



Measure Information

This document contains the information submitted by measure developers/stewards, but is organized according to NQF's measure evaluation criteria and process. The item numbers refer to those in the submission form but may be in a slightly different order here. In general, the item numbers also reference the related criteria (e.g., item 1b.1 relates to sub criterion 1b).

Brief Measure Information

NQF #: 3475

Corresponding Measures:

De.2. Measure Title: Appropriate Use of DXA Scans in Women Under 65 Years Who Do Not Meet the Risk Factor Profile for Osteoporotic Fracture

Co.1.1. Measure Steward: Centers for Medicare & Medicaid Services

De.3. Brief Description of Measure: Percentage of female patients 50 to 64 years of age without select risk factors for osteoporotic fracture who received an order for a dual-energy x-ray absorptiometry (DXA) scan during the measurement period.

1b.1. Developer Rationale: This measure is expected to increase the recording of patient risk for fracture data and to decrease the number of inappropriate DXA scans. Current osteoporosis guidelines recommend using bone measurement testing to assess osteoporosis risk in women ages 65 and older. In postmenopausal women younger than 65, guidelines recommend using a formal clinical risk assessment tool to establish patients' risk for osteoporosis in order to determine whether to screen them for osteoporosis using bone measurement testing. Clinical information such as age, BMI, parental history of hip fracture, smoking, and alcohol use can be used to determine a woman's fracture risk (U.S. Preventive Services Task Force, 2018).

In addition, there are potentially avoidable harms associated with screening for osteoporosis in general, including exposure to radiation, false-positive exams, and the side effects of unnecessary osteoporosis medications, which add costs to an already burdened health care system (Lim et al., 2009).

Citations:

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.

U.S. Preventive Services Task Force. Screening for osteoporosis to prevent fractures: U.S. Preventive Services Task Force recommendation statement." JAMA. 2018;319(24):2521-31.

S.4. Numerator Statement: Female patients who received an order for at least one DXA scan in the measurement period.

S.6. Denominator Statement: Female patients ages 50 to 64 years with an encounter during the measurement period.

S.8. Denominator Exclusions: The measure excludes patients who have a combination of risk factors (as determined by age) or one of the independent risk factors.

De.1. Measure Type: Process: Appropriate Use

S.17. Data Source: Electronic Health Records

S.20. Level of Analysis: Clinician : Individual

IF Endorsement Maintenance – Original Endorsement Date: Jun 11, 2019 **Most Recent Endorsement Date:** Jun 11, 2019

IF this measure is included in a composite, NQF Composite#/title:

IF this measure is paired/grouped, NQF#/title:

De.4. IF PAIRED/GROUPED, what is the reason this measure must be reported with other measures to appropriately interpret results? Not applicable. This measure is not paired or grouped.

1. Evidence, Performance Gap, Priority – Importance to Measure and Report

Extent to which the specific measure focus is evidence-based, important to making significant gains in healthcare quality, and improving health outcomes for a specific high-priority (high-impact) aspect of healthcare where there is variation in or overall less-than-optimal performance. **Measures must be judged to meet all sub criteria to pass this criterion and be evaluated against the remaining criteria.**

1a. Evidence to Support the Measure Focus – See attached Evidence Submission Form

[DXA_Evidence_Attachment_Final-636772656013050280.docx](#)

1a.1 For Maintenance of Endorsement: Is there new evidence about the measure since the last update/submission?

Do not remove any existing information. If there have been any changes to evidence, the Committee will consider the new evidence. Please use the most current version of the evidence attachment (v7.1). Please use red font to indicate updated evidence.

1b. Performance Gap

Demonstration of quality problems and opportunity for improvement, i.e., data demonstrating:

- considerable variation, or overall less-than-optimal performance, in the quality of care across providers; and/or
- Disparities in care across population groups.

1b.1. Briefly explain the rationale for this measure (e.g., how the measure will improve the quality of care, the benefits or improvements in quality envisioned by use of this measure)

If a COMPOSITE (e.g., combination of component measure scores, all-or-none, any-or-none), SKIP this question and answer the composite questions.

