

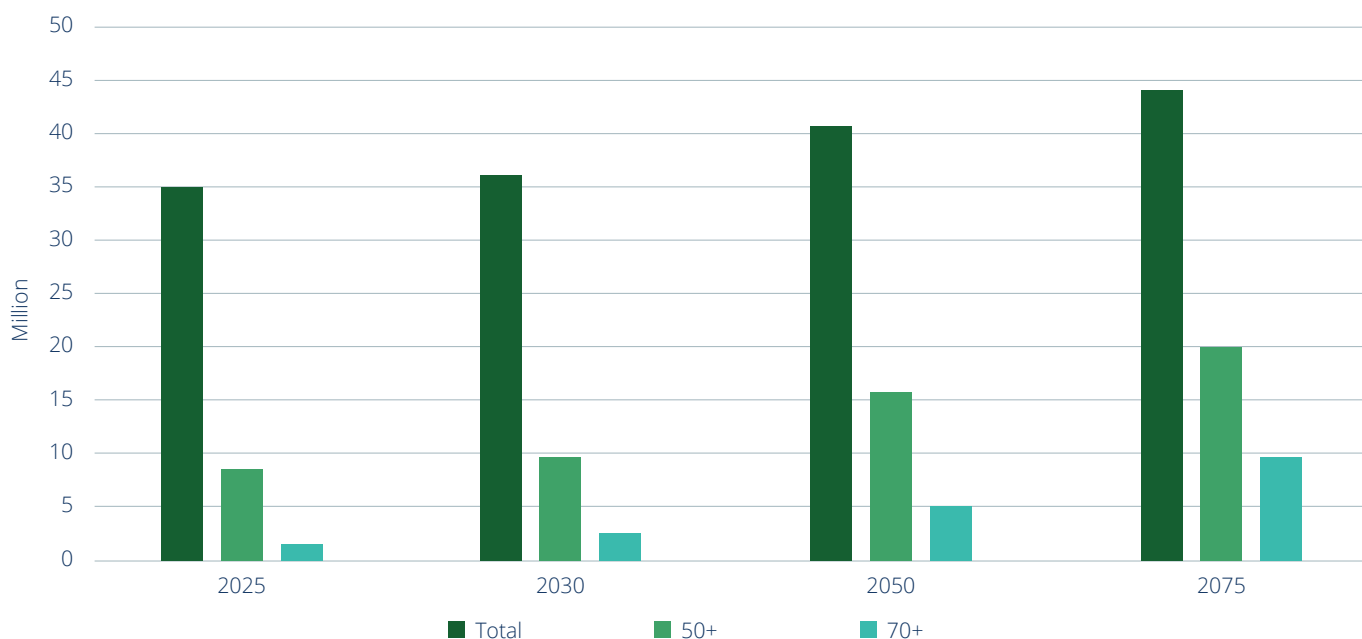
DEMOGRAPHIC TRENDS

Malaysia's population is projected to grow steadily over the coming decades, increasing by 18% from 34.9 million in 2025 to 41.3 million by 2050, and by a further 5% to reach 43.5 million by 2075 (*Figure 1*). Malaysians currently have an average life expectancy of 76.9 years, which is expected to rise to 87.0 years by 2075, an increase of more than 13%.

The proportion of Malaysians aged 50 years or older is set to rise significantly. In 2025, this group of almost 8.1 million people represents 23% of the total population. By 2075, this will increase to 46%, with numbers more than doubling to 19.9 million (*Figure 1*).

The most dramatic demographic shift in Malaysia will be among those aged 70 years or older, whose numbers are projected to surge from almost 1.9 million in 2025 to 9.5 million in 2075, a 408% increase in absolute terms. Equally striking is their growing share of the total population. In 2025, those aged 70+ accounted for just 5% of Malaysia's 34.9 million people. By 2075, they will make up 22% of a larger 43.5 million population, reflecting a 307% relative increase in their proportion of the total population.

