## Appropriate Use of DXA Scans in women under 65 years who do not meet the risk factor profile

### 3b Measure Justification

Date as of which information is current: 6/7/2013

## Importance

- ◆ *High-Impact Aspect of Health Care*

**Demonstrated high-impact aspect**

*1a1.1 Select from the following all that apply:*
- ➢ *Frequently performed procedure*
- ➢ *High resource use*
- ➢ *Patient/societal consequences of poor quality*

**Summary of evidence of high impact**

*1a3. Provide epidemiological or resource use data*

The most recent osteoporosis guidelines, based on the latest research and consensus among medical specialty societies, state that DXA scans should start at age 65 for healthy women not at particular risk for osteoporosis (USPSTF 2011). Thereafter, women should undergo a DXA scan every two to five years, depending on their osteoporosis risk factors. Recent research reveals that too many younger women may be screened unnecessarily for osteoporosis with a DXA scan (Schnatz 2011). There are avoidable potential harms associated with screening asymptomatic women under 65 who do not have risk factors for osteoporosis, including exposure to radiation, false positive exams, patient anxiety about positive tests, and resulting side effects from unnecessary osteoporosis medications, which also add costs to an already burdened health care system (Lim 2009).

According to a 2012 report released by the American Academy of Family Physicians (AAFP), DXA screening for osteoporosis is one of the top five overused tests (AAFP 2012). AAFP emphasizes that DXA screenings should not be used in women younger than 65 with no risk factors. AAFP's recommendations were included in the Choosing Wisely™ campaign as an area of overuse. The Choosing Wisely™ campaign, led by the American Board of Internal Medicine (ABIM) Foundation in collaboration with several specialty societies, developed a list that recommends against commonly overused tests and procedures, to push physicians to "be better stewards of finite healthcare resources." The National Physicians Alliance (NPA) previously had proposed an overuse of DXA scans measure, a concept published in the *Archives of Internal Medicine* as part of its Less is More™ series. AAFP's goal was to identify items commonly used in primary care practice and strongly supported by the evidence and literature as leading to significant health benefits, reducing risks and harms, and reducing costs. A working group was assembled for each of the three primary care specialties: family medicine, pediatrics, and internal medicine. The AAFP recommendation on DXA scans for the Choosing Wisely campaign was developed through a version of the nominal group process in which physician work group members used online voting to select a list of potentially overused clinical practices. The working group then conducted a literature search to identify supporting or conflicting evidence to revise their list of overused practices. Field testing among family physicians supported the premise of DXA scan overuse in women under age 65, the likelihood of the Choosing Wisely recommendation improving care quality and/or reduce costs, and the ease of applying the recommendation (Good Stewardship Working Group 2011).

Another group of researchers, Kale et al. (2011), set out to identify the costs associated with commonly overused clinical activities across three primary care specialties (pediatrics, internal medicine, and family medicine). Researchers used 2009 data from the National Ambulatory Medical Care Survey (NAMCS) and National Hospital Ambulatory Medical Care Survey (NHAMCS), and found that inappropriate DXA screening for women ages 40 to 65 accounted for $527 million in costs. DXA scans were deemed inappropriate if the tests were performed on women under 65 or men under 70, excluding men and women with a history of a fracture, anorexia, vitamin D deficiency, exposure to corticosteroids, and tobacco use. Because

this study was limited to primary care visits, it may underestimate the costs. It is important to note that, although DXA screening was not as prevalent as other clinical activities reviewed during the study (for example, antibiotics for children with pharyngitis, routine laboratory studies), the direct costs for DXA were the second highest in the analysis because a DXA scan is more expensive than many of the other reviewed clinical activities (Kale 2011).

Findings from a recent study in Pennsylvania offer additional evidence of inappropriate DXA use. Researchers studied 615 postmenopausal women ages 49 years and older who were sent for a DXA scan between 2007 and 2009. Using NAMS's 2006 Osteoporosis Position Statement as a guideline, the findings show that 41.3 percent of the women should not have been sent for a DXA scan because they did not meet the risk factor profile. The guidelines stipulate that in the absence of certain risk factors (including, but not limited to, fracture after menopause, BMI <21 kg/m2 or weight <127 lbs, long-term use of glucocorticoids, current smoking, rheumatoid arthritis, or excessive alcohol intake), clinicians should not initiate DXA screening until women are at least 65 years of age (Schnatz 2011).

