**National Quality Forum—Evidence (subcriterion 1a)**

**Measure Title**: OAF-02 Risk Assessment/Treatment After Fracture

**IF the measure is a component in a composite performance measure, provide the title of the Composite Measure here:** Click here to enter composite measure title

**Date of Submission**: 12/6/2013

|  |
| --- |
| **Instructions**  *For composite performance measures:*  *A separate evidence form is required for each component measure unless several components were studied together.*  *If a component measure is submitted as an individual performance measure, attach the evidence form to the individual measure submission.*   * Respond to all questions as instructed with answers immediately following the question. All information needed to demonstrate meeting the evidence subcriterion (1a) must be in this form. An appendix of *supplemental* materials may be submitted, but there is no guarantee it will be reviewed. * If you are unable to check a box, please highlight or shade the box for your response. * Maximum of 10 pages (*incudes questions/instructions*; minimum font size 11 pt; do not change margins). ***Contact NQF staff if more pages are needed.*** * Contact NQF staff regarding questions. Check for resources at [Submitting Standards webpage](http://www.qualityforum.org/Measuring_Performance/Submitting_Standards.aspx). |

|  |
| --- |
| **Note: The information provided in this form is intended to aid the Steering Committee and other stakeholders in understanding to what degree the evidence for this measure meets NQF’s evaluation criteria.**  **Subcriterion 1a.** **Evidence to Support the Measure Focus**  The measure focus is a health outcome or is evidence-based, demonstrated as follows:   * Health outcome:**[3](#Note3)** a rationale supports the relationship of the health outcome to processes or structures of care. * Intermediate clinical outcome, Process,**[4](#Note4)** or Structure: a systematic assessment and grading of the quantity, quality, and consistency of the body of evidence[**5**](#Note5)that the measure focus leads to a desired health outcome. * Patient experience with care: evidence that the measured aspects of care are those valued by patients and for which the patient is the best and/or only source of information OR that patient experience with care is correlated with desired outcomes. * Efficiency:**[6](#Note6)** evidence for the quality component as noted above.   **Notes**  **3.** Generally, rare event outcomes do not provide adequate information for improvement or discrimination; however, serious reportable events that are compared to zero are appropriate outcomes for public reporting and quality improvement.  **4.** Clinical care processes typically include multiple steps: assess → identify problem/potential problem → choose/plan intervention (with patient input) → provide intervention → evaluate impact on health status. If the measure focus is one step in such a multistep process, the step with the strongest evidence for the link to the desired outcome should be selected as the focus of measurement.  **5.** The preferred systems for grading the evidence are the U.S. Preventive Services Task Force (USPSTF) [grading definitions](http://www.uspreventiveservicestaskforce.org/uspstf/grades.htm) and [methods](http://www.uspreventiveservicestaskforce.org/methods.htm), or Grading of Recommendations, Assessment, Development and Evaluation [(GRADE) guidelines](http://www.gradeworkinggroup.org/publications/index.htm).  **6.** Measures of efficiency combine the concepts of resource use and quality (NQF’s [Measurement Framework: Evaluating Efficiency Across Episodes of Care](http://www.qualityforum.org/Publications/2010/01/Measurement_Framework__Evaluating_Efficiency_Across_Patient-Focused_Episodes_of_Care.aspx); [AQA Principles of Efficiency Measures](http://www.aqaalliance.org/files/PrinciplesofEfficiencyMeasurementApril2006.doc)). |

**1a.1.This is a measure of**:

Outcome

☐ Health outcome: Click here to name the health outcome

*Health outcome includes patient-reported outcomes (PRO, i.e., HRQoL/functional status, symptom/burden, experience with care, health-related behaviors)*

☐ Intermediate clinical outcome: Click here to name the intermediate outcome

X☐ Process: Assessment for, or treatment of, osteoporosis following fragility fracture

☐ Structure: Click here to name the structure

☐ Other: Click here to name what is being measured

**HEALTH OUTCOME PERFORMANCE MEASURE**  *If not a health outcome, skip to* [*1a.3*](#Section1a3)

**1a.2.** **Briefly state or diagram the linkage between the health outcome (or PRO) and the healthcare structures, processes, interventions, or services that influence it.**

**1a.2.1.** **State the rationale supporting the relationship between the health outcome (or PRO) and at least one healthcare structure, process, intervention, or service**.

