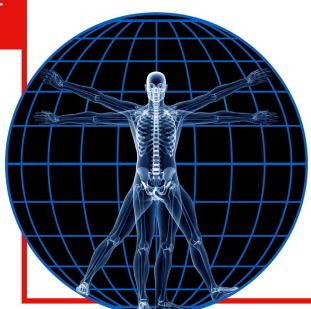
ECONOMIST IMPACT



# Integrated Care Pathways for Bone Health: Malaysia

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### The burden of poor bone health

Malaysia's demographics are rapidly changing, including an unprecedented increase in the average age of the population. The percentage of the population aged 65 years and above increased from 6.7% in 2019 to 7% in 2020, reaching approximately 2.3 million people. It is projected that 14.5% of the population will be 65 years and above by 2040.¹ This rapid growth in the ageing population is likely to translate to a greater prevalence of poor bone health in the country, which in turn, will impose severe physical, psychosocial, and financial burdens on both the patient and society.

Although poor bone health comprises a broad spectrum of diseases, it is most often quantified as the cumulative burden of osteoporosis and osteoporosis-related fractures, and is characterised by low bone mineral density (BMD) and/or the deterioration of bone tissue. Osteoporosis is the most widespread bone disease worldwide.<sup>2</sup> Osteopenia is an early stage of osteoporosis, and many individuals with osteopenia are at greater risk for developing established osteoporosis.<sup>2</sup>

This paper utilises the terms *osteoporosis-related fractures* and *osteoporotic fractures* as opposed

to *fragility fractures* to avoid the stigma that often accompanies the term *fragility*.

Given the rapid growth in its ageing population, Malaysia is projected to face a 3.5-fold increase in the number of hip fractures between 2018 and 2050 – the highest increase in Asia. This is expected to cost the country over MYR530 million (US\$125 million) for health-related services in 2050.3 Adding to this cost is the fact that osteoporosis is underdiagnosed and undertreated in the country, with few reliable estimates of its prevalence. Bone health was also not included in the 2018 National Health and Morbidity Survey.4 Dr Feisul Mustapha, deputy director for noncommunicable diseases (NCDs) at the Disease Control Division of Malaysia's Ministry of Health, explains that the country is still "grappling with the more basic screening services for other chronic diseases with higher disease burden," impacting the government's ability to drive progress in bone health. Prioritising bone health at the national level would, however, be strategically sound to reduce the overall burden of NCDs and improve population health.

## **Educating the Public about Osteoporosis**

A lack of awareness and understanding among the general population and some primary care providers about bone health and the associated risks is one of the main drivers behind the rising burden of poor bone health around the world. Many misconceptions around osteoporosis and osteoporotic fractures continue to exist. There is a need to empower individuals to discuss bone health with their physician, as well as make healthy decisions, such as modifying lifestyle factors.

Public awareness of poor bone health as a serious health issue is similarly lacking in Malaysia. Dr Terence Ong, consultant geriatrician at University Malaya Medical Centre and member of the Osteoporosis Awareness Society of Kuala Lumpur and Selangor, points out that "[Bone health] certainly hasn't gotten the level of awareness that we associate with equally prevalent conditions like diabetes, heart disease, stroke, or cancer."

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Dr Terence Ong

Dr Ong states that even for individuals that have osteoporosis, there is a lack of awareness of the serious cost of non-adherence to prescribed osteoporosis treatments. "If I don't take my heart medicines, I can feel myself being poorly because my heart's not going to work very well. But if I don't take my medicines for osteoporosis, I don't really feel anything until I have another broken bone. So I'm going to spend money on the thing that makes

me feel better now." This assessment of the public's lack of awareness of the seriousness of poor bone health is supported by a survey conducted by the Bone Health Alliance Malaysia, an alliance of three organisations: Malaysian Osteoporosis Society, Osteoporosis Awareness Society of Kuala Lumpur and Selangor and Fragility Fracture Network of Malaysia (FFNM). The survey revealed that 77% of respondents have misconceptions about bone health, often characterising weak bones and loss of height as a part of the natural ageing process. More than half of the respondents underestimated the impact and danger of osteoporosis in women, and 96% of respondents were unaware of all the factors that can increase their risk of osteoporosis, such as family history, post-menopausal status, low body weight, diet low in calcium, and heavy consumption of caffeine, alcohol and/or cigarettes.5

