Recommendation 1: Diagnosis of Osteoporosis

For the diagnosis of osteoporosis among individuals attending General Practitioners or other Primary Care Physicians, is recommended evaluating bone mass density with Dual-Energy X-Ray Absorptiometry (DXA) as the diagnostic tool with the highest diagnostic accuracy in osteoporosis, with recommended measurement locations at the lumbar spine (L1-L4) and the hip.

Level of evidence: (I) **Class of recommendation: A**

Recommendation 2: Clinical audit of Osteoporosis

For the better assessment of osteoporosis, is recommended to General Practitioners or other Primary Care Physicians to monitor their patients through assessing body mass index, risk of falls, presence of chronic lumbar pain, limited physical activity, kyphosis, height loss, reduction in the rib-pelvis distance.

Level of evidence: (IV) **Class of recommendation: A**

Recommendation 3: Radiological imaging of Osteoporosis

It is recommended to General Practitioners or other Primary Care Physicians that for the patients with a known or possible spinal fracture suspected by physical examination or history, to order plain radiography of thoracic and lumbar spine. Plain radiography is not recommended for the diagnosis or exclusion of osteoporosis.

Level of evidence: (II) **Class of recommendation: A**

Recommendation 4: Laboratory testing of Osteoporosis

It is recommended to General Practitioners or other Primary Care Physicians in order to complete the laboratory testing during the initial approach of an osteoporotic patient to include: Serum Calcium (corrected for serum albumin), Complete Blood Count, ESR, Serum Creatinine, Alkaline Phosphatase, Thyrotropin Hormone Levels, Phosphate, 25(OH) vitamin D.

Level of evidence: (IV) **Class of recommendation: A**

Recommendation 5: Evaluation of Bone Mass Density

It is recommended to General Practitioners or other Primary Care Physicians, for the diagnosis of Osteoporosis to refer their patients for evaluation of bone mass density whenever any of the following criteria is met:

AGE < 50 years old

- Low force fractures
- Hypogonadism
- Early Menopause (<45 years)
- Malabsorption syndromes
- Primary hyperparathyroidism
- Medication-related loss of bone mass and / or fracture risk (eg steroids, aromatase inhibitors, etc.)
- Other diseases associated with bone loss and / or fracture risk (eg Rheumatoid Arthritis, Cushing Syndrome, Type 1 Diabetes, severe COPD, etc.)

AGE 50-64 years old:

- Low force fractures after the age of 40
- History of parent hip fracture
- Vertebral fracture and / or osteopenic bone imaging in radiography
- Low BMI (<20 kg/m2) and / or weight loss> 10% in one year
- Alcohol consumption (≥ 25-30 g. Daily) and / or smoking
- Other factors and diseases (such as in the age group <50 years old)

AGE ≥ 65 years old:

All men and women

Level of evidence: (IV) **Class of recommendation: A**

Recommendation 6: Fracture risk assessment tool- Frax score (Greek version)

It is recommended to General Practitioners or other Primary Care Physicians, as well as to all Primary Care health professionals the use of the Frax Score-Greek Version as a tool for the detection of individuals with a high fracture risk.

Level of evidence: (I) **Class of recommendation: A**

Recommendation 7: Pharmaceutical options for Osteoporosis in postmenopausal women

It is recommended to General Practitioners or other Primary Care Physicians the use of bisphosphonates (aledronate, risedronate, zoledronate) or denosumab or SERMS (Selective estrogen receptor modulators-raloxifene, bazedoxifene) as the initial treatment for reducing fractures and increasing bone mass density in postmenopausal women with osteoporosis.

Level of evidence: (I) **Class of recommendation: A**

Recommendation 8: Pharmaceutical options for Osteoporosis in postmenopausal women

It is recommended to General Practitioners or other Primary Care Physicians to use teriparatide as treatment in postmenopausal women with osteoporosis and high risk

for fractures, when administration of bisphosphonates or denosumab or SERMS (Selective estrogen receptor modulators) is contraindicated or is not effective.

Level of evidence: (I) **Class of recommendation: A**

Recommendation 9: Pharmaceutical options for Osteoporosis in postmenopausal women and adult men

It is recommended to General Practitioners or other Primary Care Physicians to use strontium ranelate as treatment in postmenopausal women and adult men with osteoporosis and high risk for fractures, with intolerance or non-preference to bisphosphonates, denosumab, teriparatide and SERMS (selective estrogen receptor modulators).