This measure is expected to increase the recording of patient risk for fracture data and to decrease the number of inappropriate DXA scans. Current osteoporosis guidelines recommend using bone measurement testing to assess osteoporosis risk in women ages 65 and older. In postmenopausal women younger than 65, guidelines recommend using a formal clinical risk assessment tool to establish patients' risk for osteoporosis in order to determine whether to screen them for osteoporosis using bone measurement testing. Clinical information such as age, BMI, parental history of hip fracture, smoking, and alcohol use can be used to determine a woman's fracture risk (U.S. Preventive Services Task Force, 2018).

In addition, there are potentially avoidable harms associated with screening for osteoporosis in general, including exposure to radiation, false-positive exams, and the side effects of unnecessary osteoporosis medications, which add costs to an already burdened health care system (Lim et al., 2009).

Citations:

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.

U.S. Preventive Services Task Force. Screening for osteoporosis to prevent fractures: U.S. Preventive Services Task Force recommendation statement." *JAMA.* 2018;319(24):2521-31.

1b.2. Provide performance scores on the measure as specified (current and over time) at the specified level of analysis. (*This is required for maintenance of endorsement. Include mean, std dev, min, max, interquartile range, scores by decile. Describe the data source including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities include.*) This information also will be used to address the sub-criterion on improvement (4b1) under Usability and Use.

This measure has not yet been implemented and does not have performance data. However, from testing, we have an indication of performance scores based on 2013 encounters across 269 primary care providers (PCPs) at two sites: a primary care practice in suburban Michigan and a large multispecialty group in New York. (We also contracted with a third site, a large multispecialty group in Maryland. However, this site independently conducted analyses based on 2012 encounters and sent its results to measure developers. The site did not provide clinician-level performance scores.) In addition, we have data from 2,508,693 female patients ages 50 to 64 who were covered by one large multistate health plan and had a DXA scan in 2012.

In data on 7.5 million women from one large health plan, 6.7 percent of the women ages 50 to 64 had potentially inappropriate DXA scans. Although these data could not be analyzed at the clinician level, we present them because they indicate how the measure

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might perform if implemented nationally. Please note that the claims analysis is based on DXA scans performed rather than on DXA scans ordered (as specified in the measure), so the numbers might be lower than they would be if the measure were implemented.

The clinician-level data presented below are from only two sites, and thus they may not be representative of national performance.

In EHR data from 269 PCPs at two sites, the rates of potentially inappropriate DXA scans varied from 0.0 to 100 percent. Performance was skewed left, with the top decile of performers (that is, the worst performers) ordering inappropriate DXA scans for at least 10 percent of patients in the denominator. These results suggest that about 10 percent of clinicians have room for improvement.

Among the 269 PCPs at the two sites, the performance rate statistics were as follows:

Mean: 3 percent

Standard deviation: 9 percent

Minimum: 0 percent

Maximum: 100 percent

Interquartile range: 0 to 0.5 percent

10th percentile: 0 percent

50th percentile: 0 percent

90th percentile: 10 percent

95th percentile: 19 percent

99th percentile: 33 percent

1b.3. If no or limited performance data on the measure as specified is reported in 1b2, then provide a summary of data from the literature that indicates opportunity for improvement or overall less than optimal performance on the specific focus of measurement.

Studies suggest that among women who have had a DXA scan, about 40 percent do not meet the risk factors for frailty (Schnatz et al., 2011). Studies also indicate that DXA scans are overused, albeit at low rates. A retrospective longitudinal analysis conducted across 34 practices showed no difference in the rates of DXA scan usage before and after the publication of the Choosing Wisely recommendation about DXA overuse; rates were 2.6 percent before and 2.0 percent after (Lasser et al., 2016).

In addition, a retrospective cohort study of 13 practices assessed the three-, five-, and seven-year incidence of inappropriate and appropriate DXA scans. This study revealed a three-year incidence of DXA scans of 18.4 percent in women ages 50 to 59 without osteoporosis risk factors, and 24.9 percent in women ages 60 to 64 without risk factors (Amaranth et al., 2015).

