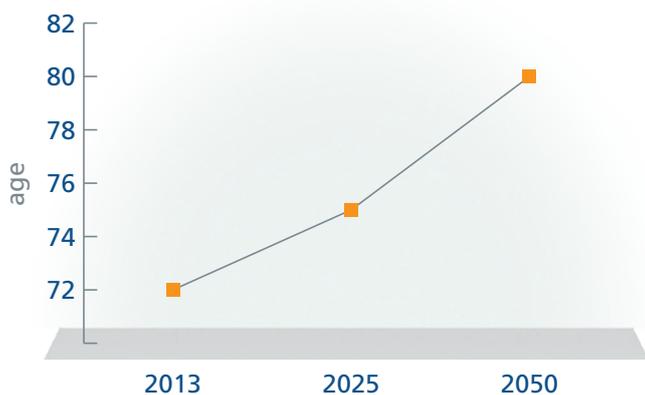


PHILIPPINES

COUNTRY OVERVIEW

The population is ageing in the Philippines, similar to the demographic changes observed in the rest of Asia and elsewhere in the world (Figure 1). In 2013, the overall Filipino population was 105.7 million. It is projected to increase by 22% to 128.9 million by 2025 and by 63% to 171.9 million by 2050 (Figure 2). These figures pale in comparison with the projected increases in the elderly. The proportion of the Filipino population aged over 70 years is predicted to increase by 372%, from 2.8 million in 2013 to 13.4 million in 2050. In a population where the life expectancy is projected to increase by 11% from the current 72 years to 80 years in 2050 (Figure 1), these statistics highlight the need to focus on osteoporosis awareness, diagnosis and treatment in the Philippines¹.

FIGURE 1 Life expectancy in the Philippines



State of osteoporosis/osteopenia

According to National Nutrition and Health Survey (NNHeS) 2003 data, 26% of women and 11.4% of men aged between 60–69 years are considered at high risk for osteoporosis. This is also true for 79.1% of women and 62.2% of men aged over 70 years. From these numbers it has been projected that the number of Filipinos at high risk for osteoporosis will reach 4 million by 2020 and 10.2 million by 2050².



Philippines

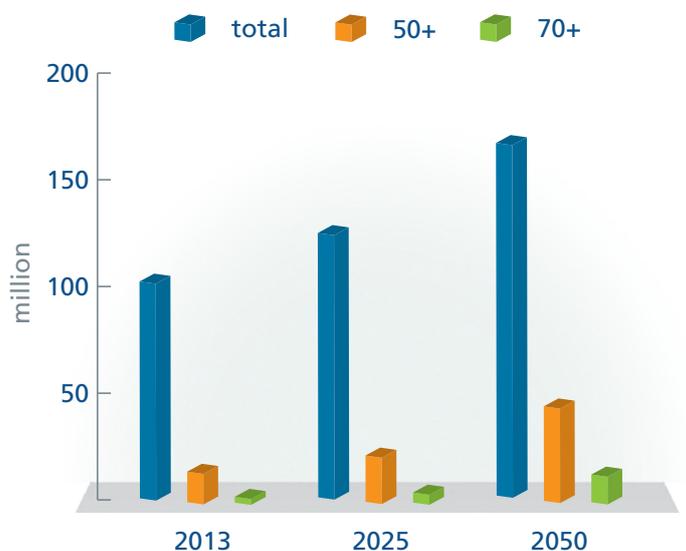
CURRENT

- Population **105.7 million**
- Aged over 50 years **14%**
- Life expectancy **72 years**
- Hip fracture incidence per year **93/100,000**
- Cost per hip fracture **2,200 USD**
- Number of DXA per million population **0.1**
- Fracture liaison services **not implemented**

PROJECTED 2050

- Population **171.9 million** ↑
- Aged over 50 years **27%** ↑
- Life expectancy **80 years** ↑

FIGURE 2 Population projection for the Philippines

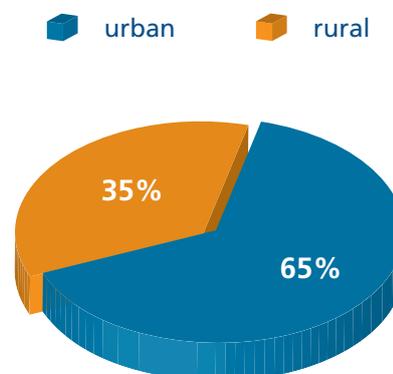


To give perspective on more recent data, the Osteoporosis Society of the Philippines Foundation Inc. (OSPFI), provided Tables 1 and 2 to summarize 2008 data gathered by the NNHeS. Using ultrasound, it was found that the prevalence of low bone mass (T-score < -2.0) in Filipino women aged over 50 years was 65.2% and 68.8% in men (Table 1). Using the Osteoporosis Self-Assessment Tool for Asians (OSTA), the prevalence of osteoporosis was estimated and found to be an intermediate risk in 45.9% of women and in 43.4% of men (Table 2). This translates to millions of individuals at risk of osteoporosis.

