

Epidemiology and economic burden of osteoporosis in Poland

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Introduction

The scorecard summarises key indicators of the burden of osteoporosis and its management in the 27 member states of the European Union, as well as the UK and Switzerland (termed EU27+2) [1]. This country-specific report summarises the principal results for Poland.

Methods

The information obtained covers four domains: burden of osteoporosis and fractures; policy framework; service provision; and service uptake. Data were collected from numerous sources including previous research and IOF reports, and available registers which were used for additional analysis of resource utilization, costing and HRQoL data. Furthermore, country-specific information on osteoporosis management was obtained from each IOF member state via a questionnaire.

Burden of disease

The direct cost of incident fractures in Poland in 2019 was €332.9 million. Added to this was the ongoing cost in 2019 from fractures that occurred before 2019, which amounted to €347.3 million (long-term disability). The cost of pharmacological intervention (assessment and treatment) was €13.5 million. Thus, the total direct cost (excluding the value of QALYs lost) amounted to €693.7 million in 2019. Key metrics are presented in Table 1.

In 2019, the average direct cost of osteoporotic fractures in Poland was €18.3 per individual in the population, while in 2010 the average was €17.7 (after adjusting for inflation), giving an increase of 3% (€18.3 versus €17.7). The 2019 data rank Poland in 28th place in terms of highest cost of osteoporotic fractures per capita in the EU27+2.

The cost of osteoporotic fractures in Poland accounted for approximately 2.2% of healthcare spending (i.e. €694 million out of €30.8 billion in 2019), less than the EU27+2 average of 3.5%.

Using World Health Organization diagnostic criteria for osteoporosis based on the measurement of bone mineral density (BMD) [2], there were approximately 1,985,000 individuals with osteoporosis in Poland in 2019, of whom more than 80% were women. The prevalence of osteoporosis in the total Polish population amounted to 4.8%, somewhat lower than the EU27+2 average (5.6%).

Table 1 Key measures of burden of disease for Poland

Category	Measure	Estimate	Rank
Burden of disease	Direct cost of incident fracture (€m)	332.89	
	Long-term disability cost (€m)	347.32	
	Intervention cost (€m)	13.52	
	Total cost (€m)	693.73	
	QALYs lost (€m)	2172	
	Cost per capita (€)	18.27	28
	Proportion of healthcare spending	2.2%	25
	Prevalence of osteoporosis	4.8%	24

There were estimated to be 206,000 new fragility fractures in Poland in 2019, equivalent to 563 fractures/day (or 23 per hour). This was a slight increase compared to 2010, equivalent to an increment of 1.7 fractures/1000 individuals, totalling 14.3 fractures/ 1000 individuals in 2019.

Some osteoporotic fractures are associated with premature mortality [3]. In Poland, the annual number of deaths associated with a fracture event was estimated to be 113 per 100,000 individuals of the population aged 50 years or more, compared to the EU27+2 average of 116/100,000. The number of fracture-related deaths is comparable to or exceeds that of some of the most common causes of death such as lung cancer, diabetes, chronic lower respiratory diseases.

The remaining lifetime probability of hip fracture (%) at the ages of 50 years in men and women was 4.0% and 9.7%, respectively, Poland in the bottom tertile of risk for both men and women.

The population of men and women age 50 years or more is projected to increase by 16.6% between 2019 and 2034, somewhat higher than the EU27+2 average of 11.4%. The increases in men and women aged 75 years or more are even more marked and amount to 92.4% and 60.8%, respectively. The annual number of osteoporotic fractures in Poland is expected to increase by 61,000 to 267,000 in 2034.

Policy framework (Table 2)

Documentation of the burden of disease is an essential prerequisite to determine the resources that should be allocated to the diagnosis and treatment of the disorder.

High quality national data on hip fracture rates have been identified in 18 of 29 countries, of which Poland belongs to the remaining 11 countries.

Given that osteoporosis and fragility fractures are common and that effective treatments are widely available, the vast majority of patients with osteoporosis are preferably managed at the primary health care level by general practitioners (GPs), with specialist referral reserved for difficult complex cases. Primary care was the principal provider of the medical care for osteoporosis in 13 of the 28 countries where data were available, and that was not the case for Poland.

Osteoporosis and metabolic bone disease is not a recognised specialty in most countries including Poland. Specialty care of osteoporosis in Poland is managed via other specialties including rheumatology, endocrinology, geriatrics, gynaecology, internal medicine and orthopaedics. Osteoporosis is however recognized as a component of specialty training. Although it is possible that these specialties educate their trainees adequately, the wide variation may reflect inconsistencies in patient care, training of primary care physicians and a suboptimal voice to “defend” the interests of those who work within the field of osteoporosis.