Citations:

Amarnath ALD, Franks P, Robbins JA, Xing G, Fenton JJ. Underuse and overuse of osteoporosis screening in a regional health system: a retrospective cohort study. *J Gen Intern Med.* 2015; 30(12):1733-40. <https://doi.org/10.1007/s11606-015-3349-8>

Lasser EC, Pfoh ER, Chang HY, Chan KS, Bailey JC, Kharrazi H, et al. Has Choosing Wisely® affected rates of dual-energy X-ray absorptiometry use? *Osteoporos Int.* 2016; 27(7):2311-6. <https://doi.org/10.1007/s00198-016-3511-0>

Schnatz PF, Marakovits KA, Dubois M, O'Sullivan DM. Osteoporosis screening and treatment guidelines: are they being followed? *Menopause.* 2011; 18:1072-8.

1b.4. Provide disparities data from the measure as specified (current and over time) by population group, e.g., by race/ethnicity, gender, age, insurance status, socioeconomic status, and/or disability. (This is required for maintenance of endorsement. Describe the data source including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included.) For measures that show high levels of performance, i.e., "topped out", disparities data may demonstrate an opportunity for improvement/gap in care for certain sub-populations. This information also will be used to address the sub-criterion on improvement (4b1) under Usability and Use.

This measure has not yet been implemented and does not have performance data. To understand how performance on this measure varies by patient characteristics, we compared patient-level measure results by age and race in the three test sites for

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which we had EHR data. Two sites provided data from 2013 encounters; the third conducted its own analyses based on 2012 encounters and sent the results to the measure developers.

The results below summarize the rates of potentially inappropriate DXA scans by age and race from these sites. The rate was highest among women ages 60 and older across two sites (the third site merged results for women ages 50 to 64). At two sites, black women had significantly lower rates of potentially inappropriate DXA scans than white women. Please note that the results stratified by race were calculated using an earlier version of the measure that included women ages 18 to 64.

RATES ON POTENTIAL DXA-OVERUSE MEASURE, BY AGE AND SITE

Note: Rates were calculated using EHR extracts from three sites.

Site 1

Ages 50–59: 0.25 percent

Ages 60–64: 0.29 percent

Site 2 (Site 2 combined the data for patients ages 50 to 64 in a single age bracket.)

Ages 50–64: 5.70 percent

Site 3

Ages 50–59: 6.20 percent

Ages 60–64: 8.19 percent

Rates on potential DXA-overuse measure, by race and site

Note: Rates were calculated using EHR extracts from three sites for women ages 18 to 64.

Site 1

White—0.11 percent

Black—0.07 percent

Asian—0.12 percent

Other—0.05 percent

Missing—0.08 percent

Site 2

White—2.36 percent

Black—1.23 percent

Asian—2.43 percent

Other—4.87 percent

Missing—1.83 percent

Site 3

White—2.79 percent

Black—2.67 percent

Asian—1.76 percent

Other—1.72 percent

Missing—2.28 percent

1b.5. If no or limited data on disparities from the measure as specified is reported in 1b.4, then provide a summary of data from the literature that addresses disparities in care on the specific focus of measurement. Include citations. Not necessary if performance data provided in 1b.4

The literature also suggests disparities between black and white women with regard to DXA scans. In a gender matched study on women ages 60 and older in primary care practices, only 29.8 percent of black women were referred for a DXA scan, compared with 38.4 percent of white women ($p < 0.05$) (Hamrick et al., 2012). Of the referred women, 20.8 percent of the black women had the

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scan, compared with 27.0 percent of the white women ($p < 0.05$) (Hamrick et al., 2012). Also, among included women with a diagnosis of osteoporosis, black women were less likely to receive medication (79.6 percent) than were white women (89.2 percent) ($p < 0.05$), controlling for both age and BMI. But there was no difference in the pattern of follow-up visits between the two races (Hamrick et al., 2012).