*Note: For health outcome performance measures, no further information is required; however, you may provide evidence for any of the structures, processes, interventions, or service identified above.*

**intermediate outcome, PROCESS, or STRUCTURE PERFORMANCE measure**

**1a.3.****Briefly state or diagram the linkages between structure, process, intermediate outcome, and health outcomes**. Include all the steps between the measure focus and the health outcome.

Following fragility fracture, assessment for risk of future fracture by DXA scan or other suitable risk assessment method if DXA is unavailable, or by administration of an FDA-approved pharmacotherapeutic agent to treat osteoporosis, will reduce the occurrence of low bone mass and thus prevent future fracture and associated hospitalization, costs and morbidity.

Fragility fracture ⭢ DXA assessment for low bone mass or pharmacologic treatment ⭢ correction of low bone mass ⭢ decreased morbidity and decreased readmissions for fracture.

**1a.3.1.** **What is the source of the systematic review of the body of evidence that supports the performance measure?**

X☐ Clinical Practice Guideline recommendation – ***complete sections*** [***1a.4***](#Section1a4)***, and*** [***1a.7***](#Section1a7)

☐ US Preventive Services Task Force Recommendation – ***complete sections*** [***1a.5***](#Section1a5) ***and*** [***1a.7***](#Section1a7)

X☐ Other systematic review and grading of the body of evidence (*e.g., Cochrane Collaboration, AHRQ Evidence Practice Center*) – ***complete sections*** [***1a.6***](#Section1a6) ***and*** [***1a.7***](#Section1a7)

X☐ Other – ***complete section*** [***1a.8***](#Section1a8)

*Please complete the sections indicated above for the source of evidence. You may skip the sections that do not apply.*

**1a.4. CLINICAL PRACTICE GUIDELINE RECOMMENDATION**

**1a.4.1.** **Guideline citation** (*including date*) and **URL for guideline** (*if available online*):

Watts NB, Bilezikian JP, Camacho PM, Greenspan SL, Harris ST, Hodgson SF, Kleerekoper M, Luckey MM, McClung MR, Pollack RP, Petak SM, AACE Osteoporosis Task Force. American Association of Clinical Endocrinologists medical guidelines for clinical practice for the diagnosis and treatment of postmenopausal osteoporosis. Endocr Pract. 2010 Nov-Dec;16(Suppl 3):1-37. [209 references)

<http://www.guideline.gov/content.aspx?id=34968&search=osteoporosis>

**1a.4.2.** **Identify guideline recommendation number and/or page number** and **quote verbatim, the specific guideline recommendation**.

3.4 How is osteoporosis diagnosed?

R14. Use a central dual-energy x-ray absorptiometry (DXA) measurement

R16. Osteoporosis is defined as the presence of a fracture of the hip or spine (in the absence of other bone conditions).

3.6. Who needs pharmacologic therapy?

R19. Those patients with a history of a fracture of the hip or spine

**1a.4.3.** **Grade assigned to the quoted recommendation with definition of the grade:**

Recommendations R14 and R16– Grade B, Best Evidence Level 3

Recommendation R19 – Grade A, Best Evidence Level 1

| **Recommendation Grade** | **Description** |
| --- | --- |
| **A** | Homogeneous evidence from multiple well-designed randomized controlled trials with sufficient statistical power  Homogeneous evidence from multiple well-designed cohort controlled trials with sufficient statistical power  ≥1 conclusive level 1 publications demonstrating benefit >> risk |
| **B** | Evidence from at least 1 large well-designed clinical trial, cohort or case-controlled analytic study, or meta-analysis  No conclusive level 1 publication; ≥1 conclusive level 2 publications demonstrating benefit >> risk |

**1a.4.4. Provide all other grades and associated definitions for recommendations in the grading system.** (*Note: If separate grades for the strength of the evidence, report them in section 1a.7.*)

|  |  |
| --- | --- |
| **C** | Evidence based on clinical experience, descriptive studies, or expert consensus opinion  No conclusive level 1 or 2 publications; ≥1 conclusive level 3 publications demonstrating benefit >> risk  No conclusive risk at all and no conclusive benefit demonstrated by evidence |
| D | Not rated  No conclusive level 1, 2, or 3 publication demonstrating benefit >> risk  Conclusive level 1, 2, or 3 publication demonstrating risk >> benefit |

**1a.4.5. Citation and URL for methodology for grading recommendations** (*if different from 1a.4.1*)**:**

**1a.4.6. If guideline is evidence-based (rather than expert opinion), are the details of the quantity, quality, and consistency of the body of evidence available (e.g., evidence tables)?**

X☐Yes **→ *complete section*** [***1a.7***](#Section1a7)

