

American Academy of Family Physicians/American Academy of Orthopaedic Surgeons/American Association of Clinical Endocrinologists/American College of Rheumatology/The Endocrine Society/Physician Consortium for Performance Improvement®

**Osteoporosis
Physician Performance Measurement Set**

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Osteoporosis Work Group

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Intended Audience and Patient Population:

All physicians treating patients aged 50 years and older with a hip, spine or radial fracture or managing the on-going care of patients with a diagnosis of osteoporosis (see measures to specific population characteristics)

These clinical performance measures are designed for individual quality improvement. Some of the measures may also be appropriate for accountability if appropriate sample sizes and implementation rules are achieved.

Accountability Measures:

Measure #1: Post-Fracture – Communication with the Physician Managing On-going Care Post Fracture

Measure #2: General Population – Screening or Therapy for Women Aged 65 Years and Older

Measure #3: Post-Fracture – Management Following Fracture

Measure #4: Osteoporosis – Pharmacologic Therapy

Measure #5: Osteoporosis – Counseling for Vitamin D and Calcium Intake and Exercise

Osteoporosis

Measure #1: Communication with the Physician Managing On-going Care Post Fracture

This measure may be used as an Accountability measure – Physician treating the fracture.

Data Elements	Clinical Performance Measure	Feedback
<p>Per Patient, Per Fracture Yes/No – Documentation of hip, spine or distal radial fracture</p> <p>Date of fracture</p> <p>Date of communication</p> <p>Yes/No – Documentation of communication with the physician managing the patient’s on-going care that the patient was or should be tested or treated for osteoporosis</p> <p>Yes/No – Documentation of medical reason(s) for not communicating with the physician managing the patient’s on-going care that the patient was or should be tested or treated for osteoporosis</p> <p>Yes/No – Documentation of patient reason(s) for not communicating with the physician managing the patient’s on-going care that the patient was or should be tested or treated for osteoporosis</p> <p>Sources Electronic medical record</p> <p>Paper medical record</p> <p>Flowsheet</p> <p>Administrative claims data*</p> <p>*adequate data source only if new codes are developed specific to the intent of this measure</p>	<p>Numerator: Patients with documentation of communication with the physician managing the patient’s on-going care that a fracture occurred and that the patient was or should be tested or treated for osteoporosis</p> <p>Communication may include: Documentation in the medical record indicating that the physician treating the fracture communicated (eg, verbally, by letter, DXA report was sent) with the physician managing the patient’s on-going care Or A copy of a letter in the medical record outlining whether the patient was or should be treated for osteoporosis.</p> <p>Denominator: All patients aged 50 years and older treated for hip, spine or distal radial fracture</p> <p>Denominator Exclusion: Documentation of medical reason(s) for not communicating with the physician managing the patient’s on-going care that a fracture occurred and that the patient was or should be tested or treated for osteoporosis</p> <p>Documentation of patient reason(s) for not communicating with the physician managing the patient’s on-going care that a fracture occurred and that the patient was or should be tested or treated for osteoporosis</p> <p>Measure: Percentage of patients aged 50 years and older treated for a hip, spine or distal radial fracture with documentation of communication with the physician managing the patient’s on-going care that a fracture occurred and that the patient was or should be tested or treated for osteoporosis</p>	<p>Per Patient Whether or not the patient aged 50 years and older treated for a hip, spine or distal radial fracture had documentation of communication with the physician managing the patient’s on-going care that a fracture occurred and that the patient was or should be tested or treated for osteoporosis</p> <p>Per Patient Population Percentage of patients aged 50 years and older treated for a hip, spine or distal radial fracture with documentation of communication with the physician managing the patient’s on-going care that a fracture occurred and that the patient was or should be tested or treated for osteoporosis</p>
<p>The following clinical recommendation statements are quoted <u>verbatim</u> from the referenced clinical guidelines and support the rationale:</p> <p>The most important risk factors for osteoporosis-related fractures are a prior low-trauma fracture as an adult and a low BMD in patients with or without fractures. (ACE¹)</p>		

The decision to measure bone density should follow an individualized approach. It should be considered when it will help the patient decide whether to institute treatment to prevent osteoporotic fracture. It should also be considered in patients receiving glucocorticoid therapy for 2 months or more and patients with other conditions that place them at high risk for osteoporotic fracture. (NIH²)