Although the literature shows that all ethnicities are at risk for osteoporosis, the prevalence of osteoporosis differs across races and ethnicities. In 2010, an estimated 15.8 percent of non-Hispanic white women, 7.7 of non-Hispanic black women, and 20.4 percent of Mexican American women had osteoporosis of femoral neck or lumbar spine (Wright et al., 2014). Understanding these differences among women of different ethnicities is helpful as we continue to look at DXA scans in the population.

Citations:

Hamrick I, Cao Q, Aqbafe-Mosley D, Cummings DM. Osteoporosis health care disparities in postmenopausal women. J Womens Health. 2012 Dec;21(12):1232-6.

Wright NC, Looker AC, Saag KG, Curtis JR, Delzell ES, Randall S, et al. The recent prevalence of osteoporosis and low bone mass in the United States based on bone mineral density at the femoral neck or lumbar spine. J Bone Miner Res. 2014 Nov;29(11):2520-6.

2. Reliability and Validity—Scientific Acceptability of Measure Properties

Extent to which the measure, as specified, produces consistent (reliable) and credible (valid) results about the quality of care when implemented. **Measures must be judged to meet the sub criteria for both reliability and validity to pass this criterion and be evaluated against the remaining criteria.**

2a.1. Specifications The measure is well defined and precisely specified so it can be implemented consistently within and across organizations and allows for comparability. eMeasures should be specified in the Health Quality Measures Format (HQMF) and the Quality Data Model (QDM).

De.5. Subject/Topic Area (check all the areas that apply):

De.6. Non-Condition Specific(check all the areas that apply):

De.7. Target Population Category (Check all the populations for which the measure is specified and tested if any):

S.1. Measure-specific Web Page (Provide a URL link to a web page specific for this measure that contains current detailed specifications including code lists, risk model details, and supplemental materials. Do not enter a URL linking to a home page or to general information.)

No link to the current specifications exist; the specifications are attached in accordance with Question S.2a.

S.2a. If this is an eMeasure, HQMF specifications must be attached. Attach the zipped output from the eMeasure authoring tool (MAT) - if the MAT was not used, contact staff. (Use the specification fields in this online form for the plain-language description of the specifications)

This is an eMeasure **Attachment:** [AppropriateDXAScan_v5_5_Artifacts-636687330076328450.zip](#), [CMS249v1_Bonnie_test_cases-636687330189610329.xlsx](#), [cms249bonnie_-002-.docx](#)

S.2b. Data Dictionary, Code Table, or Value Sets (and risk model codes and coefficients when applicable) must be attached. (Excel or csv file in the suggested format preferred - if not, contact staff)

Attachment Attachment: [CMS249_ValueSets.xlsx](#)

S.2c. Is this an instrument-based measure (i.e., data collected via instruments, surveys, tools, questionnaires, scales, etc.)? Attach copy of instrument if available.

No, this is not an instrument-based measure **Attachment:**

S.2d. Is this an instrument-based measure (i.e., data collected via instruments, surveys, tools, questionnaires, scales, etc.)? Attach copy of instrument if available.

Not an instrument-based measure

S.3.1. For maintenance of endorsement: Are there changes to the specifications since the last updates/submission. If yes, update the specifications for S1-2 and S4-22 and explain reasons for the changes in S3.2.

S.3.2. For maintenance of endorsement, please briefly describe any important changes to the measure specifications since last measure update and explain the reasons.

Not applicable. This is a new measure.

S.4. Numerator Statement (Brief, narrative description of the measure focus or what is being measured about the target population, i.e., cases from the target population with the target process, condition, event, or outcome) DO NOT include the rationale for the measure.

IF an OUTCOME MEASURE, state the outcome being measured. Calculation of the risk-adjusted outcome should be described in the calculation algorithm (S.14).

Female patients who received an order for at least one DXA scan in the measurement period.

S.5. Numerator Details (All information required to identify and calculate the cases from the target population with the target process, condition, event, or outcome such as definitions, time period for data collection, specific data collection items/responses, code/value sets – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format at S.2b)

IF an OUTCOME MEASURE, describe how the observed outcome is identified/counted. Calculation of the risk-adjusted outcome should be described in the calculation algorithm (S.14).