☐No **→ *report on another systematic review of the evidence in sections*** [***1a.6***](#Section1a6) ***and*** [***1a.7***](#Section1a7)***; if another review does not exist, provide what is known from the guideline review of evidence in*** [***1a.7***](#Section1a7)

**1a.5.** **UNITED STATES PREVENTIVE SERVICES TASK FORCE RECOMMENDATION**

**1a.5.1.** **Recommendation citation** (*including date*) and **URL for recommendation** (*if available online*):

**1a.5.2.** **Identify recommendation number and/or page number** and **quote verbatim, the specific recommendation**.

**1a.5.3.** **Grade assigned to the quoted recommendation with definition of the grade**:

**1a.5.4. Provide all other grades and associated definitions for recommendations in the grading system.** (*Note: the* *grading system for the evidence should be reported in section 1a.7.*)

**1a.5.5. Citation and URL for methodology for grading recommendations** (*if different from 1a.5.1*)**:**

***Complete section*** [***1a.7***](#Section1a7)

**1a.6. OTHER SYSTEMATIC REVIEW OF THE BODY OF EVIDENCE**

**1a.6.1.** **Citation** (*including date*) and **URL** (*if available online*):

French SD, Green S, Buchbinder R, Barnes H. Interventions for improving the appropriate use of imaging in people with musculoskeletal conditions. The Cochrane Collaboration. The Cochrane Library 2010, Issue 1.

*Summary:* The majority of the 12 randomized control trials and case-control studies evaluated for increased bone mineral density ordering showed that any intervention improved bone mineral density test ordering moderately, but reminder, patient-mediated, and organizational (case manager) interventions showed the highest potential for improvement in ordering practice.

*Available at:*

http://summaries.cochrane.org/CD006094/interventions-for-improving-the-appropriate-use-of-imaging-in-people-with-musculoskeletal-conditions

Qaseem A, Snow V, Shekelle P, Hopkins R et al. Pharmacologic Treatment of Low Bone Density or Osteoporosis to Prevent Fractures: A Clinical Practice Guideline from the American College of Physicians. Annals of Internal Medicine; Volume 149, Number 6:16 September 2008, pp 404-416.

*Summary*: English-language publications from 1966-2006 on the topic of pharmacologic treatment of low bone mass or osteoporosis to prevent fractures were reviewed. This resulted in the use of reports of 76 randomized controlled trials and 24 meta-analyses; adverse events were examined as reported in 417 RCTs, 25 controlled clinical trials, 11 open-label trials, 31 large observational studies, and 9 case reports. Recommendations were developed and rated using the GRADE system. The recommendation pertinent to this measure is “Recommendation 1: ACP recommends that clinicians offer pharmacologic treatment to men and women who have known osteoporosis and to those who have experienced fragility fractures. (Grade: strong recommendation; high-quality evidence).”

*Available at:*

http://www.guideline.gov/content.aspx?id=13166

Watts NB, Adler RA, Bilezikian JP, Drake MT et al. Osteoporosis in Men: An Endocrine Society Clinical Practice Guideline. J Clin Endocrinol Metab, June 2012, 97(6):1802-1822.

*Summary:* Evidence relative to testing and treatment for osteoporosis in men was reviewed and rated using the GRADE system for strength of recommendations and evidence. Recommendation 1 is that men with a history of fracture after age 50 should undergo bone mineral density testing (GRADE 2, evidence level low quality). DXA of the spine and hip should be used (GRADE 1, level of evidence moderate). The second recommendation is that men with fragility hip or clinical vertebral fractures should be considered for pharmacological treatment (GRADE 1, level of evidence moderate quality).

*Available at:*

http://jcem.endojournals.org/content/97/6/1802.full

**1a.6.2.** **Citation and** **URL for methodology for evidence review and grading** (*if different from 1a.6.1*)**:**

***Complete section*** [***1a.7***](#Section1a7)

**1a.7. FINDINGS FROM SYSTEMATIC REVIEW OF BODY OF THE EVIDENCE supporting the measure**

**1a.7.1.** **What was the specific structure, treatment, intervention, service, or intermediate outcome addressed in the evidence review?**