The most commonly used measurement to diagnose osteoporosis and predict fracture risk is based on assessment of BMD by dual-energy X-ray absorptiometry (DXA). (NIH²)

Measurements of BMD made at the hip predict hip fracture better than measurements made at other sites while BMD measurement at the spine predicts spine fracture better than measures at other sites. (NIH²)

BMD measurement should be performed in all women 40 years old or older who have sustained a fracture. (AACE¹)

The single most powerful predictor of a future osteoporotic fracture is the presence of previous such fractures. (AGA³)

Rationale for the measure:

Patients who experience fragility fractures should either be treated or tested for the presence of osteoporosis. Although the fracture may be treated by the orthopedic surgeon, the testing and/or treatment is likely to be under the responsibility of the physician providing on-going care. It is important the physician providing on-going care for the patient be made aware the patient has sustained a non-traumatic fracture. There is a high degree of variability and consensus by experts of what constitutes a fragility fracture and predictor of an underlying problem of osteoporosis. The work group determined that only those fractures, which have the strongest consensus and evidence that they are predictive of osteoporosis should be included in the measure at this time. We anticipate that the list of fractures will expand as further evidence is published supporting the inclusion of other fractures. Data elements required for the measure can be captured and the measure is actionable by the physician.

Instructions: The communication to the physician managing the on-going care of the patient should occur within three months of treatment for the fracture.

Osteoporosis
Measure #2: Screening or Therapy for Women Aged 65 Years and Older

This measure may be used as an Accountability measure.

Data Elements	Clinical Performance Measure	Feedback
<p>Per Patient, Per Year Yes/No – Patient had a central DXA measurement ordered or performed at least once since age 60</p> <p>Yes/No – Patient was prescribed one of the following medications: *U.S. Food and Drug Administration approved pharmacologic options for osteoporosis prevention and/or treatment of postmenopausal osteoporosis include, in alphabetical order: bisphosphonates (alendronate, ibandronate, and risedronate), calcitonin, estrogens (estrogens and/or hormone therapy), parathyroid hormone [PTH (1-34), teriparatide], and selective estrogen receptor modules or SERMs (raloxifene).</p> <p>Yes/No – Documentation of medical reason(s) for not ordering or performing a central DXA measurement or not prescribing pharmacologic therapy</p> <p>Yes/No – Documentation of patient reason(s) for not ordering or performing a central DXA measurement or not prescribing pharmacologic therapy</p> <p>Yes/No – Documentation of system reason(s) for not ordering or performing a central DXA measurement or not prescribing pharmacologic therapy</p> <p>Sources Electronic medical record Paper medical record Flowsheet Administrative claims data*</p> <p>*adequate data source only if new codes are developed specific to the intent of this measure</p>	<p>Numerator: Patients who had a central DXA measurement ordered or performed at least once since age 60 or pharmacologic therapy prescribed within 12 months</p> <p>Denominator: All female patients aged 65 years and older</p> <p>Denominator Exclusion: Documentation of medical reason(s) for not ordering or performing a central DXA measurement or not prescribing pharmacologic therapy</p> <p>Documentation of patient reason(s) for not ordering or performing a central DXA measurement or not prescribing pharmacologic therapy</p> <p>Documentation of system reason(s) for not ordering or performing a central DXA measurement or not prescribing pharmacologic therapy</p> <p>Measure: Percentage of female patients aged 65 years and older who have a central DXA measurement ordered or performed at least once since age 60 or pharmacologic therapy prescribed within 12 months</p>	<p>Per Patient Whether or not the female patient aged 65 years and older who had a central DXA measurement ordered or performed at least once since age 60 or pharmacologic therapy prescribed within 12 months</p> <p>Per Patient Population Percentage of female patients aged 65 years and older who have a central DXA measurement ordered or performed at least once since age 60 or pharmacologic therapy prescribed within 12 months</p>
<p>The following clinical recommendation statements are quoted <u>verbatim</u> from the referenced clinical guidelines and support the rationale:</p> <p>The U.S. Preventive Services Task Force (USPSTF) recommends that women aged 65 and older be screened routinely for osteoporosis. (B Recommendation) (USPSTF⁴)</p>		