Female patients who received an order for at least one DXA scan in the measurement period

Please refer to the attached Measure Authoring Tool (MAT) output and value sets.

S.6. Denominator Statement (Brief, narrative description of the target population being measured)

Female patients ages 50 to 64 years with an encounter during the measurement period.

S.7. Denominator Details (All information required to identify and calculate the target population/denominator such as definitions, time period for data collection, specific data collection items/responses, code/value sets – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format at S.2b.)

IF an OUTCOME MEASURE, describe how the target population is identified. Calculation of the risk-adjusted outcome should be described in the calculation algorithm (S.14).

Female patients ages 50 to 64 years with an encounter during the measurement period

Please refer to the attached MAT output and value sets.

S.8. Denominator Exclusions (Brief narrative description of exclusions from the target population)

The measure excludes patients who have a combination of risk factors (as determined by age) or one of the independent risk factors.

S.9. Denominator Exclusion Details (All information required to identify and calculate exclusions from the denominator such as definitions, time period for data collection, specific data collection items/responses, code/value sets – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format at S.2b.)

Exclude patients with a combination of risk factors (as determined by age) or one of the independent risk factors

Ages: 50-54 (>=4 combination risk factors) or 1 independent risk factor

Ages: 55-59 (>=3 combination risk factors) or 1 independent risk factor

Ages: 60-64 (>=2 combination risk factors) or 1 independent risk factor

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COMBINATION RISK FACTORS [The following risk factors are all combination risk factors; they are grouped by when they occur in relation to the measurement period]:

The following risk factors may occur any time in the patient's history but must be active during the measurement period:

White (race)

BMI ≤ 20 kg/m² (must be the first BMI of the measurement period)

Smoker (current during the measurement period)

Alcohol consumption (> 2 units per day (one unit is 12 oz. of beer, 4 oz. of wine, or 1 oz. of liquor))

The following risk factor may occur any time in the patient's history and must not start during the measurement period:

Osteopenia

The following risk factors may occur at any time in the patient's history or during the measurement period:

Rheumatoid arthritis

Hyperthyroidism

Malabsorption Syndromes: celiac disease, inflammatory bowel disease, ulcerative colitis, Crohn's disease, cystic fibrosis, malabsorption

Chronic liver disease

Chronic malnutrition

Documentation of history of hip fracture in parent

Osteoporotic fracture

Glucocorticoids (≥ 5 mg/per day) [cumulative medication duration ≥ 90 days]

INDEPENDENT RISK FACTORS (The following risk factors are all independent risk factors; they are grouped by when they occur in relation to the measurement period):

The following risk factors may occur at any time in the patient's history and must not start during the measurement period:

Osteoporosis

The following risk factors may occur at any time in the patient's history:

Gastric bypass

FRAX[R] ten-year probability of all major osteoporosis related fracture ≥ 8.4 percent

Aromatase inhibitors

Type I Diabetes

End stage renal disease

Osteogenesis imperfecta

Ankylosing spondylitis

Psoriatic arthritis

Ehlers-Danlos syndrome

Cushing's syndrome

Hyperparathyroidism

Marfan syndrome

Lupus

Please refer to the attached MAT output and value sets.

S.10. Stratification Information (Provide all information required to stratify the measure results, if necessary, including the stratification variables, definitions, specific data collection items/responses, code/value sets, and the risk-model covariates and coefficients for the clinically-adjusted version of the measure when appropriate – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format with at S.2b.)

Not applicable. This measure does not use stratification.

S.11. Risk Adjustment Type (Select type. Provide specifications for risk stratification in measure testing attachment)

