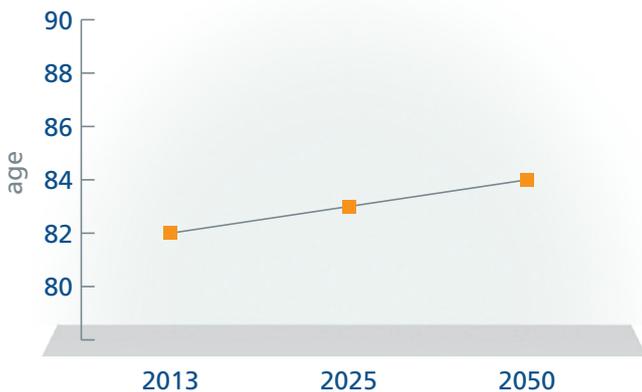


AUSTRALIA

COUNTRY OVERVIEW

Australia is expected to experience a steady rise in population over the coming decades, with an increase of 13% by 2025, from 22.2 million to 25 million, and a further increase of 16% by 2050, reaching 29 million. Australians currently live to an average age of 82 years and life expectancy is projected to gradually increase to 84 years by 2050 (Figure 1). Those aged over 50 years constitute 33% of the total population, and with the ageing demographic this proportion will rise to 41% in 2050, from 7.3 million today to 11.8 million in 2050 (Figure 2). The burden of osteoporosis is certain to increase in the coming decades especially since those aged over 70 years will go from 2.2 million to almost 5 million in 2050. This represents a 123% increase, and at that point, the elderly will make up 17% of the population¹.

FIGURE 1 Life expectancy in Australia



State of osteoporosis/osteopenia

Approximately 1.2 million Australians aged over 20 years have osteoporosis, and a further 6.3 million have osteopenia. Thus, 34% of the population has low bone density. Focusing on Australians aged over 50 years, a new report indicates that 66% in this age group have poor skeletal health: 1.04 million with osteoporosis



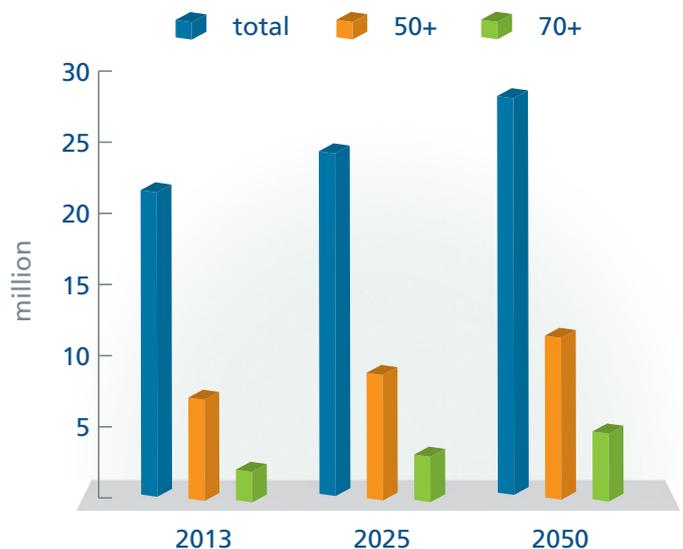
CURRENT

Population **22.2 million**
 Aged over 50 years **33%**
 Life expectancy **82 years**
 Hip fracture incidence per year **295/100,000** (women)
 Cost per hip fracture **21,824–31,605 USD**
 Number of DXA per million population **18**
 Fracture liaison services **10-25% of hospitals**
 National health priority status **since 2002**

PROJECTED 2050

Population **29 million** ↑
 Aged over 50 years **41%** ↑
 Life expectancy **84 years** ↑

FIGURE 2 Population projection for Australia

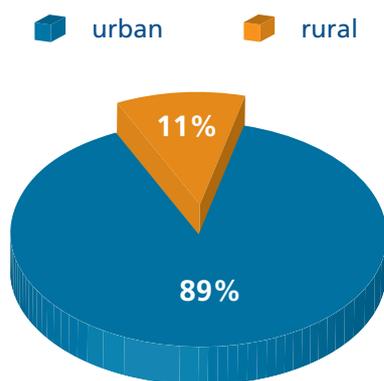


and 3.7 million with osteopenia². Osteoporosis is mainly accounted for in Australian women (81%), and occurs predominately in people aged 50 years and over (85.8%)³. The residual lifetime fracture risk for Australians aged older than 50 years varies by region and sex, and is approximately 27% and 44% for men and women, respectively⁴. The majority of these fractures are non-vertebral, non-hip fractures.

Lifestyle

It is estimated that 31% of Australian adults are vitamin D deficient (<50 nmol/L)^{5,6}. A similar proportion of adults have inadequate dietary calcium intake. Consistent with findings in other areas of the Asia-Pacific region, the diagnosis of osteoporosis was more prevalent among those who live in major cities than the 12% living in rural and remote locations (Figure 3)⁷. In Australia, it is currently unknown whether this may be due to the decreased sun exposure and lower activity levels in urban areas, or if it is because people living in cities are more likely to seek medical care due to closer proximity of care providers.

