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# TECHNICAL R E P O R T

## Postmenopausal osteoporosis management

A review of the evidence to  
inform the development of  
quality indicators

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Prepared for Amgen

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## Summary

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Osteoporosis is the most common clinical disorder of bone metabolism. It is characterised by low bone mass and microarchitectural deterioration of bone tissue and consequent increase in bone fragility and susceptibility to fracture. Osteoporotic fractures are a major cause of morbidity; clinical complications include disability and chronic pain. It is estimated that in developed countries around 50 percent of women aged 50 and older will sustain an osteoporotic fracture during their lifetime.

Whilst there is accumulating evidence on approaches to the management of osteoporosis, the overall evidence as to the most effective interventions for the prevention and treatment of osteoporosis and associated fractures remains mixed. There is a need to draw together the available evidence to ensure high quality services are provided to those at risk of developing the condition and associated fractures.

This report aims to inform the development of quality indicators for postmenopausal osteoporosis management through (a) assessing the evidence for screening and diagnosis of osteoporosis and related risk factors, and for prevention and treatment of osteoporosis and osteoporosis-related fractures; (b) describing current practice for managing postmenopausal osteoporosis in Europe; and (c) highlighting existing gaps in the evidence base and management practices in Europe.

We have undertaken two separate sets of analyses. These involved, first, a comprehensive review of reviews as identified from the peer-reviewed and grey literature regarding the screening and diagnosis of osteoporosis and related risk factors and the prevention and treatment of osteoporosis and osteoporosis-related fractures. Secondly, we carried out case study reviews of current practices for managing postmenopausal osteoporosis in England, France, Germany and Spain, with a particular focus on the quality of care provided to those with osteoporosis and associated fractures.

### **There is good evidence on the effects of selected treatments on clinical outcomes of postmenopausal osteoporosis and associated fractures**

Our review of reviews identified a well developed evidence base on the effects of selected treatments on clinical outcomes of postmenopausal osteoporosis and associated fractures, and on the usefulness of selected simple risk factor assessment tools to identify postmenopausal women who would benefit from further diagnostic assessment, such as dual-energy x-ray absorptiometry (DXA) measurement. We acknowledge the limitations of a review of reviews, most importantly the failure to consider more recent original studies that have not yet been included in reviews but which may be relevant and important, as for example emerging evidence examining a possible association between bisphosphonate use

and atypical fractures. Beyond this limitation, it is fair to conclude that considerable uncertainties remain in the evidence base: the optimal use (frequency, quantity, duration) of pharmacological interventions for preventive purposes; the combinations of pharmacological and/or non-pharmacological interventions that may prevent any particular type of fracture; identifying specific populations who might benefit from a given intervention (including populations who have hitherto not been studied); and the effectiveness of population-based screening. In spite of these uncertainties, the available evidence does provide some basis to inform quality improvement in clinical practice, underpinning the development of clinical guidelines in many settings in Europe.

**The evidence on current approaches and practices to managing postmenopausal osteoporosis in England, France, Germany and Spain is complex**

All four countries under review have introduced national-level guidelines for the management of osteoporosis. The extent to which these are implemented and/or adhered to varies, determined, in great part, by whether diagnosis and/or treatment is being reimbursed under the statutory system as well as awareness of the guidance among professionals concerned with the management of the condition.

In all countries reviewed here, there is evidence of under-diagnosis and of under-treatment, although this varies among countries, with Germany at one end of the spectrum with relatively low treatment rates (between one-fifth and one-quarter of potentially eligible women receiving treatment), and Spain at the other. Available literature points to a number of challenges faced by practitioners to implement guidance. These include lack of awareness of and knowledge about the condition, and of understanding of reimbursement mechanisms; uncertainty about responsibilities for management among providers; and restricted access to diagnostic equipment.

Improved information on reimbursement modalities and clarification of responsibilities for the management of osteoporosis and associated fractures and communication between sectors are likely to go some way to enable a more systematic approach to addressing the related societal burden in European populations.

**There is considerable need for the better understanding of current approaches and practices to managing postmenopausal osteoporosis**

Observations made in this study had to draw, to considerable extent, on a rather patchy evidence base, often relying on studies of small samples and/or single providers and with little systematic data collection. Furthermore, evidence that is available frequently relates to data collected in the early 2000s, so findings reported here have to be interpreted with caution.

We have identified a particular need for the establishment of routine monitoring systems to enable better understanding of contemporary patterns and trends and identify care gaps in the management of postmenopausal osteoporosis and associated fractures. Such analyses are crucial to inform targeted strategies and policies to effectively address the burden of osteoporosis and associated fractures, which is sizable and set to increase across Europe.

The systematic use of quality indicators can provide a means to enable tracking care quality. We set out considerations as a starting point for the further development of quality measures for postmenopausal osteoporosis in Europe. Such development might be able to draw, to considerable extent, on experiences in the United States, where a small set of

indicators related to the testing and the management of osteoporosis in women are already being used routinely to monitor the quality of care provided to older patients.