

# Healthy Bones for Healthy Aging:

How the Integrated Care for Older  
People (ICOPE) Model Can Leverage  
Bone Health to Improve Well-Being,  
Sustain Independence and Support  
Health Care Financing

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Strengthening bone health through better integrated care provides a unique opportunity to support millions of older people to live more active, healthy, fulfilling lives within the context of the **United Nations' (UN) Decade of Healthy Ageing** ("the Decade") 2021-2030.<sup>1</sup> The Decade is a global collaboration aligned with the UN Sustainable Development Goals, which focuses on four action areas to improve the lives of older people: age-friendly environments, combatting ageism, long-term care, and integrated care. The Decade was adopted by UN Member States upon recommendation by the WHO Executive Board at the 73<sup>rd</sup> World Health Assembly in May 2020.

As societies around the world age and individuals live longer lives, our strength, mobility and independence will be highly dependent on our bone health, as it plays a crucial role in ensuring older people's ability

“The announcement of the UN Decade of Healthy Ageing sends a clear signal that it is only by working as one, within the United Nations system and with governments, civil society and the private sector, that we will be able to not only add years to life, but also life to years.”

– Dr. Tedros Adhanom Ghebreyesus, Director-General of the World Health Organization

to continue living active and healthy lifestyles for longer. A failure to ensure good bone health can lead to bone fractures associated with significant physical, social, and financial implications. These include loss of mobility and independence; pain and suffering; caregiver burden on families, friends, or relatives; and enormous costs to health and long-term care systems.

As the aging trend grows, ensuring optimal bone health care represents a political imperative for leaders worldwide. The near-perfect alignment between the surging bone health imperative and the pursuit of healthy aging through the Decade creates urgency for action. The Integrated Care for Older People (ICOPE) framework represents an important means of integrating the prevention, treatment, and rehabilitation of fragility fractures into the routine course of care for older people.

## The Undeniable Alignment Between Bone Health and Healthy Aging

One billion people worldwide are currently aged 60 years or older—a number projected to increase to 1.4 billion by 2030 and 2.1 billion by 2050, nearly a quarter of the world’s population.<sup>2</sup> The UN Decade represents an unprecedented global effort to extend healthy, active life in older age.<sup>3</sup> The Decade provides a powerful, coordinated multi-stakeholder response to aging demographics, bringing together governments, civil society, international agencies, professionals, academia, the media and the private sector.

The Decade aims to empower older people to maintain their independence and functional capacities, allowing them to remain healthy and productive for longer; stay connected with family and friends; remain active and mobile; and continue doing all the things that make life meaningful. Bone health is inextricably linked to these goals. Good bone health ensures that older people remain mobile and independent. It preserves the strength and agility essential to safely undertake daily living tasks, such as cooking, cleaning, shopping, dressing and enables older people to remain productive members of society by working, traveling, and engaging with family and friends.

## Osteoporosis and Aging—The Biggest Risk Factors for Fragility Fractures

By 2025, 13.5 million older people will suffer broken bones from low energy trauma—also known as fragility fractures—every year.<sup>4</sup> In many countries bone health is not integrated into primary health care for older people. This means that there is little awareness around fracture prevention, and many barriers to accessing timely quality treatment exist. When fractures do occur, many go untreated due to gaps in care coordination and integration of rehabilitation services across the healthcare continuum, placing older people at greater risk for further fractures. A staggering 80% of people with fragility fractures are not being diagnosed and treated with effective therapies, according to the International Osteoporosis Foundation.<sup>5</sup>