Diagnosis and pharmacologic treatment of osteoporosis

**1a.7.2.** **Grade assigned for the quality of the quoted evidence with definition of the grade**:

Recommendations R14 and R16 – Best evidence level 3

Recommendation R19 – Best evidence level 1

**2010 American Association of Clinical Endocrinologists Criteria for Rating of Published Evidence\***

|  |  |
| --- | --- |
| **Numerical Descriptor (evidence level)** | **Semantic Descriptor (reference methods)** |
| 1 | Meta-analysis of randomized controlled trials |
| 1 | Randomized controlled trial |
| 3 | Cross-sectional study |
| 3 | Surveillance study (registries, surveys, epidemiologic study) |
| 3 | Consecutive case series |
| 3 | Single case reports |

**1a.7.3. Provide all other grades and associated definitions for strength of the evidence in the grading system.**

**2010 American Association of Clinical Endocrinologists Criteria for Rating of Published Evidence\***

|  |  |
| --- | --- |
| **Numerical Descriptor (evidence level)** | **Semantic Descriptor (reference methods)** |
| 2 | Meta-analysis of nonrandomized prospective or case-controlled trials |
| 2 | Nonrandomized controlled trial |
| 2 | Prospective cohort study |
| 2 | Retrospective case-control study |
| 4 | No evidence (theory, opinion, consensus, or review) |

**1a.7.4.** **What is the time period covered by the body of evidence? (*provide the date range, e.g., 1990-2010*). Date range**: 2003 - 2010

**QUANTITY AND QUALITY OF BODY OF EVIDENCE**

**1a.7.5.****How many and what type of study designs are included in the body of evidence**? (*e.g., 3 randomized controlled trials and 1 observational study*)

R14. Use a central dual-energy x-ray absorptiometry (DXA) measurement

The number of Level 1, 2, 3, and 4 studies supporting this recommendation are unstated in the guidelines.

R16. Osteoporosis is defined as the presence of a fracture of the hip or spine (in the absence of other bone conditions).

The number of Level 1, 2, 3, and 4 studies supporting this recommendation is unstated in the guidelines.

R19. (Use pharmacotherapy for) Those patients with a history of a fracture of the hip or spine.

The following were the studies reviewed for the use of various FDA-approved Pharmacotherapeutic agents, without particular reference to the hip or spine:

49 – Both meta-analyses of randomized controlled trials and randomized control trials (Level 1)

11 - Meta-analyses of nonrandomized prospective or case-controlled trials, prospective cohort studies, nonrandomized controlled trials (Level 2)

11 - Cross-sectional studies, surveillance studies (registries, surveys, epidemiologic study), consecutive case series, single case reports (Level 3)

7 – No evidence (theory, opinion, consensus, or review) (Level 4)

**1a.7.6.** **What is the overall quality of evidence across studies in the body of evidence**? (*discuss the certainty or confidence in the estimates of effect particularly in relation to study factors such as design flaws, imprecision due to small numbers, indirectness of studies to the measure focus or target population*)

There was no statement of the overall quality of evidence in guideline documents, but it appears to be Level 2 - Meta-analyses of nonrandomized prospective or case-controlled trials, prospective cohort studies, nonrandomized controlled trials There were more than eleven Level 2 studies evaluated for the 3 recommendations.

Factors considered in analysis were premise correctness, allocation concealment (randomization), selection bias, appropriate blinding, using surrogate end-points, sample size, and null hypothesis vs. Bayesian statistics. The estimated effect of these factors was not stated in guideline documents – only that they were considered.

**ESTIMATES OF BENEFIT AND CONSISTENCY ACROSS STUDIES IN BODY OF EVIDENCE**

**1a.7.7.** **What are the estimates of benefit—magnitude and direction of effect on outcome(s) across studies in the body of evidence**? (*e.g., ranges of percentages or odds ratios for improvement/ decline across studies, results of meta-analysis, and statistical significance*)

Unstated in guideline documents

**1a.7.8.** **What harms were studied and how do they affect the net benefit (benefits over harms)?**

Side effects of Pharmacotherapeutic agents were assessed and while there were occasional side effects, the benefits were felt to outweigh both the harms of the medications and the harms of not taking the medication.

**UPDATE TO THE SYSTEMATIC REVIEW(S) OF THE BODY OF EVIDENCE**

**1a.7.9.** **If new studies have been conducted since the systematic review of the body of evidence, provide for each new study: 1) citation, 2) description, 3) results, 4) impact on conclusions of systematic review**.

This is the most recent systematic review of the body of evidence.