**Citations**

*1a.4. Provide citations for the evidence described above*

American Academy of Family Physicians releases 'top 5' list of possibly overused tests and procedures. April 4, 2012. http://www.aafp.org/online/en/home/media/releases/2012/choosingwisely.html.

Good Stewardship Working Group. The "Top 5" Lists in Primary Care: Meeting the Responsibilities of Professionalism. *Arch Intern Med* 2011; 171(15): 1385–1390

Kale MS, Bishop TF, Federman AD, et al. 'Top 5' lists top 5 billion. *Arch Intern Med* 2011;171:1856–58.

Lim LS, Hoeksema LJ, Sherin K. Screening for osteoporosis in the adult U.S. population. ACPM Position Statement on Preventive Practice. *Am J Prev Med* 2009;36(4):366–75.

Schnatz PF, Marakovits KA, Dubois M, et al. Osteoporosis screening and treatment guidelines: are they being followed? *Menopause* 2011 Oct;18(10):1072–8.

U. S. Preventive Services Task Force. Screening for osteoporosis: U.S. Preventive Services Task Force recommendation statement. *Ann Intern Med* 2011;154(5):356–64.

◆ *Opportunity for Improvement*

**Briefly explain the benefits envisioned by use of this measure**

*1b.1. (Quality improvement anticipated)*

Inappropriate DXA screening for women ages 40 to 65 accounts for at least $527 million in direct costs (Kale 2011). Inappropriate DXA screenings may then lead to unnecessary exposure due to radiation, false positive exams, and resulting side effects from potentially unnecessary osteoporosis medications, adding costs to an already burdened health care system (Lim 2009). The intended benefit for this measure is to reduce unnecessary DXA screenings for women under age 65 who do not meet the risk factor profile as enumerated by evidence-based guidelines.

**Citations**

Kale MS, Bishop TF, Federman AD, et al. "Top 5" lists top 5 billion. *Arch Intern Med* 2011;171: 1856–58.

Lim LS, Hoeksema LJ, Sherin K. Screening for osteoporosis in the adult U.S. population. ACPM Position Statement on Preventive Practice. *Am J Prev Med* 2009;36(4):366–75.

**Summary of data demonstrating performance gap**

*1b.2. (Variation or overall less than optimal performance across providers)*

Data are not available.

**Citations**

*1b.3. Provide citations for the evidence described above*
N/A

**Summary of data on disparities by population group**

*1b.4. Summarize evidence found that demonstrates any disparities. Describe groups in which disparities exist.*
Data are not available.

**Citations**

*1b.5. Provide citations for the evidence described above*
N/A

◆ ***Evidence to Support Measure Focus***

**Structure–process–outcome relationship**

*1c.1. Briefly state the measure focus (for example, health outcome, intermediate clinical outcome, process, structure) Then, identify the appropriate links (for example, structure–process–health outcome, process–health outcome, intermediate clinical outcome–health outcome)*

Reduction in inappropriate DXA scans in women under 65 who do not meet the risk factor profile >> reduction in downstream health care costs.

This is an overuse measure. The intended result of efforts to decrease inappropriate DXA screenings is to decrease avoidable harms associated with screening asymptomatic patients (for example, exposure to radiation, false positive exams, and resulting side effects from unnecessary osteoporosis medications).

**Type of evidence**

*1c.2. Describe the type of evidence, selecting from the following list all that apply: Clinical practice guideline*
  ➢ *Selected individual studies (rather than entire body of evidence)*
  ➢ *Systematic review of body of evidence (other than within guideline development)*
  ➢ *Other (state type of evidence)*

This measure relies on the following:

  ➢ *Clinical practice guideline*
  ➢ *Selected individual studies (rather than entire body of evidence)*
  ➢ *Other: Expert opinion*

**Directness of evidence to the specified measure**

*1c.4. State the central topic, population, and outcomes addressed in the body of evidence and identify any differences from the measure focus and measure target population.*