Figure 1. Population projections for Malaysia from 2025 to 2075^[1]



CLINICAL SPECIALTY RESPONSIBLE FOR MANAGEMENT OF OSTEOPOROSIS

Osteoporosis is not primarily managed by primary care physicians. Instead, it is under the care of rheumatologists, orthopaedic surgeons, endocrinologists and geriatricians. Osteoporosis is not recognised as a standalone medical specialty, however, it is currently a formal component of specialty medical training, particularly for rheumatologists, orthopaedic surgeons, endocrinologists and geriatricians.

HEALTHCARE COSTS ASSOCIATED WITH FRAGILITY FRACTURES

Average direct hospital costs for treating osteoporotic hip fractures (USD)	Average indirect hospital costs for treating osteoporotic hip fractures (USD)	Average bed days for hip fractures
6,326 - 6,420*	780*	7 - 17*

**Best available estimates as reported by country experts in the absence of published data.*

CENTRALISED DATABASES FOR FRACTURES AND EPIDEMIOLOGY

There is no centralised database for fractures in Malaysia.

PATIENT SUPPORT ORGANISATIONS

The Osteoporosis Awareness Society of Kuala Lumpur and Selangor (OASKLS) and the Malaysian Osteoporosis Society (MOS) are patient-focused organisations dedicated to raising awareness and improving the management of osteoporosis in Malaysia. They operate across the country, with a particular focus on communities with older populations. Their activities are centred around a include active policy advocacy, public education, and capacity-building initiatives. Their outreach strategies encompass webinars as well as face-to-face campaigns conducted nationwide.

While both organisations play a significant role in public engagement and policy, they are not currently involved in peer support services or research and development activities.

OSTEOPOROSIS AS A DOCUMENTED NATIONAL HEALTH PRIORITY (NHP)

Osteoporosis is not documented as a National Health Priority (NHP) in Malaysia.

AVAILABILITY AND REIMBURSEMENT OF MEDICATION

As shown in *Table 1*, a range of osteoporosis treatments are available to patients treated in public hospitals in Malaysia. However, there are not officially designated first-line treatments in the country. In the public healthcare system, bisphosphonates are typically used as the initial treatment before considering denosumab. In contrast, clinicians in the private sector have greater flexibility and may prescribe any osteoporosis medication based on clinical judgment.

Treatment reimbursement in Malaysia involves a combination of funding from the national health system, private insurance, and patient co-payments. The extent of coverage depends on the individual’s insurance status and financial situation. Reimbursement is often subject to specific criteria, including prior fracture history, bone mineral density results, whether the treatment is for primary or secondary prevention, first- or second-line treatment option, and prior authorisation requirements.

In the private healthcare sector, all osteoporosis medications are reimbursed if the patient has insurance. However, calcium and vitamin D supplements are generally excluded, as they are categorised as nutritional supplements. Patients without insurance coverage in the private sector are required to pay the full cost of their medications out-of-pocket.

Reimbursement policies may, at times, conflict with physicians' preferred treatment strategies. For instance, in public hospitals, anabolic agents, recommended for patients at very high risk, are not readily accessible. Each patient requires a separate funding application for these medications, and approval is not guaranteed. If funding is denied, patients must either pay out-of-pocket or be prescribed bisphosphonates. Denosumab is typically reserved for those who have not responded to bisphosphonates.