Table 2 Policy framework for osteoporosis in Poland

Category	Measure	Estimate
Policy framework	National fracture data availability	No
	OP recognized as a specialty	No
	OP primarily managed in primary care	No
	Other specialties involved	Rheumatology, Endocrinology, Geriatrics, Gynaecology, Internal medicine, Orthopaedics
	Advocacy areas covered by patient organisation	None

The role of national patient organisations is to improve the care of patients and increase awareness and prevention of osteoporosis and related fractures among the general public. Advocacy by patient organisations can fall into four categories: policy, capacity building and education, peer support, research and development. For Poland, none of the advocacy areas were covered. All four advocacy areas were covered for only 10 out of the 26 countries with at least one patient organisation.

Service provision (Table 3)

A wide variety of approved drug treatments is available for the management of osteoporosis [4]. Potential limitations of their use in member states relate to reimbursement policies which may impair the delivery of health care. Twelve out of 27 countries offered full reimbursement, which was not the case for Poland.

The assessment of bone mineral density forms a key component for the general management of osteoporosis, being used for diagnosis, risk prediction, selection of patients for treatment and monitoring of patients on treatment. In Poland, the number of DXA units expressed per million of the general population amounted to 7.1 which puts the country in 25th place among the EU27+2.

The average waiting time for DXA ranged from 0 to 180 days across countries, and there was no clear relation between waiting times and the availability of DXA. In Poland, the estimated average waiting time for DXA amounted to 42 days. Twenty-one countries reported shorter average waiting times.

Table 3 Service provision for osteoporosis in Poland

Category	Measure	Estimate	Rank
Service provision	Reimbursement of OP medications	30%	
	DXA units/million inhabitants	7.1	25
	DXA cost (€)	22	24
	FRAX risk assessment model available	Yes	
	Fracture liaison service density	1-10%	

Reimbursement for DXA scans varied between member states both in terms of the criteria required and level of reimbursement awarded. In Poland, the reimbursement was conditional.

The effective targeting of treatment to those at highest risk of fracture requires an assessment of fracture risk. Risk assessment models for fractures, most usually based on FRAX, were available in 24 out of 29 countries, of which Poland was one. For Poland, guidance on the use of risk assessment within national guidelines was available, as in only 14 of the other countries.

Guidelines for the management of osteoporosis were available in Poland (as in 27 out of 29 countries). The guidelines in Poland included postmenopausal women specifically, as well as osteoporosis in men and secondary osteoporosis including glucocorticoid-induced osteoporosis.

Fracture liaison services (FLS), also known as osteoporosis coordinator programmes and care manager programmes, provide a system for the routine assessment and management of postmenopausal women and older men who have sustained a low trauma fracture. Fracture liaison services were reported for 1–10% of hospitals in Poland.

The use of indicators to systematically measure the quality of care provided to people with osteoporosis or associated fractures has expanded as a discipline within the past decade [5]. No use of national quality indicators was reported for Poland.

Service uptake (Table 4)

The web-based usage of FRAX showed considerable heterogeneity in uptake between the countries. The average uptake for the EU27+2 was 1,555 sessions/million/year of the general population with an enormous range of 49 to 41,874 sessions/million. The use of FRAX in Poland amounted to 513 sessions/million in 2019, with a 52 percent increase since 2011.

Many studies have demonstrated that a significant proportion of men and women at high fracture risk do not receive therapy for osteoporosis (the treatment gap) [6]. In the EU27+2 the average treatment gap was 71% but ranged from 32 to 87%. For Poland, the treatment gap amongst women amounted to 83% or 1,031,000 out of 1,236,000 characterised at risk. The Polish treatment gap did not change significantly compared to 2010, whilst the average treatment gap among EU27+2 increased from 55% in 2010 to 71% in 2019.