This measure does not differ in focus from the body of evidence. Recent research reveals that too many young women may be screened unnecessarily for osteoporosis with a DXA scan (Schnatz 2011). Screening women at low risk for osteoporosis does not produce clinically meaningful information—many women screened for osteoporosis learn they have only mild bone loss, a condition known as osteopenia; for them, the risk of fracture often is low. While there is little evidence that people with osteopenia benefit from drugs, the diagnosis often leads to treatment with drugs that pose numerous risks. A diagnosis of osteopenia can lead to treatment with such drugs as alendronate (Fosamax and generic), ibandronate (Boniva and generic), and risendronate (Actonel, Atelvia, and generic), which pose numerous risks. Risks include thigh fractures; throat or chest pain; difficulty in swallowing; heartburn; and more rarely, bone, eye, joint, and muscle pain; bone loss in the

jaw; and possibly abnormal heart rhythm (Consumer Reports 2012). In addition, there is little evidence that people with osteopenia get much benefit from the drugs. Treating patients with medications that have little benefit results in unnecessary costs for the health care system and patients. A DXA scan costs about $132, according to HealthcareBlueBook.com. Although DXA scans are less expensive than some other tests, unnecessary scans still result in increased costs. In addition, a month's supply of generic alendronate costs $38 to $70; Fosamax, the brand-name version, costs $125 to $148. People often take the drugs for years, and sometimes indefinitely (Consumer Reports 2012).

**Citations**

Consumer Reports. Bone-density tests® When you need them—and when you don't. *Choosing Wisely*[TM]*- An ABIM Initiative.*
        http://www.choosingwisely.org/doctor-patient-lists/bone-density-tests/.

Schnatz PF, Marakovits KA, Dubois M, et al. Osteoporosis screening and treatment guidelines: are they being followed?
        *Menopause* 2011 Oct;18(10):1072–8.

**Quantity of studies in the body of evidence**

*1c.5. Total number of studies, not articles*

One study, which included a sample size of 615 postmenopausal women.

**Quality of body of evidence**

*1c.6. Summarize the certainty or confidence in the estimates of benefits and harms to patients across studies in the body of evidence resulting from study factors. Please address:*
   a.  *Study design/flaws*
   b.  *Directness/indirectness of the evidence to this measure (for example, interventions, comparisons, outcomes assessed, population included in the evidence)*
   c.  *Imprecision/wide confidence intervals due to few patients or events)*

The number of studies addressing the rate with which DXA scans are overused is limited. Only one study was found addressing the rate of overuse of DXA scans in ambulatory settings and it had a small sample size; however, it was directly relevant to the intent of the measure. The study assessed postmenopausal women ages 49 years and older who were sent for a DXA scan between 2007 and 2009. Using the NAMS 2006 Osteoporosis Position Statement of the North American Menopause Society as a guideline, researchers found that 41.3 percent of the women sent for a DXA scan should not have been tested because they did not meet the risk factor profile. The guidelines stipulate that, in the absence of certain risk factors (including, but not limited to, fracture after menopause, BMI <21 kg/m2 or weight <127 lbs, long-term use of glucocorticoids, current smoking, rheumatoid arthritis, or excessive alcohol intake), clinicians should not initiate DXA screening until women are at least age 65.

**Consistency of results across studies**

*1c7. Summarize the consistency of the magnitude and direction of the effect across studies*

The research study above is consistent with expert opinion that younger women at low risk for osteoporosis are screened unnecessarily with DXA scans. Estimates of the proportion of overuse of DXA scans are not known. The AAFP recommendation on DXA scans for the Choosing Wisely campaign was developed through a version of the nominal group process in which physician work group members used online voting to select a list of potentially overused clinical practices. The working group then conducted a literature search to identify supporting or conflicting evidence to revise their list of overused practices. Field testing among family physicians supported the premise of DXA scan overuse in women under age 65, the likelihood that the Choosing Wisely recommendation would improve care quality and/or reduce costs, and the ease of applying the recommendation (Good Stewardship Working Group 2011). DXA scans may account for over $500 million in direct health care costs, in addition to potentially resulting in unnecessary treatments and false positive results (Kale et al. 2011; Lim et al. 2009).