**1a.8 OTHER SOURCE OF EVIDENCE**

*If source of evidence is NOT from a clinical practice guideline, USPSTF, or systematic review, please describe the evidence on which you are basing the performance measure.*

**1a.8.1** **What process was used to identify the evidence?**

A fulsome literature search of Medline, PubMed, Cinhal, Medline, Cochrane Reviews, The National Guideline Clearinghouse, The National Quality Measure Clearinghouse, Clinical Trials.gov, and other sources was conducted in July 2007, inclusive of publications from 2000 through 2007. This search was repeated in August 2013, inclusive of publications from 2008 through 2013. 888 references were identified in this second review. These 888 references were further narrowed to 58 germane references. A secondary targeted search of references in these publications so identified was also conducted, resulting in an additional 36 references. Additional references were identified via personal communications.

References included were evidence-based guidelines, meta-analyses, The Surgeon General’s 2004 report, randomized control trials, cohort studies, consecutive case series, and other well-referenced publications.

**1a.8.2.** **Provide the citation and summary for each piece of evidence.**

Bolland MJ, Grey AB, Gamble GD, Reid IR. Effect of Osteoporosis treatment on Mortality: A Meta-Analysis. J Clin Endocrinol Metab, March 2010, 95(3): 1174-1181.

*Summary:* Eligible studies included in this review were randomized placebo-controlled trials of approved doses of medications with proven efficacy in preventing both vertebral and non-vertebral fractures. Trials of estrogens and SERMS were excluded. There were eight eligible studies; mortality reduction was 11% and not related to age or incidence of fragility fracture.

British Orthopedic Association, British Geriatrics Society/ The care of patients with fragility fracture 2nd ed. Sep [cited 2012 Jul 9}.44-48. Available at: <http://www.fractures.com/pdf/BOA-BGS-Blue-Book.pdf>.

*Summary:* A series of evidence-based standards for care of fragility fracture patients in the UK. The Fracture Liaison Service is cited as the model for most effective and best service practice for the assessment and care of fragility fracture patients in the UK and internationally. (p. 48). Standard 5 of the document also prescribes that “All patients presenting with fragility fracture should be assessed to determine their need for antiresorptive therapy to prevent future osteoporotic fractures”.(p.47).

Eekman DA, vanHelden DH, Huisman AM, Verhaar HJ, et al. Optimizing fracture prevention: the fracture liaison service, an observational study. Osteoporosis Int, Sept 2013 . Available at:

<http://www.ncbi.nlm.nih.gov/pubmed/24030287>.

*Summary*: The response rate to the invitation to the fracture liaison service and reasons for non-response were evaluated in 2,207 fragility fracture patients. Fifty-one percent responded; non-responders were most often not interested (38 %) or were hip fracture patients. After 1 year of treatment, 88 % were still persistent and 2 % had a new fracture. Conclusions were that in elderly fracture patients, the use of a FLS leads to an increased response rate, a high persistence to drug treatment, and a low rate of subsequent clinical fractures.

Eisman JA, Bogoch ER, Dell R, Harrington JT, et al. Making the First Fracture the Last Fracture: ASBMR Task Force Report on Secondary Fracture Prevention. Journal of Bone and Mineral Research, Vol 27, No. 9, September 2012, pp. 1-8.

*Summary:* A task force reviewed the current evidence on the systematic approaches to identify, “capture”, and treat fragility fracture patients, including cost-effectiveness and effectiveness of interventions to prevent secondary fractures. Conclusions are that the data are sufficiently compelling to characterize a referral to a care pathway as an obligation to do the right thing; the pathway must evaluate for osteoporosis, future fracture risk, and need for treatment to prevent secondary fracture. The fracture liaison service approach is described as an effective model for this pathway. Benefits of a fracture liaison service are described and include a reduction in subsequent fractures, reduced health care costs, reductions in premature mortality, and a reduction in the incidence of hip fractures by 20% or more over several years.

Goldhahn J, Little D, Mitchell P, Fazzalari NL, et al. Evidence for anti-osteoporosis therapy in acute fracture situations—Recommendations of a multidisciplinary workshop of the International Society for Fracture Repair. Bone, Vol 46 Issue 2: pp 267-71, Feb 2010.

*Summary:* The International Society for Fracture Repair convened a multidisciplinary workshop to assess the current evidence around the interaction between anti-osteoporosis drugs and the healing of incident fractures, with a view to making recommendations for clinical practice. The consensus was that there is no evidence-based reason to withhold anti-resorptive therapy while a fracture heals, whether or not the patient was taking such therapy when the fracture occurred. The workshop also considered existing models of service provision for secondary prevention and concluded that the essential ingredient for reliable delivery is the inclusion of a dedicated coordinator role.