FIGURE 3 Urban versus rural population in Australia⁸



Level of awareness

Osteoporosis Australia is very active in promoting public awareness of osteoporosis. Recently two major campaigns were launched with a focus on prevention. The ‘How Dense Are You’ media campaign, launched to coincide with World Osteoporosis Day in 2012, raised awareness of risk factors for osteoporosis, particularly in adults aged over 50 years. The ‘Healthy

Bones Australia’ website targets a younger audience with interactive tools to help users calculate their ‘healthy bones score’. A current/future priority is education of general practitioners to raise awareness of the importance of bone health and improve diagnosis and management of osteoporosis.

FRACTURE RATES

During 2012, it is estimated that 140,822 adults aged over 50 years with osteoporosis or osteopenia (T-score ≤ -1) sustained a low trauma fracture (Table 1)². This is an increase from that shown by 2007–2008 hospital data which estimated 52,730 fragility fractures occurred in those aged over 40 years, including 17,192 hip fractures⁹. More optimistically, however, a recent national study shows the age-related incidence of hip fracture is decreasing in both women and men, with decreases being more marked in women¹⁰. From 1997–2007 the decrease was 20% in females from 370 to 295 per 100,000 per year and 13% in males from 200 to 174 per 100,000 per year¹⁰. However, the absolute number of hip fractures continues to increase due to population ageing.

TABLE 1 Number of fractures in Australians aged over 50 years in 2012²

FRACTURE SITE	NUMBER OF FRACTURES 2012–2013
Hip	22,981
Wrist	20,077
Spine	25,502
Other*	72,262

*all other fracture sites except fingers and toes

There is also a higher, and increasing, rate of hip fracture in Aboriginal and Torres Strait Islander populations with indigenous men twice as likely to fracture their hip compared with non-indigenous males and Indigenous women at 26% increased risk of hip fracture¹¹. Indigenous Australians were on average much younger than other Australians at the time of their hip fracture, aged 65 years (compared with 81 years) for males and 74 years (compared with 83 years) for females. Currently, more than 90% of hip fractures in Australia are managed surgically, and the average wait-time for surgery is 1–2 days.

In the state of New South Wales, 35% of minimal trauma fracture admissions from 2002–2008 presented to hospital with a re-fracture. Up-to-date epidemiological data on re-fracture are lacking, however, prospective studies have shown a benefit in reducing re-fractures by the introduction of fracture liaison services¹².

Osteoporosis Australia has commissioned a study to address this and other issues concerning osteoporosis in Australia². This study is due for completion in late 2013. Re-fracture prevention is a priority area for resourcing and development, and Osteoporosis Australia is currently seeking funding to initiate clinical services to address this.

COST OF FRACTURE

The direct cost of osteoporotic fractures in Australia in 2012 was USD 1.65 billion (AUD 1.76 billion) per year, and the total cost of osteoporosis (pharmaceutical, DXA, medical visits plus (direct and indirect) cost of all fractures in adults >50 years with OP or osteopenia) in 2012 was USD 2.58 billion (AUD 2.75 billion)². Current data on the cost of hip fracture in Australia have just been released in the ‘Burden of Disease Study’ commissioned by Osteoporosis Australia. The cost of a hip fracture case varies slightly by the age of the patient ranging from USD 21,824 (AUD 23,276) for those aged 50–69 years, to USD 31,605 (AUD 33,576) for those aged over 70 years with an average hospital stay of 7–12 days (Table 2)².

TABLE 2 Hip fracture in Australia

HOSPITAL COSTS PER HIP FRACTURE (USD)	AVERAGE HOSPITAL BED DAYS	SURGICALLY TREATED
\$21,824–31,605	7–12	>90%

FRACTURE REGISTRIES

Australia is currently developing a hip fracture registry that will run on the national level and collect data from individual States as well as from New Zealand. The planning phase is well underway with pilots running in two states in Australia. Meanwhile, Western Australia is already collecting fracture data at the state level through an electronic registry, whilst New South Wales’ registry is using a paper-based system.

When up and running, the national hip fracture registry will collect data on the Australian and New Zealand population aged over 50 years with hip fractures.

FRACTURE LIAISON SERVICES

There are approximately 23 hospitals in Australia that have implemented a fracture liaison service, representing an implementation rate of 10–25%.

SPECIALISTS RESPONSIBLE FOR OSTEOPOROSIS

Primary care physicians (general practitioners/family doctors) manage the majority of the osteoporosis care in Australia. They are supported by gynaecologists, endocrinologists, rheumatologists, and geriatricians, all of whom receive some medical training in osteoporosis care at medical school. Orthopaedic surgeons are primarily involved in fracture repair.

GOVERNMENT POLICIES

Osteoporosis as a documented national health priority

Osteoporosis was officially documented as a national health priority in 2002 as mandated by the ministry of health <http://www.aihw.gov.au/national-health-priority-areas/>.