**Net benefit**

*1c8. Provide estimates of effect for benefit/outcome, identify harms addressed and estimates of effect, and identify net benefit—benefit over harms across studies. Please include results of business/social/economic case for the measure.*

USPSTF has not found convincing studies indicating that there are benefits of screening women under 65 who do not meet the risk factor profile for osteoporosis.

**Grading of strength/quality of the body of evidence**

*1c9, 1c10. 1c11, 1c13, 1c14.*

This body of evidence has not been graded.

**Citation**

*1c15. Provide citations for the evidence described above*

Good Stewardship Working Group. The "Top 5" lists in primary care: meeting the responsibilities of professionalism. *Arch Intern Med* 2011; 171(15): 1385-1390.

Kale MS, Bishop TF, Federman AD, et al. "Top 5" lists top 5 billion. *Arch Intern Med* 2011;171: 1856–58.

Lim LS, Hoeksema LJ, Sherin K. Screening for osteoporosis in the adult U.S. population. ACPM Position Statement on Preventive Practice. *Am J Prev Med* 2009;36(4):366–75.

Schnatz PF, Marakovits KA, Dubois M, et al. Osteoporosis screening and treatment guidelines: are they being followed? *Menopause* 2011 Oct;18(10):1072–8.

**Guideline recommendation**

*1c16. Quote verbatim, the specific guideline recommendation (Including guideline number and/or page number)*

**USPSTF [1, 2]**

A list of indications for bone mineral density testing includes the following:

- – All women 65 or older
- – FRAX >= 9.3 percent 10-year fracture risk
- – Menopause status
- – Examples:
  - ➢ A 50-year-old current smoker with a BMI less than 21 kg/m2, daily alcohol use, and parental fracture history
  - ➢ A 55-year-old woman with a parental fracture history
  - ➢ A 60-year-old woman with a BMI less than 21 kg/m2 and daily alcohol use
  - ➢ A 60-year-old current smoker with daily alcohol use
- – USPSTF recommends screening for osteoporosis in women ages 65 years or older and younger women whose fracture risk is equal to or greater than that of a 65-year-old white woman with no additional risk factors. **Grade: B Recommendation.**

- – USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of screening for osteoporosis in men. **Grade: I Statement.**

**AACE [3]**

AACE recommendations for screening include women age 65 or older (Grade B; BEL 3) and younger postmenopausal women at increased risk based on fracture risk analysis (Grade C; BEL 2).

A list of indications for BMD testing includes the following:

– All women 65 or older
– All postmenopausal women

  ➢ With a history of fracture(s) without major trauma after ages 40 to 45
  ➢ With osteopenia identified radiographically
  ➢ Starting or taking long-term systemic glucocorticoid therapy (≥ three months)

Other perimenopausal or postmenopausal women with risk factors for osteoporosis if willing to consider pharmacologic interventions
– Low body weight (<127 lb or BMI <20 kg/m2)
– Ever used long-term systemic glucocorticoid therapy (≥ three months)
– Family history of osteoporotic fracture
– Early menopause
– Current smoking
– Excessive consumption of alcohol
– Secondary osteoporosis

## NOF [4,5] [not graded]

NOF recommends testing all women ages 65 and older and men ages 70 and older. BMD measurement is not recommended in children or adolescents and is not routinely indicated in healthy young men or premenopausal women. A list of indications for BMD testing includes the following:

– Women ages 65 and older, and men ages 70 and older, regardless of clinical risk factors
– Younger postmenopausal women and men ages 50 to 69 about whom there are concerns based on their clinical risk factor profiles
– Women in the menopausal transition if there is a specific risk factor associated with increased fracture risk, such as low body weight, prior low-trauma fracture, or high-risk medication
– Adults who have a fracture after age 50
– Adults with a condition (for example, rheumatoid arthritis) or taking a medication (for example, glucocorticoids in a daily dose ≥ 5 mg prednisone or equivalent for ≥ three mo) associated with low bone mass or bone loss
– Anyone being considered for pharmacologic therapy for osteoporosis
– Anyone being treated for osteoporosis, to monitor treatment effect
– Anyone not receiving therapy for whom evidence of bone loss would lead to treatment
– Postmenopausal women discontinuing estrogen should be considered for bone density testing