However, many local organisations are making progress in changing this narrative through educational initiatives. The Bone Health Alliance Malaysia has been a key player in education and advocacy initiatives. The societies that make up this alliance have been raising awareness among people in different parts of the country, even in very remote areas, as stated by interviewed experts. The three societies also actively engage with the general public through events, webinars, and social media campaigns.<sup>6</sup>

### Strengthening Primary Care for the Promotion of Bone Health

Malaysia has a gatekeeping system in the public healthcare sector where access to specialist care in hospitals is managed through a referral system.<sup>7</sup> Primary care physicians are therefore the first points of contact for most people in the country.<sup>8</sup> This poses a challenge in the field of bone health when some stakeholders are not sufficiently aware

of or adequately promoting the importance of bone health among their patients. Additionally, primary healthcare professionals are often responsible for managing and recognising a wide range of health conditions, making it difficult for bone health to be given due attention.

Furthermore, even when physicians are well aware of osteoporosis and its consequences, it does not necessarily translate into appropriate patient education, care and management. The high burden of NCDs such as diabetes mellitus, hypertension and heart disease are often prioritised over bone health. <sup>10</sup> "I don't think people talk much about bone health at all at the primary care level," Dr Mustapha states. This lack of attention and awareness around poor bone health can contribute to late diagnosis. However, this can be combated with professional development programs for working healthcare professions.

Clinical guidelines on the management of osteoporosis were developed in 2006, with subsequent updates in 2012 and 2015 by the Malaysian Osteoporosis Society in collaboration with the Ministry of Health and the Academy of Medicine to fill this gap and develop a standard of care for clinicians to follow.9 The Malaysian Society of Geriatric Medicine has also created a postgraduate diploma in primary care for the elderly to provide the clinician population with advanced knowledge and skills in geriatric medicine, and more broadly to increase the capacity of clinicians to deal with Malaysia's ageing population.<sup>11</sup> Dr Elizabeth Chong, geriatric medicine specialist at Kuala Lumpur Hospital, says that many geriatricians in Malaysia have an interest in promoting bone health among other medical professionals, adding "... we [geriatricians] try to emphasise to our physician colleagues about the importance of managing [bone health] and to make sure they look into it." Education initiatives about bone health in Malaysia are principally aimed at primary care level physicians to ensure

early intervention. Collaborations with other societies, such as the Malaysian Orthopaedic Association have also been considered to spread awareness among medical professionals in other subspecialties. There is an urgent need for increasing the reach of these activities to expand education among healthcare professionals, particularly in primary care, to better understand the importance of bone health and prioritise it within wider patient care.

# **Building Bridges between Primary and Secondary Care**

Public health services in Malaysia are centrally administered by the Ministry of Health through hospitals and health clinics.<sup>12</sup> However, care is dependent on the availability of human resources, as well as the location and size of the health facility. An integrated care approach, defined as a multidisciplinary response that allows the right health professionals to practise the right care at the right time, and provide continuity of care for an individual,13 has been highlighted and emphasised in the Malaysian National Strategic Plan for NCDs 2016-2025,14 as well as confirmed by interviewed experts. While not specifically targeted at bone health, this provides a useful blueprint for how stakeholders might implement the approach to improve care in this area.

In regards to the health workforce, although the Malaysian government has increased the number of postgraduate training places over the years, the country faces significant manpower constraints in healthcare. Since the country does not rely on expatriate healthcare professionals except as a short-term measure to fill specific skill gaps, this shortage of specialist medical professionals is unlikely to improve in the medium term.