<p>No risk adjustment or risk stratification If other:</p>
<p>S.12. Type of score: Rate/proportion If other:</p> <p>S.13. Interpretation of Score <i>(Classifies interpretation of score according to whether better quality is associated with a higher score, a lower score, a score falling within a defined interval, or a passing score)</i> Better quality = Lower score</p> <p>S.14. Calculation Algorithm/Measure Logic <i>(Diagram or describe the calculation of the measure score as an ordered sequence of steps including identifying the target population; exclusions; cases meeting the target process, condition, event, or outcome; time period for data, aggregating data; risk adjustment; etc.)</i> Refer to items S.4 to S.9 for details, S2.a for the eCQM specification, and S2.b for value sets.</p> <ol style="list-style-type: none"> 1. Determine the denominator. Identify female patients ages 50 to 64 who had an encounter during the measurement period. 2. Remove exclusions. Identify patients who meet the exclusion criteria and remove them from the denominator (female patients who have a combination of risk factors, as determined by age, or one of the independent risk factors). 3. Determine the numerator. Identify patients in the denominator (after removing patients who meet the exclusion criteria) who received at least one DXA scan order during the measurement period. 4. Calculate measure performance. Compute performance as a proportion: numerator cases divided by (denominator minus exclusions).
<p>S.15. Sampling <i>(If measure is based on a sample, provide instructions for obtaining the sample and guidance on minimum sample size.)</i> If an instrument-based performance measure (e.g., PRO-PM), identify whether (and how) proxy responses are allowed. This measure is not based on a sample. It is based on a clinician's entire patient population.</p> <p>S.16. Survey/Patient-reported data <i>(If measure is based on a survey or instrument, provide instructions for data collection and guidance on minimum response rate.)</i> Specify calculation of response rates to be reported with performance measure results. Not applicable. This measure is not based on survey or patient-reported data.</p>
<p>S.17. Data Source <i>(Check ONLY the sources for which the measure is SPECIFIED AND TESTED).</i> If other, please describe in S.18. Electronic Health Records</p> <p>S.18. Data Source or Collection Instrument <i>(Identify the specific data source/data collection instrument (e.g. name of database, clinical registry, collection instrument, etc., and describe how data are collected.)</i> If instrument-based, identify the specific instrument(s) and standard methods, modes, and languages of administration. Not applicable. This measure is not instrument-based. Data are collected from structured fields of eligible clinicians' electronic health records (EHRs).</p> <p>S.19. Data Source or Collection Instrument <i>(available at measure-specific Web page URL identified in S.1 OR in attached appendix at A.1)</i></p> <p>S.20. Level of Analysis <i>(Check ONLY the levels of analysis for which the measure is SPECIFIED AND TESTED)</i> Clinician : Individual</p> <p>S.21. Care Setting <i>(Check ONLY the settings for which the measure is SPECIFIED AND TESTED)</i> Outpatient Services If other:</p>
<p>S.22. COMPOSITE Performance Measure - Additional Specifications <i>(Use this section as needed for aggregation and weighting rules,</i></p>

or calculation of individual performance measures if not individually endorsed.)

Not applicable. This measure is not a composite measure.

2. Validity – See attached Measure Testing Submission Form

[CMS249_Testing_Attachment-636789300122672316.docx](#)

2.1 For maintenance of endorsement

Reliability testing: If testing of reliability of the measure score was not presented in prior submission(s), has reliability testing of the measure score been conducted? If yes, please provide results in the Testing attachment. Please use the most current version of the testing attachment (v7.1). Include information on all testing conducted (prior testing as well as any new testing); use red font to indicate updated testing.

2.2 For maintenance of endorsement

Has additional empirical validity testing of the measure score been conducted? If yes, please provide results in the Testing attachment. Please use the most current version of the testing attachment (v7.1). Include information on all testing conducted (prior testing as well as any new testing); use red font to indicate updated testing.

2.3 For maintenance of endorsement

Risk adjustment: For outcome, resource use, cost, and some process measures, risk-adjustment that includes social risk factors is not prohibited at present. Please update sections 1.8, 2a2, 2b1,2b4.3 and 2b5 in the Testing attachment and S.140 and S.11 in the online submission form. NOTE: These sections must be updated even if social risk factors are not included in the risk-adjustment strategy. You MUST use the most current version of the Testing Attachment (v7.1) -- older versions of the form will not have all required questions.

3. Feasibility

Extent to which the specifications including measure logic, require data that are readily available or could be captured without undue burden and can be implemented for performance measurement.

3a. Byproduct of Care Processes

For clinical measures, the required data elements are routinely generated and used during care delivery (e.g., blood pressure, lab test, diagnosis, medication order).