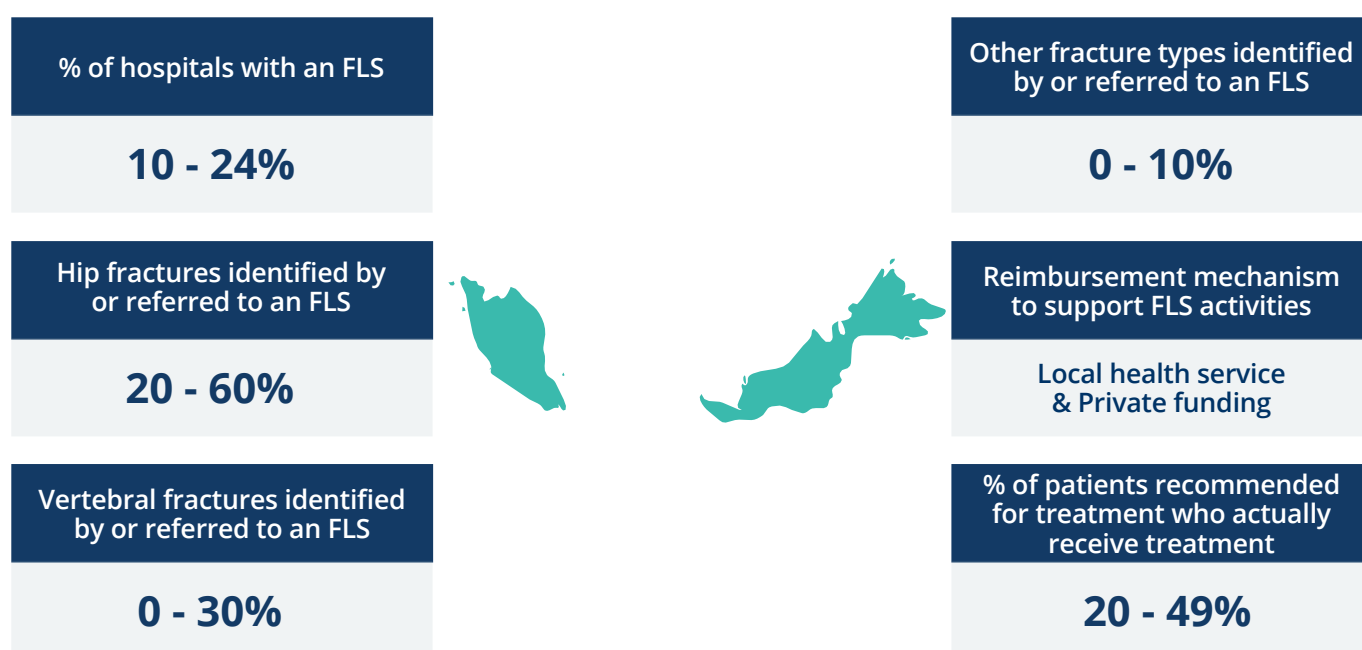
In some public healthcare facilities, medication eligibility is strictly tied to BMD results. For example, treatment may only be prescribed if a patient's T-score is ≤ -2.5 . Patients with a T-score of -2.4 may not qualify for medication reimbursement, highlighting a significant barrier to timely and effective osteoporosis treatment in the public sector.

Table 1. Availability and reimbursement of osteoporosis treatments in Malaysia

Treatment	Available	Reimbursed	% Reimbursed
Risedronate			
Alendronate	X	X	50 - 100%
Ibandronate	X		
Zoledronic acid	X		
Clodronate			
Pamidronate			
Raloxifene	X		
Bazedoxifene			
Denosumab	X	X	50 - 100%*
Strontium Ranelate			
Teriparatide	X		
PTH (1-84)			
Abaloparatide			
Romosozumab	X		
Vitamin D/Calcium supplements	X	X	100%
Calcitonin			
Hormone Replacement Therapy	X	X	50 - 100%
Testosterone	X		
Alfacalcidol	X	X	50%
Calcidiol	X		
Calcitriol	X	X	100%
Tibolone	X		

* Only after bisphosphonate failure or intolerance in public hospitals

FRACTURE LIAISON SERVICES (FLS) REIMBURSEMENT AND AVAILABILITY



WAITING TIME FOR HIP SURGERY



GUIDELINES FOR OSTEOPOROSIS MANAGEMENT

In 2022, the *Malaysian Osteoporosis Society (MOS) (Persatuan Osteoporosis Malaysia)* updated its 2012 guidelines, publishing the *Clinical Practice Guidelines on the Management of Osteoporosis 2022* ^[2]. The updated guidelines cover the management of osteoporosis in postmenopausal women, men, and individuals with glucocorticoid-induced osteoporosis (GIOP).

The guidelines emphasise population-based screening and recommend osteoporosis screening for several high-risk groups, including individuals with prior fragility fractures, those with clinical risk factors, secondary osteoporosis, height loss and falls risk, and for all postmenopausal women aged 50 years+.

Fracture risk assessment is addressed in detail, incorporating factors such as prior fractures, age, bone mineral density, FRAX[®] scores, and fall risk. However, these assessment recommendations are not fully aligned with the current reimbursement policies in Malaysia's public healthcare system.