## NAMS [6,7,8] [not graded]

NAMS recommends that BMD be measured in the following populations:
– All women ages 65 and over, regardless of clinical risk factors
– Postmenopausal women with medical causes of bone loss (for example, steroid use, hyperparathyroidism), regardless of age
– Postmenopausal women ages 50 and older with additional risk factors (see below)
– Postmenopausal women with a fragility fracture (for example, fracture from a fall from standing height)

Testing should be considered for postmenopausal women ages 50 and older when one or more of the following risk factors for fracture have been identified:

– Fracture (other than skull, facial bone, ankle, finger, and toe) after menopause
– Thinness (body weight G127 lb [57.7 kg] or BMI 21 kg/m2)
– History of hip fracture in a parent

- Current smoker
- Rheumatoid arthritis
- Alcohol intake of more than two units per day (one unit is 12 oz. of beer, 4 oz. of wine, or 1 oz. of liquor)

**Citation**

*1c17. Provide citations for the clinical practice guideline quoted above*

1. U.S. Department of Health and Human Services: AHRQ, Agency for Healthcare Research and Quality, USPSTF. Screening for osteoporosis in postmenopausal women. Rockville (MD): AHRQ; January 2011. http://www.uspreventiveservicestaskforce.org/uspstf/uspsoste.htm.
2. Nelson HD, Haney EM, Chou R, et al. *Screening for osteoporosis: systematic review to update the 2002 U.S. Preventive Services Task Force Recommendation*. Rockville (MD): AHRQ; 2010. Evidence Synthesis No. 77. AHRQ Pub No. 10-05145-EF-1.
3. American Association of Clinical Endocrinologists. https://www.aace.com/files/osteo-guidelines-2010.pdf.
4. National Osteoporosis Foundation webpage. http://www.nof.org. EndocrineWeb; Making the diagnosis of osteoporosis. http:\\www.endocrineweb.com/osteoporosis/diagnosis.html.
5. National Osteoporosis Foundation. *Clinician's guide to prevention and treatment of osteoporosis.* Washington, DC: National Osteoporosis Foundation; 2010. old.nof.artsmithclients.com/sites/default/files/pdfs/NOF_ClinicianGuide2009_v7.pdf.
6. North American Menopause Society (NAMS). 2006 position statement.
7. North American Menopause Society. Management of osteoporosis in postmenopausal women: 2006 position statement of The North American Menopause Society. *Menopause* 2006;13(3):340-367.
8. Management of osteoporosis in postmenopausal women: 2010 position statement of The North American Menopause Society. *Menopause* 2010;17(1):25-54.

**URL**

*1c18. National Guideline Clearinghouse or other URL*

**Grading of strength of recommendation**

*1c191 1c21, 1c23. Please address:*

- *Has the recommendation been graded?*
- *System used for grading the strength of guideline recommendation (USPSTF, GRADE, etc.)*
- *Grade assigned to the recommendation*
  - ➢ Yes
  - ➢ USPSTF, AACE Grading Criteria
  - ➢ Grade assigned to the recommendation (see previous section)

USPSTF grades its recommendations according to one of five classifications (A, B, C, D, I), reflecting the strength of evidence and magnitude of net benefit (benefits minus harms).

A. USPSTF strongly recommends that clinicians provide [the service] to eligible patients. USPSTF found good evidence that [the service] improves important health outcomes and concludes that benefits substantially outweigh harms.
B. USPSTF recommends that clinicians provide [this service] to eligible patients. USPSTF found at least fair evidence that [the service] improves important health outcomes and concludes that benefits outweigh harms.
C. USPSTF makes no recommendation for or against routine provision of [the service]. USPSTF found at least fair evidence that [the service] can improve health outcomes but concludes that the balance of benefits and harms is too close to justify a general recommendation.
D. USPSTF recommends against routinely providing [the service] to asymptomatic patients. USPSTF found at least fair evidence that [the service] is ineffective or that harms outweigh benefits.

E.  USPSTF concludes that the evidence is insufficient to recommend for or against routinely providing [the service]. Evidence that the [service] is effective is lacking, of poor quality, or conflicting, and the balance of benefits and harms cannot be determined.