Level of evidence: (I) **Class of recommendation: A**

Recommendation 10: Pharmaceutical options for Osteoporosis in men over 65 years old

It is recommended to General Practitioners and other Primary Care Physicians to use bisphosphonates (aledronate, risedronate and zoledronate) as the initial treatment for reducing fractures and increasing bone mass density in men> 65 years old with osteoporosis.

Level of evidence: (I) **Class of recommendation: A**

Recommendation 11: Pharmaceutical options for Osteoporosis in men over 65 years old

It is recommended to General Practitioners and other Primary Care Physicians to use teriparatide as treatment in men> 65 years old with osteoporosis, who have particularly high risk for fractures and intolerance to bisphosphonates or when the bisphosphonate administration is not effective.

Level of evidence: (II) **Class of recommendation: A**

Recommendation 12: Other Pharmaceutical options for Osteoporosis

Bisphosphonates (aledronate, risedronate, zoledronate) or teriparatide are recommended to General Practitioners or other Primary Care Physicians as effective treatment for reducing fractures and maintaining bone mass density in people over 50 years old who receive treatment with corticosteroids (three months cumulatively during previous year and equivalent dose prednisolone> 7.5mg daily).

Level of evidence: (I) **Class of recommendation: A**

Recommendation 13: Other Pharmaceutical options for Osteoporosis- Vitamin D

It is recommended to General Practitioners and other Primary Care Physicians to assess vitamin D levels, to treat any deficiency by prescribing vitamin D (600-800 IU) and to correct vitamin D levels before the initiation of the main antiosteoporotic treatment in patients with osteoporosis.

Level of evidence: (III-2) **Class of recommendation: A**

Recommendation 14: Other Pharmaceutical options for Osteoporosis- Calcium

It is recommended to General Practitioners and other Primary Care Physicians prescribing calcium supplements in osteoporotic individuals having a low calcium intake, so that the mixed intake (dietary and / or through supplements) is 1200 mg / day.

Level of evidence: (II-2) **Class of recommendation: A**

Recommendation 15: Pharmaceutical options for Osteoporosis in patients with renal failure

It is recommended to General Practitioners and other Primary Care Physicians prescribing denosumab in patients with osteoporosis and severe renal failure (GFR<30 ml/min)

Level of evidence: (I) **Class of recommendation: A**

Recommendation 16: Pharmaceutical options for Osteoporosis in patients risk for breast cancer

It is recommended to General Practitioners and other Primary Care Physicians prescribing raloxifene in postmenopausal women with osteoporosis and increased risk for breast cancer.

Level of evidence: (I) **Class of recommendation: A**

Recommendation 16: Pharmaceutical options for Osteoporosis in patients with prostate cancer

It is recommended to General Practitioners and other Primary Care Physicians prescribing denosumab or bisphosphonates (aledronate, risedronate, zoledronate) in for older men with osteoporosis and prostate cancer treated with antiandrogens.

Level of evidence: (II) **Class of recommendation: A**

Recommendation 16: Pharmaceutical options for Osteoporosis in patients with breast cancer

It is recommended to General Practitioners and other Primary Care Physicians prescribing bisphosphonates (risedronate, zoledronate) or denosumab in women with breast cancer treated with aromatase inhibitors.

Level of evidence: (II) **Class of recommendation: A**

Recommendation 19: Pharmaceutical options for Osteoporosis and Healthcare professionals

It is recommended to General Practitioners or other Primary Care Physicians, as well as to all Primary Care health professionals increased vigilance of due to inadequate patient compliance to medication (Level of evidence I), the under-diagnosis of osteoporotic fractures (Level of evidence III-2) and the under-treatment especially for people with existing fracture. (Level of evidence III-2).

Class of recommendation: A

Recommendation 20: Pharmaceutical options for Osteoporosis according to Frax score- Greek version (Fracture risk assessment tool)

It is recommended to General Practitioners or other Primary Care Physicians for individuals without access to diagnostic tools of evaluating bone mass density or for those with osteopenia, to make the decision of starting medication based on the individual's Frax score (Greek version).