Majumdar SR, Beaupre LA, Harley CH et al. Using a case manager to improve osteoporosis treatment after hip fracture: results of a randomized controlled trial. Arch Intern Med 2007;167 (19): 2110-2115.

*Summary:* In a randomized controlled trial, a hospital-based osteoporosis case manager increased rates of appropriate osteoporosis treatment among hip fracture patients to 51% compared to 22% for usual-care patients.

Majumdar SR, McAlister FA, Johnson JA, Bellerose D, et al.  Interventions to Increase Osteoporosis Treatment in Patients with “Incidentally” Detected Vertebral Fractures.  The American Journal of Medicine. 2012 (125). 929-936.

*Summary:* Patients aged >60 years who were discharged home from emergency departments and who had vertebral fractures reported but were not treated for osteoporosis were allocated to usual care (control) or physician intervention using alternate-week time series. After 3 months, untreated controls were re-allocated to physician+patient intervention. Allocation was concealed, outcomes ascertainment blinded, and analyses intent-to-treat. Primary outcome was starting osteoporosis treatment within 3 months. There were 1315 consecutive patients screened, and 240 allocated to control (nhttp://www.amjmed.com/webfiles/images/transparent.gif=http://www.amjmed.com/webfiles/images/transparent.gif123) or physician intervention (nhttp://www.amjmed.com/webfiles/images/transparent.gif=http://www.amjmed.com/webfiles/images/transparent.gif117). Groups were similar at baseline (average age 74 years, 45% female, 58% previous fractures). Compared with controls, physician interventions significantly (all *P* <.001) increased osteoporosis treatment (20 [17%] vs 2 [2%]), bone mineral density testing (51 [44%] vs 5 [4%]), and bone mineral density testing or treatment (57 [49%] vs 7 [6%]). Three months after controls were re-allocated to physician+patient interventions, 22% had started treatment and 65% had bone mineral density testing or treatment (*P* <.001 vs controls). Physician+patient interventions increased bone mineral density testing or treatment an additional 16% compared with physician interventions (*P*http://www.amjmed.com/webfiles/images/transparent.gif=http://www.amjmed.com/webfiles/images/transparent.gif.01).

Miki RA, Oetgen ME, Kirk J, Isogna KL, et al. Orthopedic Management Improves the Rate of Early Osteoporosis treatment After Hip Fracture. J Bone Joint Surg Am. 2008; 90:2346-53.

*Summary:* A prospective randomized control trial of 62 patients was conducted to assess the difference in the rate of osteoporosis treatment when an in-house assessment of osteoporosis was initiated by the orthopedic surgeon and follow-up was conducted in a specialized orthopedic osteoporosis clinic compared with osteoporosis education and “usual” care. At six months, the percentage of patients on pharmacologic treatment for osteoporosis was greater when treatment was initiated in-house by the orthopedic surgeon (58%) than when treatment was managed by a primary care physician (29%).

Rozental TD, Makhni EC, Day CS, Bouxsein ML. Improving Evaluation and Treatment for Osteoporosis Following Distal Radial Fractures.J bone Joint Surg Am. 2008;90: 953-61.

*Summary:* The medical records of 298 consecutive patients treated for fragility fracture of the distal radius were reviewed in the first part of the study to determine if a bone mineral density test had been done within 6 months of the fracture. – 21.3% had been screened. In the second part of the study, fifty patients with fragility fracture of the distal radius were randomized to receive either ordering of a bone mineral density test by the orthopedic surgeon and the results forwarded to the primary care physician, or the orthopedic surgeon sending a letter to the primary care physician to consider osteoporosis screening. The testing rate among patients for whom the orthopedic surgeon had ordered a bone mineral density test was 2 to 3 times higher than the testing rate among patients whose primary care doctor had been sent a letter. (93% compared with 30%). Initiation of pharmacotherapy was also higher in the same group (74% compared with 26%).

Vaile JH, Sullivan L, Connor D, Bleasel JF. A Year of Fractures: a Snapshot Analysis of the logistics, problems and outcomes of a hospital-based fracture liaison service. Osteoporosis Intl. 2013 Oct;24(10):2619-25.

*Summary:* The tracking and outcome of 768 patients attending an emergency department over 1 year is discussed; the problems encountered and potential solutions are described. In 1 year, 768 patients aged 50 or over were identified from emergency department records as attending with a low trauma fracture. About 84 % of patients eventually received assessment. Of the162 patients progressing through the entire process, 74 % had osteoporosis treatment planned and/or commenced.