**AACE Criteria for Grading of Recommendations**

GRADE 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
-   ≥ one conclusive level 1 publication(s) demonstrating benefit >> risk

GRADE B
-   Evidence from at least one large, well-designed clinical trial, cohort- or case-controlled analytic study, or meta-analysis
-   No conclusive level 1 publication; ≥ one conclusive level 2 publication(s) demonstrating benefit >> risk

GRADE C
-   Evidence based on clinical experience, descriptive studies, or expert consensus of opinion
-   No conclusive level 1 or 2 publications; ≥ one conclusive level 3 publication(s) demonstrating benefit >> risk
-   No conclusive risk at all and no conclusive benefit demonstrated by evidence

GRADE D
-   Not rated
-   No conclusive level 1, 2, or 3 publication demonstrating benefit >> risk
-   Conclusive level 1, 2, or 3 publications demonstrating risk >> benefit

**USPSTF**

-   USPSTF recommends screening for osteoporosis in women 65 years or older and in younger women whose fracture risk is equal to or greater than that of a 65-year-old white woman with no additional risk factors.
    o Grade: **B Recommendation.**

-   USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of screening for osteoporosis in men.
    o Grade: **I Statement.**

**AACE** [3]

AACE recommendations for screening include women ages 65 or older (Grade B; BEL 3) and younger postmenopausal women at increased risk based on fracture risk analysis (Grade C; BEL 2).

**NOF and NAMS guidelines were not graded.**

**Rationale for using this guideline over others**

*1c24. If multiple guidelines exist, describe why the guideline cited was chosen. Factors may include rigor of guideline development, widespread acceptance and use, etc.*

It is the policy of the National Committee for Quality Assurance (NCQA) to use guidelines that are evidence based, applicable to physicians and other health care providers, and developed by a national specialty organization or government agency.

**Overall assessment of the body of evidence**

*1c25, 1c26, 1c.27. Based on the NQF descriptions for rating the evidence, what was your assessment of the following attributes of the body of evidence?*

- *Quantity: Low*
- *Quality: Low*
- *Consistency: Moderate*

## Reliability and Validity—Scientific Acceptability of Measure Properties

◆ *Reliability Testing*

**Data sample**

*2a2.1. Describe the data or sample, including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included*

TBD

**Analytic methods**

*2b2.2. Describe method of validity testing and rationale; if face validity, describe systematic assessment*

TBD

**Testing results**

*2a2.3. Provide reliability statistics and assessment of adequacy in the context of norms for the test conducted*

◆ *Validity Testing*

**Data sample**

*2b2.1. Describe the data or sample, including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included*

*Face validity*

Working groups of NPA members in each of the three primary care specialties: family medicine, pediatrics, and internal medicine

**Analytic method**

*2b2.2 .Describe method of validity testing and rationale; if face validity, describe systematic assessment*

*Face validity*

AAFP identified the overuse of DXA scans and included it in the Choosing Wisely™ campaign spearheaded by the ABIM Foundation. NPA previously proposed the measure concept, which was published in the Archives of Internal Medicine as part of its Less is More™ series. The Good Stewardship Working Group's goal, spearheaded by NPA, was to identify items common in primary care practice, strongly supported by the evidence and literature, that would lead to significant health benefits, reduce risks and harms, and reduce costs. The AAFP recommendation on DXA scans for the Choosing Wisely campaign was developed through a version of the nominal group process in which physician work group members used online voting to select a list of potentially overused clinical practices. The working group then conducted a literature search to identify supporting or conflicting evidence to revise their list of overused practices. Field testing among family physicians supported the premise of DXA scan overuse in women under age 65, the likelihood of the Choosing Wisely recommendation to improve care quality and/or reduce costs, and the ease of applying the recommendation (Good Stewardship Working Group 2011).

**Testing results**

*2b2.3. (Provide statistical results and assessment of adequacy in the context of norms for the test conducted; if face validity, describe results of systematic assessment)*

*Face validity*

The field testing (alpha and beta) conducted with more than 250 primary care physicians showed support for the hypothesis of DXA scan overuse. Alpha testing included 83 physicians, and beta testing included 172 physicians. Field testing showed support among physicians for the evidence supporting the recommendation, the potential positive impact on quality and cost, and the ease with which the recommendation could be implemented.