3a.1. Data Elements Generated as Byproduct of Care Processes.

Generated or collected by and used by healthcare personnel during the provision of care (e.g., blood pressure, lab value, diagnosis, depression score)

If other:

3b. Electronic Sources

The required data elements are available in electronic health records or other electronic sources. If the required data are not in electronic health records or existing electronic sources, a credible, near-term path to electronic collection is specified.

3b.1. To what extent are the specified data elements available electronically in defined fields (i.e., data elements that are needed to compute the performance measure score are in defined, computer-readable fields) Update this field for **maintenance of endorsement**.

[ALL data elements are in defined fields in electronic health records \(EHRs\)](#)

3b.2. If ALL the data elements needed to compute the performance measure score are not from electronic sources, specify a credible, near-term path to electronic capture, OR provide a rationale for using other than electronic sources. For **maintenance of endorsement,** if this measure is not an eMeasure (eCQM), please describe any efforts to develop an eMeasure (eCQM).

3b.3. If this is an eMeasure, provide a summary of the feasibility assessment in an attached file or make available at a measure-specific URL. Please also complete and attach the NQF Feasibility Score Card.

Attachment: [DXA_Feasibility_Scorecard_-1.xlsx](#), [DXA_Feasibility_Narrative_Final.docx](#)

3c. Data Collection Strategy

Demonstration that the data collection strategy (e.g., source, timing, frequency, sampling, patient confidentiality, costs associated with fees/licensing of proprietary measures) can be implemented (e.g., already in operational use, or testing demonstrates that it is ready to put into operational use). For eMeasures, a feasibility assessment addresses the data elements and measure logic and demonstrates the eMeasure can be implemented or feasibility concerns can be adequately addressed.

3c.1. Required for maintenance of endorsement. Describe difficulties (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, other feasibility/implementation issues.

IF instrument-based, consider implications for both individuals providing data (patients, service recipients, respondents) and those whose performance is being measured.

This is a new measure that has not yet been implemented. Attached to this submission are two documents—a feasibility summary and scorecard—that describe the difficulties regarding data collection.

3c.2. Describe any fees, licensing, or other requirements to use any aspect of the measure as specified (e.g., value/code set, risk model, programming code, algorithm).

The FRAX may be accessed online for free. Clinicians can also purchase a desktop version if desired. To our knowledge, there are no fees, licensing, or other requirements associated with using any other aspect of the measure as specified, such as the value or code sets, programming code, or algorithm. The measure is available for public use.

4. Usability and Use

Extent to which potential audiences (e.g., consumers, purchasers, providers, policy makers) are using or could use performance results for both accountability and performance improvement to achieve the goal of high-quality, efficient healthcare for individuals or populations.

4a. Accountability and Transparency

Performance results are used in at least one accountability application within three years after initial endorsement and are publicly reported within six years after initial endorsement (or the data on performance results are available). If not in use at the time of initial endorsement, then a credible plan for implementation within the specified timeframes is provided.

4.1. Current and Planned Use

NQF-endorsed measures are expected to be used in at least one accountability application within 3 years and publicly reported within 6 years of initial endorsement in addition to performance improvement.

Specific Plan for Use	Current Use (for current use provide URL)

4a1.1 For each CURRENT use, checked above (update for maintenance of endorsement), provide:

- Name of program and sponsor
- Purpose
- Geographic area and number and percentage of accountable entities and patients included
- Level of measurement and setting

In the final CY2019 Medicare Physician Fee Schedule rule posted on November 1, 2018, CMS added this measure to MIPS beginning with performance period 2019. MIPS streamlines three historical Medicare programs – the Physician Quality Reporting System, the Value-based Payment Modifier Program, and the Medicare Electronic Health Record Incentive Program – into a single payment program as part of CMS efforts to move clinicians to a performance-based payment system. MIPS is a national program where eligible clinicians can choose to report quality measures most meaningful to their practice. Clinicians will have the option to report this measure in 2019.