Level of evidence: (I) **Class of recommendation: A**

Recommendation 21: Non-pharmaceutical options for Osteoporosis- general Practitioners and other healthcare professionals

It is recommended to General Practitioners or other healthcare professionals to provide general health and dietary instructions to all patients with osteoporosis in the context of non-pharmacological interventions and more specifically recommendations and training to approach the optimal body weight **(Level of evidence IV),** physical exercise **(Level of evidence II**), adequate and safe exposure to sunlight as a source of vitamin D **(Level of evidence I),** smoking cessation (Level of evidence II), limiting the intake of alcohol and caffeine (Level of evidence IV) and prevention of the risk of falls **(Level of evidence II).**

Class of recommendation: A

Recommendation 22: Non-pharmaceutical options for Osteoporosis- Nurses, nutritionists/dietitians and other healthcare professionals

It is recommended to Nurses, nutritionists/dietitians and other healthcare professionals in Primary Care to acquire skills and knowledge to provide basic education for the patient with osteoporosis by applying models of health behavior in nutrition.

Level of evidence: (IV) **Class of recommendation: A**

Recommendation 23: Non-pharmaceutical options for Osteoporosis-Physiotherapists

It is recommended to General Practitioners or other Primary Care Physicians to cooperate with physiotherapists, who offer their services in primary care, in order to provide individualized exercise programs for patients with osteoporosis.

Level of evidence: (IV) **Class of recommendation: A**

Recommendation 24: Prevention and health promotion for Osteoporosis

It is recommended to General Practitioners or other Primary Care Physicians to promote exercise, smoking cessation and limiting alcohol intake in the general population in the context of prevention of osteoporosis.

Level of evidence: (IV) **Class of recommendation: A**

Recommendation 25: Prevention and health promotion in Osteoporosis - calcium, vitamin D

It is recommended for the prevention of osteoporosis in people who live in institutions or limited indoors the administration of vitamin D (800 IV/day) and calcium 1000-1200mg/day).

Level of evidence: (III-2) **Class of recommendation: A**

Recommendation 26: Prevention and health promotion in Osteoporosis - Falls

It is recommended to General Practitioners or other Primary Care Physicians, as well as to all Primary Care health professionals to detect individuals with falls or an increased risk of falls and to educate them in the prevention of falls with personalized programs, strategies to avoid falls and eliminating modifiable risk factors such as polypharmacy, correcting visual and auditory disorders, treatment of hypotension and other cardiovascular diseases, improve and create a safe home environment (slippery floors, obstructions, poor lighting), using appropriate footwear, strength training and balance.

Level of evidence: (IV) **Class of recommendation: A**

Recommendation 27: Patient Referral

It is recommended to General Practitioners or other Primary Care Physicians to refer a patient with osteoporosis to secondary care or specialized centers for osteoporosis in the following cases:

- Onset at young age (premenopausal).
- Fractures with normal bone mass density.
- Known or suspected causes of secondary osteoporosis (eg, hyperthyroidism, hyperparathyroidism, hypercalciuria, hypogonadism, s. Cushing).
- Non-response to treatment suggested by these recommendations.
- Fractures despite treatment.
- Continuing loss of bone mass in repeated measurements under treatment.

Level of evidence: (IV) **Class of recommendation: A**

Recommendation 28: Patient records

It is recommended to General Practitioners or other Primary Care Physicians, as well as to all Primary Care health professionals to keep a record of the patient with osteoporosis in order to monitor his/her care.

Level of evidence: (IV) **Class of recommendation: A**

Recommendation 29: Domically care

It is recommended to General Practitioners or other Primary Care Physicians, as well as to all Primary Care health professionals to cooperate with services and programs of domically care.

Level of evidence: (IV) **Class of recommendation: A**

Recommendation 30: Health care services and Technology

It is recommended to General Practitioners or other Primary Care Physicians, as well as to all Primary Care health professionals to use telemedicine and rehabilitation technologies for improving the quality of life of patients with osteoporosis.

Level of evidence: (IV) **Class of recommendation: A**

Recommendation 31: Health care services and Non-governmental Organizations

It is recommended to General Practitioners or other Primary Care Physicians, as well as to all Primary Care health professionals to encourage the participation of individuals with osteoporosis to programs and actions of organizations and associations in order to be motivated and improve their quality of life.

Level of evidence: (IV) **Class of recommendation: A**

Practical algorithm