The fragmentation of the healthcare system in Malaysia also poses an obstacle to effectively

design and implement integrated care pathways for bone health. "It takes concerted effort to try to get everybody together that is likely to be involved in bone health care," Professor Siew Pheng Chan, consultant endocrinologist at Subang Jaya Medical Center and president of the Malaysian Osteoporosis Society, states. There is also currently no electronic patient information system in Malaysia that allows communication between doctors across health facilities. This leads to the onus often falling on the patient to inform each provider about their condition. "Your [primary care physician] may not know you had a fracture unless you go back and tell them," Dr Hui Min Khor, consultant geriatrician at University Malaya Medical Centre and secretary of FFNM, adds. Fortunately, this may be changing according to Dr Khor. "Quite a number of hospitals in Malaysia are actively working with primary care physicians as a multidisciplinary team to provide better bone health care for patients."

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Dr Hui Min Khor

There are other nascent signs of integrated bone health management. Fracture Liaison Services (FLS), a multidisciplinary, systems-based approach to reduce subsequent fracture risks in patients with a recent osteoporotic fracture, <sup>16</sup> for example, have been recently initiated in Malaysia and have proven to be a successful model of care. According to the interviewed experts, FLS has shown a lot of promise for improving bone health. Dr Chong expresses that, "it isn't a big population that we have done [FLS with]. We started in 2019, I would

say probably we have reached about 600-700 patients. But when they come back, looking at them being healthy and going back to their communities, it is all worth it."

Unfortunately, all five available FLS in Malaysia are located in Klang Valley, the urban hub of Malaysia. This model needs to be replicated in the other states and territories in order for the service to become accessible for more Malaysians. "Some people have actually created FLS within their hospitals, but I think those success stories are usually at a very individual level," Dr Swan Sim Yeap, consultant rheumatologist at Subang Jaya Medical Centre and vice president of the Malaysian Osteoporosis Society, points out. Dr Ong, however, is cautiously optimistic about the expansion efforts, "that's where the specialist societies and updating our national clinical practice guidelines to put emphasis on FLS services comes into the picture. Convincing clinical champions in individual hospitals to lead a service is probably going to be the biggest challenge of the model."

### Boosting Access and Affordability in Bone Health Care

Several interviewed experts emphasised the difficulty in acquiring the right medication for patients due to costs, availability and prescribing restrictions. There is also differential access to treatments across the healthcare system in Malaysia. Public health facilities do not have all drugs available for the treatment of osteoporosis. Only senior doctors such as clinical specialists or consultants are allowed to authorise and prescribe certain osteoporosis drugs. There is also often a quota that restricts the amount that can be prescribed due to the cost of medication in the public sector. "We need to have access to appropriate therapies. So what if I make the diagnosis? I don't have anything to treat the patient

with, which becomes a roadblock," Professor Chan comments. Physicians who work at university hospitals have more liberty compared to other public sector physicians in prescribing medication for patients with osteoporosis, as long as the patient meets certain criteria.

Among the main pharmacological interventions for osteoporosis in Malaysia, only menopausal hormone therapy and roughly 60% of bisphosphonates are fully reimbursed in the public sector. Denosumab and raloxifene are available in both the public and private sector. Meanwhile, teriparatide and romosozumab are only available in the private sector, with reimbursement varying depending on one's insurance coverage. Many patients end up turning to the private sector where there is greater access to treatments - but it comes at higher out-of-pocket costs.