The USPSTF recommends that routine screening begin at age 60 for women at increased risk for osteoporotic fractures. Use of risk factors, particularly increasing age, low weight, and nonuse of estrogen replacement, to screen younger women may identify high-risk women. (B Recommendation) (USPSTF)

BMD measurement should be performed in all women beyond 65 years of age. Dual x-ray absorptiometry of the lumbar spine and proximal femur provides reproducible values at important sites of osteoporosis-associated fracture. These sites are preferred for baseline and serial measurements. (AACE¹)

The most important risk factors for osteoporosis-related fractures are a prior low-trauma fracture as an adult and a low BMD in patients with or without fractures. (AACE¹)

BMD testing should be performed on:

1. All women aged 65 and older regardless of risk factors.
2. Younger postmenopausal women with one or more risk factors (other than being white, postmenopausal, and female).
3. Postmenopausal women who present with fractures.

The decision to test for BMD should be based on an individual's risk profile. Testing is never indicated unless the results could influence a treatment decision. (NOF⁵)

Markers of greater osteoporosis and fracture risk include older age, hypogonadism, corticosteroid therapy, and established cirrhosis. (Level B Evidence) (AGA⁶)

The single most powerful predictor of a future osteoporotic fracture is the presence of previous such fractures. (AGA³)

The decision to measure bone density should follow an individualized approach. It should be considered when it will help the patient decide whether to institute treatment to prevent osteoporotic fracture. It should also be considered in patients receiving glucocorticoid therapy for 2 months or more and patients with other conditions that place them at high risk for osteoporotic fracture. (NIH²)

The most commonly used measurement to diagnose osteoporosis and predict fracture risk is based on assessment of BMD by dual-energy X-ray absorptiometry (DXA). (NIH²)

Measurements of BMD made at the hip predict hip fracture better than measurements made at other sites while BMD measurement at the spine predicts spine fracture better than measures at other sites. (NIH²)

Pharmacologic therapy should be initiated to reduce fracture risk in women with:

- BMD T-scores below -2.0 by central dual x-ray absorptiometry (DXA) with no risk factors
- BMD T-scores below -1.5 by central dual x-ray absorptiometry (DXA) with one or more risk factors
- A prior vertebral or hip fracture (NOF⁵)

Rationale for the measure:

Patients with elevated risk for osteoporosis should have the diagnosis of osteoporosis excluded or be on treatment of osteoporosis. Data elements required for the measure can be captured and the measure is actionable by the physician.

Osteoporosis
Measure #3: Management Following Fracture

This measure may be used as an Accountability measure.

Data Elements	Clinical Performance Measure	Feedback
<p>Per Patient, Per Fracture Yes/No – Documentation of hip, spine or distal radial fracture</p> <p>Date of fracture</p> <p>Date of DXA ordered</p> <p>Date of DXA performed</p> <p>Yes/No – Patient had a central DXA measurement ordered</p> <p>Yes/No – Patient had a central DXA measurement performed</p> <p>Yes/No – Patient was prescribed one of the following medications: *U.S. Food and Drug Administration approved pharmacologic options for osteoporosis prevention and/or treatment of postmenopausal osteoporosis include, in alphabetical order: bisphosphonates (alendronate, ibandronate, and risedronate), calcitonin, estrogens (estrogens and/or hormone therapy), parathyroid hormone [PTH (1-34), teriparatide], and selective estrogen receptor modules or SERMs (raloxifene).</p> <p>Yes/No – Documentation of medical reason(s) for not ordering or performing a central DXA measurement or not prescribing pharmacologic therapy</p> <p>Yes/No – Documentation of patient reason(s) for not ordering or performing a central DXA measurement or not prescribing pharmacologic therapy</p> <p>Yes/No – Documentation of system reason(s) for not ordering or performing a central DXA measurement or not prescribing pharmacologic therapy</p> <p>Sources Electronic medical record</p> <p>Paper medical record</p> <p>Flowsheet</p>	<p>Numerator: Patients who had a central DXA measurement ordered or performed or pharmacologic therapy prescribed</p> <p>Denominator: All patients aged 50 years and older with a fracture of the hip, spine or distal radius</p> <p>Denominator Exclusion: Documentation of medical reason(s) for not ordering or performing a central DXA measurement or not prescribing pharmacologic therapy</p> <p>Documentation of patient reason(s) for not ordering or performing a central DXA measurement or not prescribing pharmacologic therapy</p> <p>Documentation of system reason(s) for not ordering or performing a central DXA measurement or not prescribing pharmacologic therapy</p> <p>Measure: Percentage of patients aged 50 years and older with a fracture of the hip, spine or distal radius who had a central DXA measurement ordered or performed or pharmacologic therapy prescribed</p>	<p>Per Patient Whether or not the patient aged 50 years and older patients with a fracture of the hip, spine or distal radius had a central DXA measurement ordered or performed or pharmacologic therapy prescribed</p> <p>Per Patient Population Percentage of patients aged 50 years and older with a fracture of the hip, spine or distal radius who had a central DXA measurement ordered or performed or pharmacologic therapy prescribed</p>

