Health Benchmarks®
Clinical Quality Indicator Specification 2008

Client	HEALTH BENCHMARKS, INC. STANDARD ALGORITHM *Implemented for Blue Cross Blue Shield of Illinois*
Measure Title	OSTEOPOROSIS SCREENING FOLLOWING FRACTURES
Disease State	Osteoporosis **Indicator Classification** Screening
Strength of Recommendation	B
Organizations Providing Recommendation	American Association of Clinical Endocrinologists National Osteoporosis Foundation U.S. Preventive Services Task Force
Clinical Intent	To ensure that women age 51 or older who experience a fracture receive a bone mineral density (BMD) test or pharmacotherapy for osteoporosis during the 6 months after the fracture.
Physician Specialties	Family Practice, General Practice, Internal Medicine, Mixed Specialty, OB-Gynecology, Surgery-Orthopedics

Background

Disease Burden

- The National Health and Nutrition Examination Survey reports approximately 14 million American women 50 years of age are afflicted with osteopenia, and 5 million more have osteoporosis. Increase in age is associated with an increase in risk of osteoporosis and; up to 70 percent of women over age 80 years have osteoporosis. However, the National Osteoporosis Risk Assessment study found that the one-year risk for fracture was similar for postmenopausal women 50-64 years versus greater than 65 years of age.[1-3]
- Women with osteoporosis are at excess risk to experience fractures. As age and prevalence of osteoporosis increase, so does the incidence of hip fracture. Hip fractures are associated with high rates of mortality and loss of independence.[2]
- Fractures resulting from osteoporosis are a major cause of disability and death, especially among the elderly.[4] Less than one third of patients that experience fractures associated with fragility are treated for osteoporosis.[5]
- In the United States, medical expenditure for the treatment of fractures related to osteoporosis in adults over 45 year of age neared $14 billion, with the majority being spent on inpatient care. This cost is likely to rise as the median age of the US population increases.[2, 6]

Reason for Indicated Intervention or Treatment

- In the National Osteoporosis Risk Assessment study, an overall risk of

fractures is greater for women 50-59 years who have a T-score less than -2.0. Early screening and treatment may help to prevent or reduce osteoporosis related fractures later in life.[7]

- Up to 20% of women who suffer a hip fracture will die within one year of the fracture.[8, 9]
- Post-menopausal women with fractures experienced significant decreases in Health Related Quality of Life.[10]
- Screening for osteoporosis offers the opportunity to treat before fracture occurs. Among women who have fractures before osteoporosis has been identified, it is important to determine whether osteoporosis is the cause so that it can be treated before additional fractures occur.[11]

Evidence Supporting Intervention or Treatment

- Among different bone measurement tests performed at various anatomical sites, bone density measured at the femoral neck by dual-energy x-ray absorptiometry (DEXA) is the best predictor of hip fracture and is comparable to forearm measurements for predicting fractures at other sites.[12]
- In one cohort study of 3,107 older adult patients, those who were screened for osteoporosis had 36% fewer incident hip fractures over 6 years compared with usual treatment.[11]
- Applying a Markov model to a randomized, double-blind, controlled study demonstrated that intervention with risedronate for postmenopausal women with osteoporosis was cost-effective for women ages 60 and older (if the woman had a prior vertebral fracture and a BMD T score < -2.5 SD). Using risedronate as a treatment was still deemed as cost-effective for women 65 and older who did not have a prior vertebral fracture but did meet the BMD threshold for osteoporosis (T score < -2.5 SD).[13]
- In postmenopausal women with osteoporosis, a prescription of oral bisphosphonate therapy can increase the fracture benefit and improve cost-effectiveness. Women with osteoporosis who were adherent to medication have a significantly decreased risk of fracture.[14, 15]

Clinical Recommendations

- The American Association of Clinical Endocrinologists recommends routine screening for osteoporosis for all women 65 years and older, all adult women with a history of one or more fractures not caused by severe trauma, and younger postmenopausal women who have clinical risk factors for fractures (such as low body weight, or a family history of spine or hip fracturing).[16]
- The USPSTF recommends that women aged 65 and older be screened routinely for osteoporosis. The USPSTF also recommends that routine screening begin at age 60 for women at increased risk for osteoporotic fractures. [12] The Institute for Clinical Systems Improvement makes similar recommendations.[17]
- The National Osteoporosis Foundation recommends screening with