Table 4 Service uptake for osteoporosis in Poland

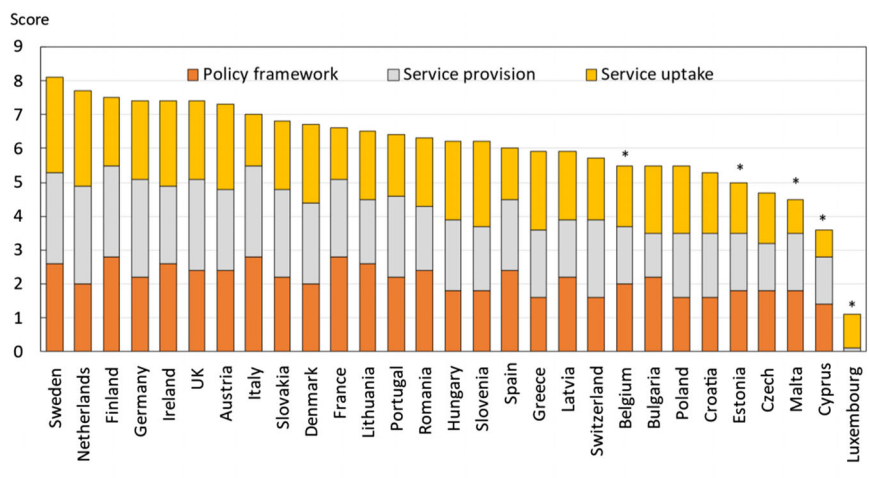
Category	Measure	Estimate	Rank
Service uptake	Number of FRAX sessions/million people/year	513	19
	Treatment gap for women eligible for treatment (%)	83	24
	Proportion surgically managed hip fractures	>90%	

About 5% of people with a hip fracture die within 1 month of their fracture [7]. A determinant of peri-operative morbidity and mortality is the time a patient takes to get to surgery [8]. For Poland, the average waiting time for hip fracture surgery after hospital admission was reported to be less than 24 h, implying a reduction in waiting time compared to 2010 (waiting time of 1–2 days). The proportion of surgically managed hip fractures was reported to be over 90%.

Scores and scorecard

Scores were developed for Burden of disease and the healthcare provision (Policy framework, Service provision and Service uptake) in the EU27+2 countries. Poland scores resulted in a 25th place regarding Burden of disease. The combined healthcare provision scorecard resulted in a 23rd place for Poland. Thus, Poland presents as one of the five low-burden low-provision countries among the EU27+2.

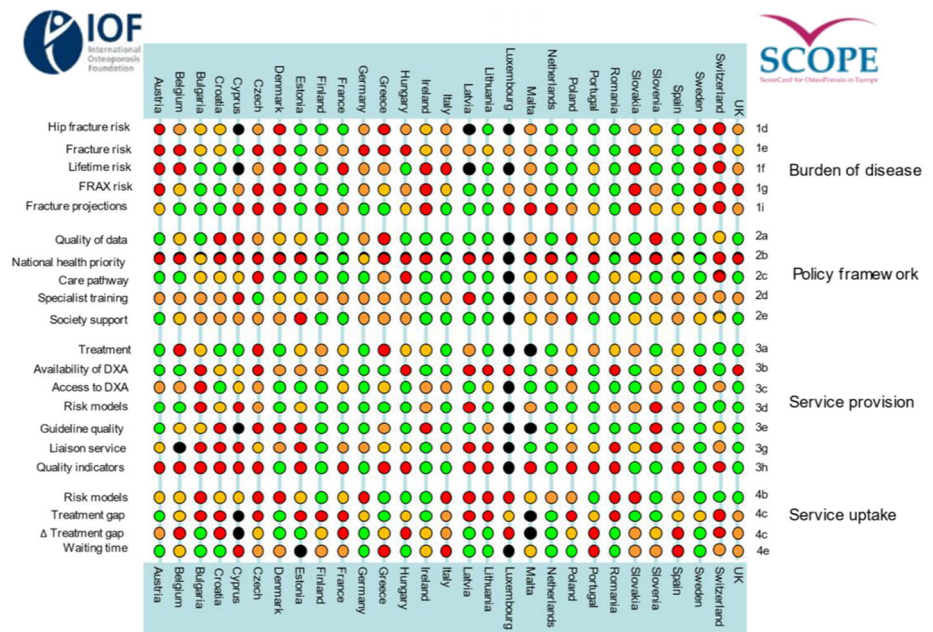
Fig. 1 Scores by country for metrics related to policy framework, service provision and service uptake. The mean score for each of the 3 domains is given. An asterisk denotes that there was one or more missing metric which decreases the overall score



The first SCOPE was undertaken in 2010, almost 10 years previously. Fifteen of the 16 score card metrics on healthcare provision were used in the two surveys. Scores had improved

or markedly improved in 15 countries, remained constant in 8 countries and worsened in 3 countries. For Poland, the scores were much improved.

Fig. 2 The scorecard for all the EU27+2 countries illustrating the scores across the four domains. The elements of each domain in each country were scored and coded using a traffic light system (red, orange, green). Black dots signify missing information



The second edition of the Scorecard for Osteoporosis in Europe (SCOPE 2021) allows health and policy professionals to assess key indicators on the healthcare provision for osteoporosis within countries and between countries within the EU 27+2. The scorecard is not intended as a prescriptive template. Thus, it does not set performance targets but may serve as a guide to the performance targets at which to aim in order to deliver the outcomes required.

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