<p>Administrative claims data*</p> <p>*adequate data source only if new codes are developed specific to the intent of this measure</p>		
<p>The following clinical recommendation statements are quoted <u>verbatim</u> from the referenced clinical guidelines and support the rationale:</p> <p>The most important risk factors for osteoporosis-related fractures are a prior low-trauma fracture as an adult and a low BMD in patients with or without fractures. (AAE¹)</p> <p>BMD measurement should be performed in all women 40 years old or older who have sustained a fracture. (AAE¹)</p> <p>The single most powerful predictor of a future osteoporotic fracture is the presence of previous such fractures. (AGA³)</p> <p>The decision to measure bone density should follow an individualized approach. It should be considered when it will help the patient decide whether to institute treatment to prevent osteoporotic fracture. It should also be considered in patients receiving glucocorticoid therapy for 2 months or more and patients with other conditions that place them at high risk for osteoporotic fracture. (NIH²)</p> <p>The most commonly used measurement to diagnose osteoporosis and predict fracture risk is based on assessment of BMD by dual-energy X-ray absorptiometry (DXA). (NIH²)</p> <p>Measurements of BMD made at the hip predict hip fracture better than measurements made at other sites while BMD measurement at the spine predicts spine fracture better than measures at other sites. (NIH²)</p> <p>Pharmacologic therapy should be initiated to reduce fracture risk in women with:</p> <ul style="list-style-type: none"> • BMD T-scores below -2.0 by central dual x-ray absorptiometry (DXA) with no risk factors • BMD T-scores below -1.5 by central dual x-ray absorptiometry (DXA) with one or more risk factors • A prior vertebral or hip fracture (NOF⁵) 		
<p>Rationale for the measure:</p> <p>Patients with a history of fracture should have a baseline bone mass measurement and/or receive treatment for osteoporosis. While the majority of osteoporotic fractures occur in patients with low bone mass, confirmed by bone mass measurement, that is not always the case. Therefore, exclusion of osteoporosis by bone mass testing does not preclude treatment of osteoporosis in a patient with a history of fracture. There is a high degree of variability and consensus by experts of what constitutes a fragility fracture and predictor of an underlying problem of osteoporosis. The work group determined that only those fractures, which have the strongest consensus and evidence that they are predictive of osteoporosis should be included in the measure at this time. We anticipate that the list of fractures will expand as further evidence is published supporting the inclusion of other fractures. Data elements required for the measure can be captured and the measure is actionable by the physician.</p>		

Instructions: The management (DXA ordered or performed or pharmacologic therapy prescribed) should occur within three months of notification of the fracture from the physician treating the fracture. Please note prior DXA status or already on treatment pre-fracture would meet this measure.

Osteoporosis
Measure #4: Pharmacologic Therapy

This measure may be used as an Accountability measure.