**Concept: DXA scans in younger patients**

**Family Medicine**

Field Testers Who Agreed or Strongly Agreed on Importance, percentage
Frequency encountered
> Alpha: 40.7
> Beta: 25.4

Quality of care
> Alpha: 55.5
> Beta: 32.7

Economic impact
> Alpha: 66.7
> Beta: 60

Strength of evidence
> Alpha: 85.1
> Beta: 90.9

Ease of implementation
> Alpha: 81.4
> Beta: 83.7

**Internal Medicine**

Field Testers Who Agreed or Strongly Agreed on Importance, percentage
Frequency encountered
> Alpha: 58.6
> Beta: 22

Quality of care
> Alpha: 58.6
> Beta: 22

Economic impact
> Alpha: 44.8
> Beta: 50

Strength of evidence
  Alpha: 65.5
  Beta: 74

Ease of implementation
  Alpha: 75.8
  Beta: 86

◆   *Exclusions*

**Data sample for analysis of exclusions**

*2b3.1.Describe the data or sample, including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included*

TBD

**Analytic method**

*2b3.2. Describe type of analysis and rationale for examining exclusions, including exclusion related to patient preference*

TBD

**Results**

*2b3.3. Provide statistical results for analysis of exclusions (for example, frequency, variability, sensitivity analyses)*

TBD

◆   *Risk Adjustment Strategy*

**Data/ sample**

*2b4.1. Describe the data or sample, including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included. Delete row if measure is not risk adjusted.*

TBD

**Analytic method**

*2b4.2. Describe methods and rationale for development and testing of risk model or risk stratification including selection of factors/variables*

TBD

**Testing results**

*2b4.3. Statistical risk model: Provide quantitative assessment of relative contribution of model risk factors; risk model performance metrics including cross–validation discrimination and calibration statistics, calibration curve, and risk decile plot; and assessment of adequacy in the context of norms for risk models. Risk stratification: Provide quantitative assessment of relationship of risk factors to the outcome and differences in outcomes among the strata. Delete row if measure is not risk adjusted.*

TBD

**Rationale for no adjustment**

*2b4.4. If outcome or resource use measure is not risk adjusted, provide rationale and analyses to justify lack of adjustment. The three rows above may be deleted if this field is used. Delete row if measure is risk adjusted or if this is a process measure.*

TBD

◆ *Identification of Meaningful Differences in Performance*

**Data/ sample**

*2b5.1 Describe the data or sample including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included*

TBD

**Analytic method**

*2b5.2. Describe methods and rationale to identify statistically significant and practical/meaningful differences in performance*

TBD

**Testing results**

*2b5.3. Results: Provide measure performance results/scores (for example, distribution by quartile, mean, median, SD, etc.); identify statistically significant and meaningful differences in performance*

TBD

◆ *Comparability of Multiple Data Sources/Methods*

**Data/sample**

*2b6.1. Describe the data or sample, including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included*

TBD

**Analytic method**

*2b6.2. Describe methods and rationale for testing comparability of scores produced by the different data sources specified in the measure*

TBD

**Testing results**

*2b6.3. Provide statistical results (for example, correlation statistics, comparison of rankings) and assessment of adequacy in the context of norms for the test conducted*

TBD

◆ *Disparities in Care*

**Stratification**

*2c.1. If measure is stratified for disparities, provide stratified results (scores by stratified categories/cohorts)*

TBD

**Rationale for no stratification**

*2c.2. If disparities have been reported/identified but measure is not specified to detect disparities, please explain.*

**Supplemental information**

*2.1. Supplemental testing methodology information: If additional information is available, please indicate where this information can be found—appendix, attachment, or URL*

## Usability

◆ *Public Reporting*

**Meaningful, understandable, and useful**

*3a.1. Use in public reporting——disclosure of performance results to the public at large. (If used in a public reporting program, provide name of program(s), locations, Web page URL(s). If not publicly reported in a national or community program, state the reason and plans to achieve public reporting, potential reporting programs or commitments, and timeline, for example, within three years of endorsement.)*