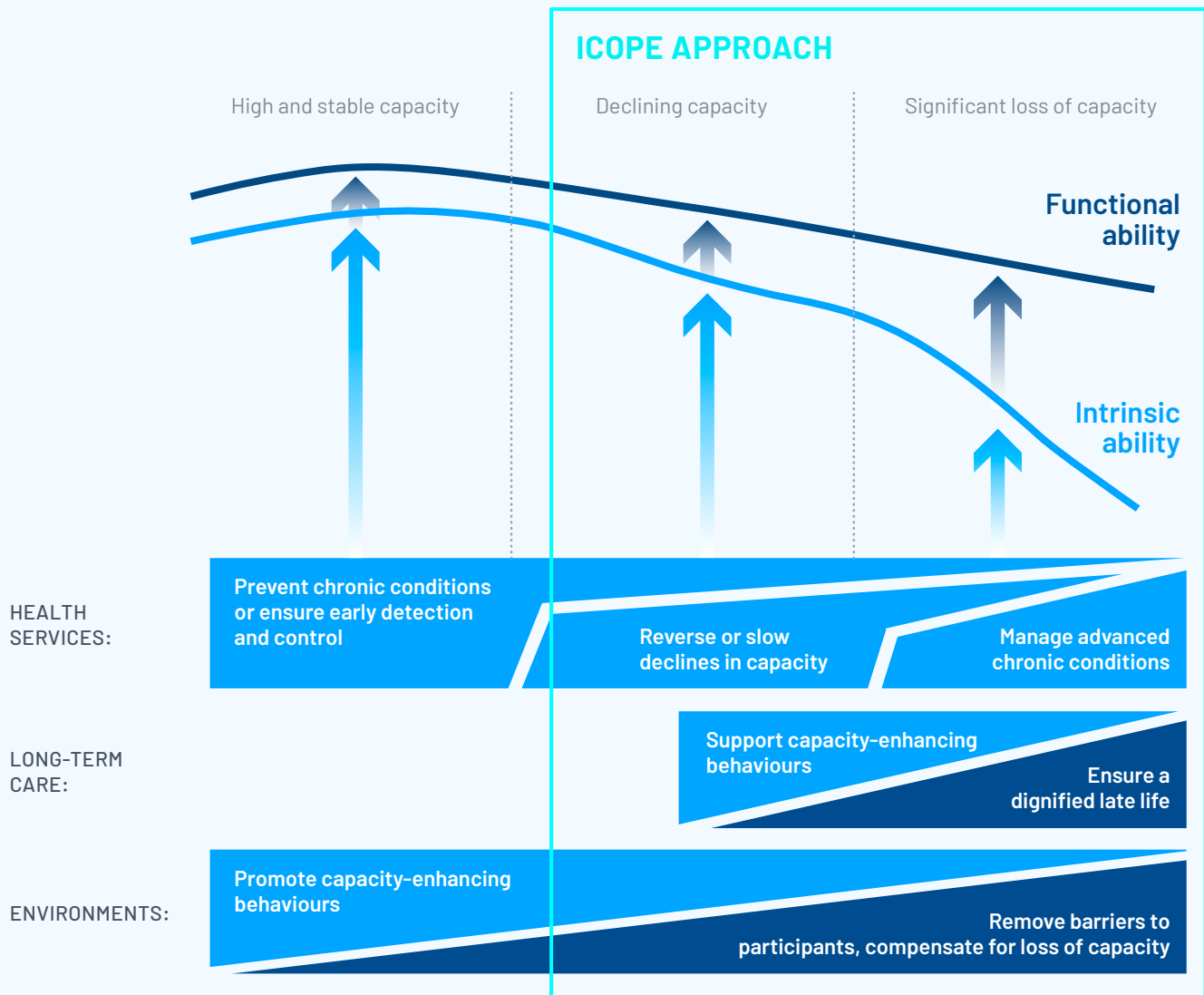
Inadequate treatment and rehabilitation put people at serious risk of further fractures. In fact, people with an initial fracture are five times more likely to suffer a second fracture.<sup>6</sup> Unless we seize the opportunity to transform our approach to bone health, rising rates of osteoporosis—and associated fragility fractures—will hinder the achievement of the goals outlined as part of UN Decade of Healthy Ageing.

Two of the largest risk factors for fragility fractures are age and osteoporosis, a disease that weakens bone density and makes people more vulnerable to fractures, typically to the hip, wrist, or spine. For these reasons, bone health represents an essential component of healthy aging and reaching the UN Decade goals. With more populations worldwide living longer than at any time in history, it is projected that approximately 500 million people will live with osteoporosis in the next five years.<sup>7</sup> As a result, nearly half of all women and 20% of men over 50 years of age will suffer a fragility fracture at some point in their lives.<sup>8</sup> By 2050, hip fractures are projected to increase by 310% in men and 240% in women.<sup>9</sup>

## Why Is Focusing on Fracture Prevention So Important to Both Patients and Health Care Systems?

According to a recent study published in the peer-reviewed journal *Geriatric Orthopaedic Surgery & Rehabilitation (GOS)*, half of patients over 60 who sustain fall-related hip fractures never return to their prior level of mobility. More than eight out of 10 (85%) of these hip fracture patients require assistance with walking, and 20% require nursing home care. Once a first fracture is sustained, older people are two to four times more likely to suffer a second hip fracture. Ultimately, mortality rates for people who sustain a second fracture increase by 95%.<sup>10</sup>