The guidelines also provide specific treatment initiation criteria, which include prior fracture, age, BMD, FRAX[®], GIOP, and men. Despite these clinical recommendations, treatment decisions in the public sector remain constrained by government reimbursement policies. Reimbursement for osteoporosis medications, particularly anabolic agents, does not currently follow the Clinical Practice Guidelines. The guidelines were developed without direct patient involvement. Additional details on the development of these guidelines are included in *Table 2*.

Table 2. Development of clinical guidelines for the management of osteoporosis in Malaysia

Systematic literature review undertaken	Yes
Recommendations	Yes
Stakeholder involvement	Yes
External review	Yes
Procedure for update defined	Yes
Economic analysis	No
Editorial independence	Yes

ACCESS TO DXA AND/OR ULTRASOUND AND REIMBURSEMENT

DXA is available in Malaysia.

	Waiting time (d)	30 - 90 days in public hospitals, 0 - 1 day in private hospitals
	Cost (USD)	0 - 34 in public hospitals, 43 - 85 in private hospitals
	Is it reimbursed?	Yes, in majority of public hospitals, yes for those in private hospitals with insurance
	Is reimbursement a barrier to accessing treatment?	Yes

No data was provided on access to ultrasound in Malaysia.

FRACTURE RISK ASSESSMENT TOOLS

Malaysia uses FRAX®, but it is not widely used within the country.

QUALITY INDICATORS

There are no quality indicators for hip and other fractures in Malaysia.



OVERVIEW OF OSTEOPOROSIS IN MALAYSIA

The incidence of hip fractures among individuals aged 50 years+ in Malaysia was estimated at 90 per 100,000 population in 1996 ^[3]. Age-adjusted rates were 218 per 100,000 for women and 88 per 100,000 for men. Asymptomatic morphometric vertebral fractures were identified in 11.4% of participants in a cohort of healthy, community-dwelling adults aged 45-90 years ^[4].

Projections suggest a significant rise in hip fractures, with cases expected to increase 3.55-fold from 5,880 in 2018 to 20,893 by 2050 ^[5]. Despite this alarming trajectory, osteoporosis is not currently recognised as a national health priority in Malaysia.

The 3rd edition of the *Clinical Practice Guidelines (CPG) on the Management of Osteoporosis* ^[6] was published in 2022 and officially launched on 17 January 2023, accompanied by a message from the Director-General of Health Malaysia. Since the launch, the Malaysian Osteoporosis Society (MOS) has conducted educational workshops nationwide to promote guideline adoption among medical professionals. However, challenges remain in integrating osteoporosis screening and secondary fracture prevention into routine practice across all disciplines.

Vitamin D deficiency is widespread in Malaysia. A meta-analysis reported that the pooled prevalence of vitamin D deficiency ($25(\text{OH})\text{D} < 30 \text{ nmol/L}$) was 21% (95% CI: 9–36%), while vitamin D insufficiency ($25(\text{OH})\text{D} < 50 \text{ nmol/L}$) affected approximately 64.5% of the population (95% CI: 56.1–72.5%) ^[7]. Additionally, calcium intake among postmenopausal women averages around 450 mg per day, far below recommended levels ^[8].

There is a critical lack of up-to-date epidemiological data on osteoporotic fractures in Malaysia. The absence of recent national hip fracture data and large-scale population-based studies hinders effective health policy planning and resource allocation.



Three main organisations are actively engaged in osteoporosis and fragility fracture advocacy in Malaysia:

- **Malaysian Osteoporosis Society (MOS):** Professional medical society leading guideline development and clinician education.
- **Fragility Fracture Network of Malaysia (FFNM):** Focused on multidisciplinary care and system-level improvements for fragility fracture patients.
- **Osteoporosis Awareness Society of Kuala Lumpur and Selangor (OASKLS):** A patient-focused organisation engaged in public education through face-to-face events, social media campaigns, and live streams.

These societies collaborate under the Bone Health Alliance Malaysia (BHAM) to raise public awareness and advocate for improved osteoporosis care.