Lifestyle

The Philippines is highly urbanized with over 60% of the population living in cities (Figure 3), with 44% of the population of low income^{1,3}. The sixth national nutrition survey of the Philippines in the year 2003, using the food weighing method, found the mean daily calcium intake per person to be 440 mg which is just 57% of the recommended calcium intake for Filipinos³. Another study found the average calcium intake to be 250 mg per

FIGURE 3 Urban versus rural population in the Philippines



day. Nutrition surveys have found some possible reasons for low calcium levels. For example, the diet of urban Filipinos may be predominately based on highly energy dense foods lacking micronutrients such as calcium and vitamin D. Another reason could be the lower consumption of dairy products because they tend to be imported and are expensive.

TABLE 1 Prevalence of low bone mass using T-Score, adults aged ≥50 years

AGE (YEARS)	MALES		FEMALES	
	< -2.0 % (n)	≥ -2.0 % (n)	< -2.0 % (n)	≥ -2.0 % (n)
50-59	80.49% 33	19.51% 8	73.12% 68	26.88% 25
60-69	60% 24	40% 16	67.07% 55	32.92% 27
≥ 70	55.56% 5	44.44% 4	43.9% 18	56.10% 23
total	68.89% 62	31.11% 28	65.28% 141	34.72% 75

TABLE 2 Proportion of adults at risk for osteoporosis using OSTA, adults aged ≥50 years

AGE (YEARS)	MALES			FEMALES		
	LOW % (n)	INTERMEDIATE % (n)	HIGH % (n)	LOW % (n)	INTERMEDIATE % (n)	HIGH % (n)
50-59	84.38% 27	15.63% 5	0% 0	73.53% 50	26.47% 18	0% 0
60-69	18.92% 7	70.27% 26	10.81% 4	18.03% 11	73.77% 45	8.2% 5
≥ 70	14.29% 1	28.57% 2	57.14% 4	0% 0	33.33% 10	66.67% 20
total	46.05% 35	43.42% 33	10.53% 8	38.36% 61	45.91% 73	15.72% 25

Good sources of calcium, however, are readily available in the Filipino diet including small fish such as sardines, which are eaten with bones intact, and green leafy vegetables⁴. Additionally, some good news was indicated in one study suggesting that vitamin D deficiency in the Philippines may not be a main contributor of postmenopausal osteoporosis since the majority (64%) of participants were found to have adequate levels of vitamin D⁵.

Level of awareness

In the Philippines osteoporosis is largely seen as a natural process of ageing so the overall level of urgency and concern about the disease is not high. This is further reinforced in that osteoporosis is not a national health priority nor is its treatment reimbursed.

FRACTURE RATES

Hip fracture

Analysis of the national health insurance system database in the Philippines revealed that there were a total of 17,875 hip fractures from 2007 to 2012 in those aged over 50 years.

The IOF hip fracture incidence map indicates the Filipino hip fracture incidence is 93/100,000 per year (133/100,000 per year in women and 48/100,000 per year in men)⁶.

The average waiting time for hip surgery is greater than 3 days in the Philippines and the proportion of hip fractures treated surgically is 25–50% (Table 3). The long wait times and low surgery rate are likely due to the low (if any) reimbursement offered for inpatient fracture care.

Other fragility fractures

Current data from the national health insurance system recorded 27,340 fractures (non-hip, non-spine) from 2007–2012 in individuals aged 50 years and older. Previous data from 2003 NNHeS indicated the overall prevalence of fragility fractures was 11.23% in women and 8.97% in men⁷.

Vertebral fractures

The fracture data collected from the national health system found 4,610 cases of vertebral fractures from 2007 to 2012 in those aged 50 years and over.

COST OF FRACTURE

An analysis of data from 2007–2012 of the current costs of fracture was conducted through collaboration between OSPFI and the Philippine Health Insurance Corp (PhilHealth). The study found direct hospital costs of hip fracture to be approximately 2,200 USD (94,611 PhP), and less than half all hip fractures are treated surgically (Table 3).