Currently, public health programmes focus on nutrition (vitamin D & calcium) and exercise. Expansion of these programmes to include other initiatives, such as falls prevention, is currently under negotiation.

Guidelines

The guideline, ‘Clinical guideline for the prevention and treatment of osteoporosis in postmenopausal women and older men’ was published in 2010 by the Royal Australian College of General Practitioners, and has been endorsed by the National Health and Medical Research Council (NHMRC).

These guidelines address fracture risk assessment and treatment including prior fracture, age and bone mineral density (BMD) score, and tend to be more robust in recommendations than the government’s reimbursement level for diagnostics and treatment. For example the guidelines recognize recurrent falls and family history as major risk factors to trigger BMD testing. Yet, there is no government

reimbursement for the cost of BMD testing for people with these risk factors.

Another guideline document, ‘Building healthy bones throughout life: an evidence-informed strategy to prevent osteoporosis in Australia’ was published in the *Medical Journal of Australia* in 2013¹³. This is an evidence-informed set of recommendations for consumers, health care professionals and policymakers. The strategy was adopted by consensus at the Osteoporosis Australia Summit in Sydney, 20 October 2011.

TABLE 3 Osteoporosis treatments and respective reimbursement in Australia

	YES	NO	IF YES, % REIMBURSED
Risedronate	x		Patient is responsible for a USD 34.05 co-pay
Alendronate	x		Patient is responsible for a USD 34.05 co-pay
Ibandronate		x	
Zoledronic acid	x		Patient is responsible for a USD 34.05 co-pay
Clodronate		x	
Pamidronate		x	
Raloxifene	x		Patient is responsible for a USD 34.05 co-pay
Bazedoxifene		x	
Denosumab	x		Patient is responsible for a USD 34.05 co-pay
Strontium Ranelate	x		Patient is responsible for a USD 34.05 co-pay
Teriparatide	x		Patient is responsible for a USD 34.05 co-pay
PTH (1-84)		x	
Vitamin D/Ca supplements		x	
Calcitonin		x	
Hormone Replacement Therapy		x	
Testosterone	x		For deficiency in males only
Alfacalcidol		x	
Calcitriol	x		Patient is responsible for a USD 34.05 co-pay

Audit and quality indicator systems

Audit and quality indicator systems for the care of osteoporosis patients have not been implemented in Australia.

TREATMENT

Australia operates a national health system covering the health-care costs in its population; with the patients responsible for a co-payment.

Reimbursement for osteoporosis treatment is not based on a percentage of the drug’s cost, but rather patients contribute a maximum ‘co-payment’ for each prescription. In 2013, the maximum patient co-payment is 34.05 USD (AUD 36.10) per prescription (*Table 3*). For concession holders (pensioners, students, disabled etc.), the co-payment is USD 5.54 (AUD 5.90). The Australian government pays the remaining cost of the drug.

There are conditions, however, associated with reimbursement and sometimes these interfere with treatments that physicians would normally recommend to their patients. For example, reimbursement for primary prevention is only reimbursed in those aged above 70 years who have a T score ≤ -2.5 . Other conditions associated with reimbursement include: prior fracture, secondary prevention, whether the drug is a first-or second-line treatment, and the requirement for an authorization.

Designated first-line treatments in Australia include alendronate, risedronate, zoledronic acid, denosumab, strontium ranelate, raloxifene and calcitriol. Teriparatide is a designated second-line treatment.

DIAGNOSTICS

Access to diagnostics is readily available in Australia with 18 DXA machines available per one million of the population¹⁴. Generally, there is no waiting time for a scan and DXA, which costs between USD 80– 202 (AUD 85-214), is reimbursed for the most part except in atypical cases such as in younger postmenopausal women, where it is not reimbursed (*Table 4*).

Studies have shown that, in capital cities, men and women were both around 3-times more likely to undergo the investigation than those in remote areas⁷.

TABLE 4 Diagnostics access and cost in Australia

	DXA	ULTRASOUND
Waiting time (d)	0	0
Cost (USD)	\$80-202	\$30
Is it reimbursed?	yes for certain indications	no
Is reimbursement a barrier to access to treatment?	yes, particularly in young post-menopausal women	no

RECOMMENDATIONS

Despite musculoskeletal diseases being an Australian national health priority, osteoporosis remains an under-diagnosed and under-treated disorder, particularly in men. Population ageing means the population at risk is estimated to increase to at least 11.8 million by 2050, with increased associated health and disability costs.

A systems-based approach including, increased numbers of fracture liaison services, establishment of a national Hip Fracture Registry, and improved access to DXA scans at the time of menopause for women with risk factors for osteoporosis are all needed to address this growing public health problem.

Despite these demonstrated needs and opportunity, Australia is currently lagging behind some countries in the development of fracture prevention services and equity of access to bone densitometry for those at risk of fractures. Osteoporosis Australia is an advocate for change and abundant scientific evidence is present, however, neither State nor Commonwealth governments have been successfully engaged to date. Now is the time for commitment to this Australian national health priority.

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