From an economic standpoint, fragility fractures cost the global healthcare system \$USD 400 billion per year<sup>11</sup>—a figure set to double by 2050. In Europe alone the total direct costs of osteoporotic fractures are projected to rise from €32 billion per year in 2005 to €37 billion in 2025.<sup>12</sup> The cost of treating hip fractures alone across Asia is estimated at nearly 19% of GDP.<sup>13</sup> In the United States (U.S.), the combined cost of all osteoporotic fractures was \$USD 20 billion as of 2002. By 2025, the combined cost of all osteoporotic fractures will be \$USD 25.3 billion dollars.<sup>14</sup>



Source: World Health Organization, 2015

**WHO's ICOPE pilot program** is using an integrated care model to identify and slow signs of physical and mental declines in people as they age. Through the ICOPE approach, older people are being connected with effective treatment centers and support services as part of an overall WHO strategy to promote healthy aging globally.

WHO ICOPE pilots can help establish a common framework to address the physical, emotional, and cognitive needs of the world's growing aging population.

## How Can the ICOPE Model Help Achieve the Goals of the Decade of Healthy Ageing by Way of Better Bone Health?

One of the four action areas of the UN Decade of Healthy Ageing is access to quality integrated care including prevention guidelines to slow down physical and mental capacities of older people.<sup>15</sup> ICOPE guidance offers a proven and effective framework for integrated care for older people. It provides evidence-based guidance for early intervention to detect and manage declines in bodily functions, including vision, hearing, locomotion, falls, depression, cognition, nutrition, and urinary incontinence. It also addresses the key social and environmental threats to health and wellbeing with aging, such as loneliness, support with activities of daily living, finances, accommodation, violence against older people and social participation.

The implementation of ICOPE guidance offers an important opportunity to prevent primary and secondary fragility fractures—an objective that is currently absent from the approach—and therefore contribute to ensuring healthy, active aging for older people.

“ICOPE guidance provides a framework for national governments and local system leaders to implement evidence-based best practice in preventive care for older people, which is person-centered and integrates the contributions from all sectors. It addresses the principal threats to independent functioning due to declines with ageing and the social and environmental factors which mitigate or exacerbate these threats.”

– Yuka Sumi, Ageing and Health Unit Department of Maternal, Newborn, Child & Adolescent Health & Ageing, World Health Organization

“Integrating ICOPE guidance for falls prevention with best practice in preventing fragility fractures may be the breakthrough needed so that the great majority of people who could and should benefit but currently do not benefit can access the care that they need.”

– Professor Finbarr Martin, Consultant Physician at Guys and St Thomas’ NHS Foundation Trust



**Preventing the second fracture:** Secondary fracture prevention is an important starting point given that there are already clearly defined post-fracture populations, allowing for a relatively easy integration of ICOPE into post-fracture services. Policymakers in various countries are already focusing on this opportunity. For example, a long-standing advocate of ICOPE, super-aging Japan recently adopted new reimbursement schemes to help improve rehabilitation and prevent secondary fractures by providing coverage for visits to facilities that provide holistic care, including a multidisciplinary approach based on Fracture Liaison Services (FLS).<sup>16</sup>

**Aligning primary care with aging realities:** The annual incidence of hip fracture in Japan is estimated to rise from approximately 190,000 new fractures in 2012 to 320,000 in 2040, attributable to the aging of Japan's population.<sup>17</sup> Due to the volume of hip fractures in Japan, a comprehensive care approach is becoming integral to the Japanese government's response—a step in the right direction for public health. The ICOPE approach supports the transformation currently occurring in primary care services around the globe.

“Given the policy focus on post-fracture care, this will be an ideal setting to implement integrated ICOPE-Bone Health guidance in Japan. The evidence provided through ICOPE is needed for further incentives to improve the comprehensive geriatric care for secondary prevention.”

– Hidenori Arai, MD, PhD, Board President of the National Center for Geriatrics and Gerontology, Japan

“The transformation of primary care services is a top policy priority in Europe. Implementation of integrated ICOPE-Bone Health guidance will be a key lever to support the transformation of primary care services for older people in Europe.”

– Professor Dr. Liesbeth Borgermans, Ph.D., Department of Public Health and Primary Care Ghent University, Belgium

### **Addressing bone health at a national level:**

In scaling the ICOPE framework globally, it is essential to ensure its integration into national health care systems to establish coordinated care across the care continuum from the prevention of primary fractures and to quality post-fractural care—across high-, middle- and low-income countries.