To address the growing burden of osteoporosis and fractures in Malaysia, it is imperative to:

- **Elevate osteoporosis to a National Health Priority.**
- **Expand Fracture Liaison Services (FLS) to more hospitals.**
- **Engage a broader range of healthcare specialties in proactive osteoporosis treatment.**
- **Launch large-scale epidemiological studies to inform national policy.**

REFERENCES

1. US Census Bureau International Database (IDB) Website. 2025. https://www.census.gov/data-tools/demo/idb/#/dashboard?dashboard_page=country&COUNTRY_YR_ANIM=2025. Accessed 22 May 2025.
2. Ong TIW, Lim LL, Chan SP, Chee WSS, Ch'ng ASH, Chong EGM, Damodaran P, Hew FL, Ibrahim LB, Khor HM, Lai PSM, Lee JK, Lim AL, Lim BP, Paramasivam SS, Ratnasingam J, Siow YS, Tan ATB, Thiagarajan N, Yeap SS. A summary of the Malaysian Clinical Practice Guidelines on the management of postmenopausal osteoporosis, 2022. *Osteoporos Sarcopenia*. 2023 Jun;9(2):60-69. doi: 10.1016/j.afos.2023.06.002. Epub 2023 Jun 20. PMID: 37496985; PMCID: PMC10366466.
3. Lee, JK and Khir, ASM (2007), The incidence of hip fracture in Malaysians above 50 years of age: variation in different ethnic groups. *APLAR Journal of Rheumatology*, 10: 300-305. <https://doi.org/10.1111/j.1479-8077.2007.00314.x>
4. Yeap SS, Thambiah SC, Suppiah S, Md-Said S, Appannah G, Samsudin IN, Zainuddin N, Zahari-Sham SY, Hew FL. Asymptomatic morphometric vertebral fractures and its associated factors: A cross-sectional study among adults in a selected urban area in Selangor, Malaysia. *PLoS One*. 2021 Jul 22;16(7):e0255069. doi: 10.1371/journal.pone.0255069. PMID: 34293028; PMCID: PMC8297745.
5. Cheung CL, Ang SB, Chadha M, Chow ES, Chung YS, Hew FL, Jaisamrarn U, Ng H, Takeuchi Y, Wu CH, Xia W, Yu J, Fujiwara S. An updated hip fracture projection in Asia: The Asian Federation of Osteoporosis Societies study. *Osteoporos Sarcopenia*. 2018 Mar;4(1):16-21. doi: 10.1016/j.afos.2018.03.003. Epub 2018 Mar 22. PMID: 30775536; PMCID: PMC6362950.
6. Malaysian Osteoporosis Society, Academy of Medicine of Malaysia, & Ministry of Health Malaysia. (2022). *Clinical Practice Guidelines on the Management of Osteoporosis* (3rd ed.). (Launched 17 January 2023). Putrajaya: Ministry of Health Malaysia.
7. Mohd Saffian S, Jamil NA, Mohd Tahir NA, Hatah E. Vitamin D insufficiency is high in Malaysia: A systematic review and meta-analysis of studies on vitamin D status in Malaysia. *Front Nutr*. 2022 Nov 18;9:1050745. doi: 10.3389/fnut.2022.1050745. PMID: 36466384; PMCID: PMC9715981.
8. Chee WS, Suriah AR, Zaitun Y, Chan SP, Yap SL, Chan YM. Dietary calcium intake in postmenopausal Malaysian women: comparison between the food frequency questionnaire and three-day food records. *Asia Pac J Clin Nutr*. 2002;11(2):142-6. doi: 10.1046/j.1440-6047.2002.00276.x. PMID: 12074181.

This document highlights the key findings for Malaysia, published in "The Asia Pacific Regional Audit: Epidemiology, costs and burden of osteoporosis in 2025". View the complete report at: <https://www.osteoporosis.foundation/asia-pacific-audit-2025>

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APAC Audit Contributors based in Malaysia

Asia Pacific Orthopaedic Association (APOA)
<https://apoaonline.com/>

Malaysian Osteoporosis Society (MOS)
<https://www.osteoporosis.my/>

Universiti Tunku Abdul Rahman
<https://www.utar.edu.my/>