Data Elements	Clinical Performance Measure	Feedback
<p>Per Patient, Per Year Yes/No –Patient was prescribed one of the following medications: *U.S. Food and Drug Administration approved pharmacologic options for osteoporosis prevention and/or treatment of postmenopausal osteoporosis include, in alphabetical order: bisphosphonates (alendronate, ibandronate, and risedronate), calcitonin, estrogens (estrogens and/or hormone therapy), parathyroid hormone [PTH (1-34), teriparatide], and selective estrogen receptor modules or SERMs (raloxifene).</p> <p>Yes/No – Documentation of medical reason(s) for not prescribing pharmacologic therapy</p> <p>Yes/No – Documentation of patient reason(s) for not prescribing pharmacologic therapy</p> <p>Yes/No – Documentation of system reason(s) for not prescribing pharmacologic therapy</p> <p>Sources Electronic medical record Paper medical record Flowsheet Administrative claims data*</p> <p>*adequate data source only if new codes are developed specific to the intent of this measure</p>	<p>Numerator: Patients who were prescribed pharmacologic therapy* within 12 months</p> <p>*U.S. Food and Drug Administration approved pharmacologic options for osteoporosis prevention and/or treatment of postmenopausal osteoporosis include, in alphabetical order: bisphosphonates (alendronate, ibandronate, and risedronate), calcitonin, estrogens (estrogens and/or hormone therapy), parathyroid hormone [PTH (1-34), teriparatide], and selective estrogen receptor modules or SERMs (raloxifene).</p> <p>Denominator: All patients aged 50 years and older with the diagnosis of osteoporosis</p> <p>Denominator Exclusion: Documentation of medical reason(s) for not prescribing pharmacologic therapy Documentation of patient reason(s) for not prescribing pharmacologic therapy Documentation of system reason(s) for not prescribing pharmacologic therapy</p> <p>Measure: Percentage of patients aged 50 years and older with a diagnosis of osteoporosis who were prescribed pharmacologic therapy within 12 months</p>	<p>Per Patient Whether or not the patient aged 50 years and older with a diagnosis of osteoporosis was prescribed pharmacologic therapy within 12 months</p> <p>Per Patient Population Percentage of patients aged 50 years and older with a diagnosis of osteoporosis who were prescribed pharmacologic therapy within 12 months</p>
<p>The following clinical recommendation statements are quoted <u>verbatim</u> from the referenced clinical guidelines and support the rationale:</p> <p>Agents approved by the FDA for osteoporosis prevention and/or treatment include (in alphabetical order) bisphosphonates (alendronate, ibandronate, risedronate), salmon calcitonin, estrogen, raloxifene, and teriparatide. All act by reducing bone resorption, except for teriparatide, which has anabolic effects on bone. Although estrogen is not approved for treatment of osteoporosis, there is level 1 evidence for its efficacy in reducing vertebral fractures, nonvertebral fractures, and hip fractures. Level 1 evidence of efficacy in reducing the risk of vertebral fractures is available for all the agents approved for treatment of osteoporosis (bisphosphonates, calcitonin, raloxifene, and teriparatide). Prospective trials have demonstrated the effectiveness of bisphosphonates and teriparatide in reducing the risk of nonvertebral fractures (level 1), but only some of the bisphosphonates</p>		

have been shown to reduce the risk of hip fractures in prospective controlled trials (level 1). (AAACE¹)

US Food and Drug Administration-approved pharmacologic options for osteoporosis prevention and/or treatment of postmenopausal osteoporosis include, in alphabetical order: bisphosphonates (alendronate, alendronate plus D, ibandronate, and risedronate, risedronate with 500 mg of calcium as the carbonate), calcitonin, estrogens (estrogens and/or hormone therapy), parathyroid hormone [PTH (1-34), teriparatide], and selective estrogen receptor modulators or SERMS (raloxifene). (NOF⁵)

Rationale for the measure:

Pharmacologic therapy is an evidence-based recommendation for the treatment of osteoporosis. Data elements required for the measure can be captured and the measure is actionable by the physician.

Osteoporosis
Measure #5: Counseling for Vitamin D and Calcium Intake and Exercise

This measure may be used as an Accountability measure.