### **Implementing global imperatives for local**

**impact:** A phased approach with a focus on local adaptation and proof of concept projects, followed by broader spread, evaluation, and uptake at scale for all older people will ensure the effective implementation of the ICOPE framework.

“The fastest growth in aging populations is taking place in low- and middle-income countries. It is therefore imperative that systems of preventive care for older people are adapted for use in these countries. In Pakistan we are developing methods for adapting and implementing integrated ICOPE-Bone Health guidance.”

– Muhammad Zafar Iqbal Hydrie, MBBS, MPhil, PhD, Professor (Public Health/Epidemiology), School of Public Health, Dow University of Health Sciences

“Building on international research since 1989 in person-centered preventive care for older people, Age Care Technologies has identified integrated ICOPE-Bone Health projects as critical research for achieving healthy aging globally.”

– Ian Philp, Founder Age Care Technologies and WHO advisor in Person-centered Care for Older People

“The global Fragility Fracture Network looks forward to opportunities to undertake integrated ICOPE-Bone Health projects in post-fracture care settings across all WHO regions.”

– Professor David Marsh, Emeritus Professor of Orthopaedic Surgery at the University of London

## Revolutionizing Our Approach Toward Bone Health

Integrating ICOPE can revolutionize our approach to how fractures are treated both in terms of patient outcomes and health care savings. The integration of bone health into ICOPE will ensure a holistic, person-centered approach to osteoporosis and help prevent millions of primary and secondary fragility fractures—adding healthy life years for every affected older person. The potential economic benefits are staggering. In the U.S. alone, adding one extra year of healthy, active life would generate an economic benefit of at least USD \$50 trillion, according to one recent study.<sup>18</sup> In the United Kingdom (UK), consumption in this age group is set to rise from £319 billion (54% of total consumption) to £530 billion (63%).<sup>19</sup>

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A new strategy to address osteoporosis and promote bone health through integrated care will help empower healthy and active aging. An integrated care approach can:

- Provide older people with the opportunity for greater mobility and independence, reduced suffering and longer, healthier life.
- Change how health care professionals and individuals think and act toward bone health in older age.
- Alleviate the financial and emotional burden on family caregivers and improve their quality of life.
- Reduce healthcare costs associated with aging populations.
- Achieve critical goals of the UN Decade of Healthy Ageing

The UN Decade of Healthy Ageing represents an important opportunity to ensure health care systems worldwide are more responsive to the needs of a growing aging population. The need to transform health care strategies to prioritize early recognition of age-related declines in health, diagnosis, prevention and treatment of the diseases that accompany aging is self-evident.<sup>20</sup> Bone health needs to be central to that transformation.

A world where older people can remain healthy, active, mobile, and independent into their 80s, 90s and beyond is within our reach. We know the diseases we need to target. We understand the potentially transformative power of the ICOPE model. All we need now is the political commitment and stakeholder engagement to make this world a reality.

“Prevention of fragility fractures in older people has become a public health priority. Implementation of integrated ICOPE-Bone Health guidance (including pharmacological and non-pharmacological interventions such as nutritional advice, exercise, and other lifestyle changes) would help to reduce the fracture and osteoporosis related frailty, disability, morbidity, and mortality in the older population.”

- Professor Mario Barbagallo, MD, PhD, Professor of Geriatrics, President of IAGG-ER - International Association of Gerontology and Geriatrics - European Region

# Endnotes

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## **About Global Coalition on Aging Bone Health Initiative**

The Global Coalition on Aging (GCOA) convened its Bone Health Initiative (BHI) in 2022 with the goal of elevating bone health on the global public health agenda. By bringing together a partnership of leading scientists, clinicians, policy experts, advocates and business leaders with expertise from across osteoporosis, aging and public health, the BHI aims to leverage the UN/WHO Decade of Healthy Ageing as a unique moment to emphasize the importance of bone health through the healthy aging lens, with a focus on the prevention, treatment and rehabilitation of fragility fractures. Through communications, education, advocacy and cross-discipline collaboration, the BHI is focused on aligning policy change and healthcare practice with 21<sup>st</sup>-century healthy aging realities to thereby ensure the highest quality of life possible for those with or at risk of osteoporosis and to reduce the costly impact of osteoporosis and fragility fractures on health systems.

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