x	
Denosumab		x*	
Strontium Ranelate		x	
Teriparatide		x	
PTH (1-84)		x	
Vitamin D/Ca supplements	x		depends on medical insurance plan
Calcitonin	x		depends on medical insurance plan
Hormone Replacement Therapy		x	
Testosterone		x	
Alfacalcidol		x	
Calcitriol	x		depends on medical insurance plan

*not available

GOVERNMENT POLICIES

Osteoporosis as a documented national health priority

Osteoporosis is not a national health priority in Vietnam.

Guidelines

In 2012, the Vietnam Rheumatology Association published the, ‘Diagnosis and treatment of osteoporosis in guidelines for diagnosis and treatment of rheumatic diseases’. These guidelines in general are compatible

with the country’s reimbursement system and they address criteria for treatment of osteoporosis such as, prior fracture, age, BMD and FRAX.

Audit and quality indicator systems

Vietnam does not have audit or quality indicators in place for osteoporosis care.

TREATMENT

The Vietnamese national health-care scheme covers approximately 60% of the population with approximately 35 million people remaining uninsured. Private insurance is also offered to those who can afford it. The amount that patients pay out-of-pocket for osteoporosis treatment varies by the type of coverage, and these cost variations do interfere with what physicians in Vietnam would normally recommend to patients. For example, for the 40% without health-care coverage, physicians can prescribe a greater choice of medication (albeit at the patient’s cost); however, for those patients who have health-care coverage, physicians are limited to prescribing medications from a drug formulary that often has inflated prices.

In general, reimbursement by the national health-care system or state medical insurance for osteoporosis treatment requires a prior authorization, is limited to patients with BMD ($T < -2.5$ SD) and may vary between first-line and second-line treatments.

A handful of medications are offered for osteoporosis treatment, and generally the designated first-line treatments are vitamin D, calcium supplements and bisphosphonates. *Table 2* details the treatments offered and reimbursement levels.

DIAGNOSTICS

When dual-energy x-ray absorptiometry (DXA) is used for diagnosing osteoporosis, the average waiting time for a scan is one day. However, there are very few DXA machines in Vietnam with a density of less than 0.1 per million of the population⁹. A scan costs approximately 10 USD and is reimbursed in part which can cause a barrier to access (*Table 3*). There is no information provided on the use of ultrasound for diagnosing osteoporosis.

TABLE 3 Diagnostics access and cost in Vietnam

	DXA	ULTRASOUND
Waiting time (d)	immediate	n/a
Cost (USD)	10	n/a
Is it reimbursed?	in part	n/a
Is reimbursement a barrier to access to treatment?	sometimes	n/a
N/A data not available		

RECOMMENDATIONS

Although osteoporosis is a devastating disease due to its consequences on individuals and society, it is not considered a national health priority in Vietnam. The Vietnam Rheumatology Association and its affiliates in Hanoi and Ho Chi Minh City are trying to raise awareness among the government and community on the importance of the disease. However, as insufficient data have been gathered about the state of osteoporosis, its risk factors and consequences, it is difficult to persuade authorities to consider osteoporosis as a priority in their agenda. Also, it will be beneficial for national societies and associations to launch programmes and/or campaigns focused on osteoporosis prevention such as: bone health education, exercise, nutrition including vitamin D and calcium intake, and falls prevention. To achieve these goals it will take a joint effort between the associations, the government and the international osteoporosis community. Vietnam needs to establish specific plans about tackling osteoporosis in the country, and call for international support and assistance from osteoporosis-focused individuals and organizations who can share successes and learning opportunities.

As a start, pending the availability of funding, the Vietnam Rheumatology Association would like to conduct osteoporosis studies in local communities across the nation. This is an important step since currently information about osteoporosis and bone diseases in Vietnam are not systematically and widely collected. Conducting national-scale research covering all aspects of bone health will enable Vietnam to develop programmes and deploy activities focusing on desired objectives for short- and long-term goals.

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