*3a.2. Provide a rationale for why the measure performance results are meaningful, understandable, and useful for public reporting. If usefulness was demonstrated (for example, focus group, cognitive testing) describe the data, method, and results.*

Physicians have widely supported this measure concept as a meaningful and useful quality-of-care concept. AAFP endorsed the measure concept and included it in the Choosing Wisely campaign. NPA previously proposed the measure concept, which was published in the Archives of Internal Medicine as part of its Less is More™ series. The AAFP recommendation on DXA scans for the Choosing Wisely campaign was developed through a version of the nominal group process in which physician work group members used online voting to select a list of potentially overused clinical practices. The working group then conducted a literature search to identify supporting or conflicting evidence to revise their list of overused practices. Field testing among family physicians supported the premise of DXA scan overuse in women under age 65, the likelihood of the Choosing Wisely recommendation to improve care quality and/or reduce costs, and the ease of applying the recommendation (Good Stewardship Working Group 2011).

◆ *Quality Improvement*

**Meaningful, understandable and useful**

*3b.1. Use in QI (If used in quality improvement program, provide name of program(s), locations, Web page URL(s))*

*3b.2. Provide a rationale for why the measure performance results are meaningful, understandable, and useful for quality improvement. If usefulness was demonstrated (for example, QI, initiative) describe the data, method and results*

This measure concept has been widely supported by physicians as a meaningful and useful quality-of-care concept. AAFP endorsed the measure concept and included it in the Choosing Wisely campaign. NPA previously proposed the measure concept, which was published in the Archives of Internal Medicine as part of its Less is More™ series. The AAFP recommendation on DXA scans for the Choosing Wisely campaign was developed through a version of the nominal group process in which physician work group members used online voting to select a list of potentially overused clinical practices. The working group then conducted a literature search to identify supporting or conflicting evidence to revise their list of overused practices. Field testing among family physicians supported the premise of DXA scan overuse in women under age 65, the likelihood of the Choosing Wisely recommendation improving care quality and/or reduce costs, and the ease of applying the recommendation (Good Stewardship Working Group 2011). .

**Other accountability uses**

*3.2. Use for other accountability functions (payment, certification, accreditation) (If used in a public accountability program, provide name of program(s), locations, Web page URL(s)). This row may be deleted if not applicable.*

TBD

## Feasibility

◆ ***How the data elements needed to compute measure score are generated***

*4a.1. How are the data elements needed to compute measure scores generated? State all that apply. Data used in the measure are:*

Generated and used by health care personnel during the provision of care (for example, blood pressure, lab value, medical condition)

◆ ***Electronic availability***

*4b.1. Are the data elements needed for the measure as specified available electronically (that is, elements that are needed to compute measure scores are in defined, computer-readable fields)?*

➢ *ALL data elements in electronic health records (EHRs)*
➢ *ALL data elements in electronic claims*
➢ *ALL data elements are in a combination of electronic sources (describe)*
➢ *Some data elements are in electronic sources (describe)*
➢ *No data elements are in electronic sources*

All data elements are in electronic health records (EHRs).

◆ ***Susceptibility to inaccuracies, errors, or unintended consequences***

*4c.1. Identify susceptibility to inaccuracies, errors, or unintended consequences of measurement identified during testing and/or operational use, and strategies to prevent, minimize, or detect. If audited, provide results.*

TBD

◆ ***Data collection strategy***

*4d.1. Describe what you have learned/modified as a result of testing and/or operational use of the measure regarding data collection, availability of data, missing data, timing and frequency of data collection, sampling, patient confidentiality, time and cost of data collection, and other feasibility/implementation issues (for example, fees for use of proprietary measures)*

TBD

## Related Measures

◆ ***Harmonization***

*5a.1. If this measure has EITHER the same measure focus OR the same target population as NQF-endorsed measure(s), are the measure specifications completely harmonized? Is so, describe.*

There are no related measures

◆ ***Similar measures***

*5b.1. If this measure has both the same measure focus and the same target population as NQF-endorsed measure(s) or other measures in current use, describe why this measure is superior to existing measures (for example, a more valid or efficient way to measure quality), OR, provide a rationale for the additive value of developing and endorsing an additional measure. (Provide analyses when possible.)*

There are no similar (competing) measures.