Data Elements	Clinical Performance Measure	Feedback
<p>Per Patient, Per Year Date of counseling regarding both calcium and vitamin D intake, and exercise</p> <p>Yes/No – Patient receiving both calcium and vitamin D</p> <p>Yes/No – Patient had documented counseling regarding both calcium and vitamin D intake and exercise</p> <p>Yes/No – Documentation of medical reason(s) for patient not receiving both calcium and vitamin D and not needing counseling regarding both calcium and vitamin D intake, and exercise</p> <p>Sources Electronic medical record</p> <p>Paper medical record</p> <p>Flowsheet</p> <p>Administrative claims data*</p> <p>*adequate data source only if new codes are developed specific to the intent of this measure</p>	<p>Numerator: Patients who are either receiving both calcium and vitamin D or have been counseled regarding both calcium and vitamin D intake, and exercise at least once within 12 months</p> <p>Denominator: All patients, regardless of age, with the diagnosis of osteoporosis</p> <p>Denominator Exclusion: Documentation of medical reason(s) for patient not receiving both calcium and vitamin D and not needing counseling regarding both calcium and vitamin D intake, and exercise (eg, patient has dementia and is unable to receive counseling)</p> <p>Measure: Percentage of patients, regardless of age, with a diagnosis of osteoporosis who either received both calcium and vitamin D or had documented counseling regarding both calcium and vitamin D intake, and exercise at least once within 12 months</p>	<p>Per Patient Whether or not the patient, regardless of age, with a diagnosis of osteoporosis is either receiving both calcium and vitamin D or had documented counseling regarding both calcium and vitamin D intake, and exercise at least once within 12 months</p> <p>Per Patient Population Percentage of patients, regardless of age, with a diagnosis of osteoporosis who are either receiving both calcium and vitamin D intake or had documented counseling regarding both calcium and vitamin D intake, and exercise at least once within 12 months</p>
<p>The following clinical recommendation statements are quoted <u>verbatim</u> from the referenced clinical guidelines and support the rationale:</p> <p>Promote a diet with adequate calcium content (500 to 1,000 mg/day). Promote adequate vitamin D intake (at least 400 IU/day; as much as 800 IU/day in the elderly). (AACE¹)</p> <p>Advise all patients to obtain an adequate intake of dietary calcium (at least 1200 mg per day, including supplements if necessary) and vitamin D (400 to 800 IU per day for individuals at risk of deficiency). (NOF⁵)</p> <p>Supplementation with both calcium and vitamin D (plain or activated form) should be required for glucocorticoid-treated patients. (ACRError! Bookmark not defined.)</p> <p>All patients require education regarding Vitamin D and calcium supplementation. (AGA³)</p> <p>All patients require education regarding the importance of lifestyle changes (e.g., regular exercise, smoking cessation) as well as vitamin D and calcium supplementation. (Level D Evidence) (AGA⁶)</p> <p>All patients should receive education on the importance of lifestyle changes (e.g., engaging in regular weight-bearing exercise, quitting smoking, avoiding excessive alcohol intake). (Level D Evidence) (AGA³)</p> <p>Advocate regular weight-bearing exercise. Minimize risk of falls and injuries with gait and balance training. (AACE¹)</p>		

Advise patients to engage in weight-bearing and muscle-strengthening exercise reduce the risk of falls and fractures. (NOF⁵)

Rationale for the measure:

Vitamin D and calcium and exercise are important in the treatment of osteoporosis. Data elements required for the measure can be captured and the measure is actionable by the physician.

References

- ¹ American Association of Clinical Endocrinologists. *Medical Guidelines for Clinical Practice for the Prevention and Treatment of Postmenopausal Osteoporosis*. 2001 Edition, with selected updates for 2003.
- ² National Institutes of Health. *Osteoporosis Prevention, Diagnosis and Therapy. NIH Consensus Statement*. March 2000;17:1-45.
- ³ American Gastroenterological Association. (2003). American Gastroenterological Association Medical Position Statement: Guidelines on Osteoporosis in Gastrointestinal Diseases. *Gastroenterology* 124, pp 791-794.
- ⁴ U.S. Preventive Services Task Force. *Screening for Osteoporosis in Postmenopausal Women*. Agency for Healthcare Research and Quality. 2002 Update.
- ⁵ National Osteoporosis Foundation. *Osteoporosis: Physician's Guide to Prevention and Treatment of Osteoporosis*. 2003
- ⁶ American Gastroenterological Association. (2003). American Gastroenterological Association Medical Position Statement: Osteoporosis in Hepatic Disorders. *Gastroenterology* 125, pp 937-940.