	BMD test in all women over age 65, younger pre-menopausal women with one or more risk factors, and postmenopausal women at any age who present with a fracture.[18-20]
Source	Adapted from Healthcare Effectiveness Data and Information Set (HEDIS®) 2008 Technical Specification: • HBI modified the age criteria from 67 and older to 51 and older.
Denominator Definition	Continuously enrolled women ages 51 and older, who had a fracture (excluding fractures of the finger, toe, face and skull) at any time during the 1 year period ending 6 months prior to the end of the measurement year.
Denominator Codes	Fracture CPT-4 code(s): 21800-21825, 22305-22328, 22520, 22521, 22523, 22524, 23500-23515, 23570-23630, 23665-23680, 24500-24587, 24620, 24635, 24650-24685, 25500-25652, 25680, 25685, 27193-27248, 27254, 27500-27514, 27520-27540, 27750-27828 HCPCS code(s): S2360, S2362 ICD-9 diagnosis code(s): 733.1x, 805.xx-806.xx, 807.0x-807.4x, 808.xx-815.xx, 818.xx-825.xx, 827.xx, 828.xx ICD-9 surgical proc code(s): 79.01-79.03, 79.05-79.07, 79.11-79.13, 79.15-79.17, 79.21-79.23, 79.25-79.27, 79.31-79.33, 79.35-79.37, 79.61-79.63, 79.65-79.67, 81.65, 81.66 DRG: 235, 236
Denominator Exclusion Definition	Members who received at least one BMD study within 12 months prior to the index date, or who had evidence of treatment for osteoporosis 12 months prior to the index date, or had a fracture in the 60 days prior to the index date.
Denominator Exclusion Codes	BMD study CPT-4 code(s): 76070, 76071, 76075-76078, 76977, 77078-77083, 78350, 78351 HCPCS code(s): G0130 ICD-9 surgical proc code(s): 88.98 ICD-9 diagnosis code(s): V82.81
Numerator Definition	Members who received at least one BMD study 0-6 months after the index date (inclusive of index date) or who had evidence of treatment for osteoporosis 0-6 months after the index date (inclusive of index date).
Numerator Codes	BMD study CPT-4 code(s): 76070, 76071, 76075-76078, 76977, 77078-77083, 78350, 78351 HCSPCS code(s): G0130 ICD-9-surgical proc code(s): 88.98 ICD-9 diagnosis code(s): V82.81

Physician Attribution Description	Score all physicians (in the selected specialties) who saw the member during the 0-6 months following the index date (inclusive of index date).

References

1. *National Health and Nutrition Examination Survey (NHANES) 1999-2002.* Centers for Disease Control, 2004.
2. *Osteoporosis in Postmenopausal Women: Diagnosis and Monitoring.* Summary, Evidence Report/Technology Assessment: Number 28, February 2001. **HRQ Publication Number 01-E031**.
3. Siris, E.S., et al., *Predictive value of low BMD for 1-year fracture outcomes is similar for postmenopausal women ages 50-64 and 65 and Older: results from the National Osteoporosis Risk Assessment (NORA).* J Bone Miner Res, 2004. **19**(8): p. 1215-20.
4. *Osteoporosis prevention, diagnosis, and therapy.* Jama, 2001. **285**(6): p. 785-95.
5. Solomon, D.H., et al., *Underuse of osteoporosis medications in elderly patients with fractures.* Am J Med, 2003. **115**(5): p. 398-400.
6. Raisz, L.G., *Clinical practice. Screening for osteoporosis.* N Engl J Med, 2005. **353**(2): p. 164-71.
7. Siris, E.S., et al., *The effect of age and bone mineral density on the absolute, excess, and relative risk of fracture in postmenopausal women aged 50-99: results from the National Osteoporosis Risk Assessment (NORA).* Osteoporos Int, 2006. **17**(4): p. 565-74.
8. Leibson, C.L., et al., *Mortality, disability, and nursing home use for persons with and without hip fracture: a population-based study.* J Am Geriatr Soc, 2002. **50**(10): p. 1644-50.
9. Sweeney, A.T., et al., *Bone mineral density assessment: comparison of dual-energy X-ray absorptiometry measurements at the calcaneus, spine, and hip.* J Clin Densitom, 2002. **5**(1): p. 57-62.
10. Brenneman, S.K., et al., *Impact of recent fracture on health-related quality of life in postmenopausal women.* J Bone Miner Res, 2006. **21**(6): p. 809-16.
11. Kern, L.M., et al., *Association between screening for osteoporosis and the incidence of hip fracture.* Ann Intern Med, 2005. **142**(3): p. 173-81.
12. *Screening for osteoporosis in postmenopausal women: recommendations and rationale.* Am Fam Physician 2002
13. Kanis, J.A., et al., *Cost-effectiveness of risedronate for the treatment of osteoporosis and prevention of fractures in postmenopausal women.* Osteoporos Int, 2004. **15**(11): p. 862-71.
14. Adachi, J., et al., *The association between compliance and persistence with bisphosphonate therapy and fracture risk: A review.* BMC Musculoskelet Disord, 2007. **8**(1): p. 97.
15. Earnshaw, S.R., et al., *Cost-effectiveness of bisphosphonate therapies for women with postmenopausal osteoporosis: implications of improved persistence with less frequently administered oral bisphosphonates.* Curr Med Res Opin, 2007.
16. AACE, *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.* 2003, American Association of Clinical Endocrinologists.
17. ICSI, *Diagnosis and treatment of osteoporosis*. 2005, Institute for Clinical Systems Improvement: Bloomington, MN.

18. Fulton, J.P., *New guidelines for the prevention and treatment of osteoporosis. National Osteoporosis Foundation.* Med Health R I, 1999. **82**(3): p. 110-1.
19. *Physician's Guide to prevention and treatment of osteoporosis*. 2003, National Osteoporosis Foundation.
20. *Physician's Guide to Prevention and Treatment of Osteoporosis*, in *National Osteoporosis Foundation*. 2003: Washington DC.