# The Need for Data to Inform Evidence-Based Programmes for Bone Health

A lack of osteoporotic fracture data in Malaysia underscores the need for large-scale epidemiological fracture studies to be funded and conducted.<sup>10</sup> Dato' Dr Joon Kiong Lee, consultant orthopaedic surgeon at Beacon Hospital and president of FFNM, explains that, "the data that I have from about 20 years ago on hip fractures is the most complete dataset nationwide. We have not done any national incidence or prevalence study of hip fractures since then, so data is really something that we are lacking." This is partly due to a lack of research funding as well as limited researchers in the field of bone health. Furthermore, interviewed experts state that much of the published research focuses solely on either urban or rural areas, and is not representative of the Malaysian population as a whole. Countrywide data becomes particularly important in the

context of investigating fractures as a matter of bone health rather than trauma, especially in older populations. The three organisations within the Bone Health Alliance Malaysia, especially the FFNM, are now focusing on developing a national FLS framework and even a hip fracture registry. Dr Chong believes that gathering data from successful FLS initiatives is crucial, adding, "you need to set up this internationally recognised FLS and show [the government] how much money we could save in addition to a reduction in morbidity and mortality in a local setting, as illustrated in other countries who have had established FLS initiatives." Collecting evidence-based, nationwide data would therefore be an important first step to evaluating and addressing the burden of poor bone health in the country.

## The Future of Bone Health in Malaysia

The need for an integrated care approach for the management of bone health in Malaysia is clear, particularly given its ageing population. The first step is recognising that bone health is a priority in any country-wide plan to improve the health outcomes of an ageing population. "The government has to make [bone health] a priority, and then we can actually embark on orders at different levels, at the national, state and local level, to bring different levels of awareness and initiatives," Dato' Dr Lee emphasises. It is critical not just to get healthcare providers on board, but to enable public support for any evidence-based policies that may follow. The development of an integrated care pathway also aligns with the WHO's Decade of Healthy Ageing strategy.<sup>17</sup> In order to establish integrated care pathways for bone health, Malaysia should focus on:

**Expanding FLS across Malaysia.** FLS has been proven to be successful and is popular among local

physicians. However, FLS needs to be expanded to more parts of Malaysia in order to reach a wider population.

Monitoring outcomes and updating practice guidelines. Guidelines regarding the management of diseases related to bone health need to be established and regularly updated in order to develop universal standards of care that can be easily integrated by healthcare professionals into their practice. The Malaysian Clinical Practice Guidelines on the Management of Osteoporosis are currently being updated which is a good start, but continuous monitoring and updating of the guidelines to keep pace with evolving best practices is an important next step.

**Educating healthcare workers.** The Malaysian government needs to invest in educating healthcare workers, particularly in primary care, on bone health. An educated health workforce would provide strong advocacy for bone health in the community, support earlier diagnosis and improve health outcomes for an ageing nation like Malaysia.

#### Gathering local data to drive policy change.

Having evidence of successful FLS, as well as the prevalence and incidence of diseases related to bone health, is critical to driving policy change. A centralised patient registry, alongside the funding of larger-scale epidemiological fracture studies, are also integral to developing successful integrated care pathways for bone health.

### **About this paper**

In March 2021, Economist Impact published a global research program, sponsored by Amgen, entitled *Integrated Care Pathways for Bone Health: An Overview of Global Policies.* <sup>13</sup> This paper is a synthesis of interviews with seven experts and additional desk research conducted independently, focused on applying insights from the global study within the Malaysian context.

The research was conducted by the Economist Impact team. The research for this paper was led by Rohini Omkar and Amanda Stucke, with inputs and analysis from Jocelyn Ho. This briefing paper was written by Jocelyn Ho, and was edited by Maria Ronald.

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**Dr Hui Min Khor**, consultant geriatrician at University Malaya Medical Centre, secretary of Fragility Fracture Network of Malaysia

**Dato' Dr Joon Kiong Lee**, consultant orthopaedic surgeon at Beacon Hospital, president of Fragility Fracture Network of Malaysia

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**Dr Swan Sim Yeap**, consultant rheumatologist at Subang Jaya Medical Centre, vice president of the Malaysian Osteoporosis Society

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