TABLE 3 Hip fracture in the Philippines

HOSPITAL COSTS PER HIP FRACTURE (USD)	AVERAGE HOSPITAL BED DAYS	SURGICALLY TREATED
\$2,200	information not available	25-50%

FRACTURE REGISTRIES

Fracture registries exist in the Philippines on both the national and hospital levels. PhilHealth tracks fractures through the International Classification of Diseases (ICD) codes. The fracture data from 2001–2005 were used to calibrate FRAX for the Filipino population, and data from 2006–2010 are currently being gathered and analyzed. Additionally, the Trauma Registry of the Philippine Orthopaedic Association (POA) tracks fractures at the hospital level. Both registries track hip and all other fracture data in men and women aged over 40 years.

FRACTURE LIAISON SERVICES

There are no fracture liaison services in the Philippines.

SPECIALISTS RESPONSIBLE FOR OSTEOPOROSIS

Osteoporosis is managed by many specialities in the Philippines and training specific to osteoporosis is included in the medical curriculum for: rheumatologists, orthopaedic surgeons, endocrinologists, geriatricians, rehabilitation medicine physicians, and internal medicine physicians. Sometimes gynaecologists are responsible for osteoporosis management, but this is not very common.

GOVERNMENT POLICIES

Osteoporosis as a documented national health priority

Osteoporosis is not currently a national health priority in the Philippines. Since the government focuses more on communicable diseases, funds are prioritized to these conditions, and there are no large-scale epidemiologic data on fracture rates or vitamin D deficiency/insufficiency. Further, as mentioned later, diagnoses and treatment for osteoporosis is not covered by insurance.

A few efforts, however, have been put into place to increase awareness of the disease. Proclamation No. 19, a mandate signed in 1998, declared every second week of October as National Osteoporosis Awareness Week. However, more support is needed from national and local governments to increase proactive awareness programmes, activities and education about this condition.

The government has also put into place a food fortification programme fortifying milk products with calcium and vitamin D in local and imported brands. Additionally, the NNHeS 2013 is ongoing in the Philippines. It is hoped that enough funds will be generated to analyze the status of Vitamin D in the Filipino population in national and regional reports.

The national society OSPFI is active in promoting osteoporosis awareness and has been actively joining NNHeS since 2003 for collaborative data collection on nutrition and its relationship to metabolic bone disease and other conditions of the general population.

Guidelines

The guidelines, ‘Consensus Statement on Osteoporosis Diagnosis, Prevention, and Treatment among Postmenopausal Filipino Women in the Philippines’ were published in 2011 by OSPFI. They have been published in a supporting paper in the *International Journal of Rheumatic Diseases*.

Despite the presence of local practice guidelines, they have not been used to modify the reimbursement policies to cover osteoporosis treatments.

Audit and quality indicator systems

Currently there are no audit or quality indicator tracking systems in place in the Philippines.

TREATMENT

The national health insurance system and the private insurance companies in the Philippines cover a very small portion of hospitalization costs related to fractures, and once discharged patients pay out-of-pocket for all treatments, with no reimbursement offered. This is mainly due to osteoporosis being considered as a natural process of ageing, hence, treatments are not included in the health benefit packages, and patients have to settle the costs themselves.

DIAGNOSTICS

There is a low density of dual-energy X-ray absorptiometry (DXA) equipment in the Philippines at less than 0.1 per one million of the general population⁸. Where scans are available, the waiting time to receive a DXA scan is just a few days however the costs are not reimbursed which poses a barrier to access (*Table 4*).

TABLE 4 Diagnostics access and cost in the Philippines

	DXA	ULTRASOUND
Waiting time (d)	2-3	not routinely used in clinics
Cost (USD)	\$55-135	free
Is it reimbursed?	no	n/a
Is reimbursement a barrier to access to treatment?	yes	n/a

N/A information not available

RECOMMENDATIONS

In a country where the proportion of the Filipinos aged over 70 years will increase by a dramatic 372% over the next four decades, rising from 2.8 million in 2013 to

13.4 million in 2050, there is little debate whether the burden of osteoporosis will be felt. Efforts to change the point of view that osteoporosis is just a natural process of ageing will likely result in benefits to the millions affected by the disease. Utilizing the current fracture registries to conduct epidemiological studies could aid in lobbying efforts with policy makers for better osteoporosis health-care delivery, such as reimbursing DXA and osteoporosis treatments and increasing the percentage of hip fractures that are treated surgically. Finally, getting osteoporosis on the radar for consideration as a national health priority could catapult the efforts of the national societies towards osteoporosis awareness, prevention and treatment.

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