4a1.2. If not currently publicly reported OR used in at least one other accountability application (e.g., payment program, certification, licensing) what are the reasons? (e.g., Do policies or actions of the developer/steward or accountable entities restrict access to performance results or impede implementation?)

There are no reasons, such as policies or accessibility, which prohibit the use of this measure. CMS has adopted this measure for use in its MIPS program for performance period 2019 and future years. More information can be found in Section 4a1.3.

4a1.3. If not currently publicly reported OR used in at least one other accountability application, provide a credible plan for implementation within the expected timeframes -- any accountability application within 3 years and publicly reported within 6 years of initial endorsement. (Credible plan includes the specific program, purpose, intended audience, and timeline for implementing the measure within the specified timeframes. A plan for accountability applications addresses mechanisms for data aggregation and reporting.)

CMS submitted the measure to the Measures Under Consideration list for MIPS in June 2017. The Measure Applications Partnership reviewed the measure in December 2017 and recommended the measure for inclusion in the program with conditional support (pending NQF endorsement). CMS adopted this measure for use in its MIPS program for performance period 2019 and future years.

4a2.1.1. Describe how performance results, data, and assistance with interpretation have been provided to those being measured or other users during development or implementation.

How many and which types of measured entities and/or others were included? If only a sample of measured entities were included, describe the full population and how the sample was selected.

This is a new measure and has not yet been implemented, so we have not shared performance results with the entities being measured. However, as part of measure development and testing, we computed measure performance for two physician practices. We shared their performance data with various organizations or individuals, as described below.

With the two physician practices (test sites), we shared their individual performance rates but did not share the performance rates of the other test sites. The clinicians at these sites are the types of eligible clinicians who may, in the future, report on this measure as part of the MIPS program.

We shared performance data from both test sites with a technical expert panel (TEP). The TEP consisted of health system representatives, EHR vendors, patients, consumer representatives, and clinicians. It included clinicians who may, in the future, report on this measure as part of the MIPS program, along with other experts who would not report on this measure (for example, EHR vendors who do not work in a clinician practice).

We also shared performance data from both test sites with a DXA Overuse expert work group (EWG). The EWG consisted of experts in osteoporosis, skeletal health, and overuse measurement. It included clinicians who may, in the future, report on this measure as part of the MIPS program, along with other experts who would not report on this measure (for example, measure development experts who do not work in a clinician practice).

4a2.1.2. Describe the process(es) involved, including when/how often results were provided, what data were provided, what educational/explanatory efforts were made, etc.

This is a new measure that CMS has not yet implemented, so we do not have national performance results to share. However, during measure development and testing, we computed measure performance for two clinician practices and shared the results with the test sites, the TEP, and the EWG. With each test site, we shared only the overall measure performance for that practice. With the TEP and EWG, we shared de-identified overall measure performance across the two test sites. We shared these data once with each group. During the meetings in which we shared the data, we also reviewed the measure specifications.

4a2.2.1. Summarize the feedback on measure performance and implementation from the measured entities and others described in 4d.1.

Describe how feedback was obtained.

During measure testing, we gave the test sites an opportunity to discuss any questions or concerns they had about their measure performance.

During our meetings with the TEP and EWG, we gave the members an opportunity to discuss any questions or concerns they had about the shared performance information.

4a2.2.2. Summarize the feedback obtained from those being measured.

The two test sites did not share any significant concerns about their performance on the measure.

4a2.2.3. Summarize the feedback obtained from other users

The TEP and EWG did not share any significant concerns about clinician performance on the measure.

4a2.3. Describe how the feedback described in 4a2.2.1 has been considered when developing or revising the measure specifications or implementation, including whether the measure was modified and why or why not.

The feedback described above did not result in changes to the measure specifications.

Improvement

Progress toward achieving the goal of high-quality, efficient healthcare for individuals or populations is demonstrated. If not in use for performance improvement at the time of initial endorsement, then a credible rationale describes how the performance results could be used to further the goal of high-quality, efficient healthcare for individuals or populations.

4b1. Refer to data provided in 1b but do not repeat here. Discuss any progress on improvement (trends in performance results, number and percentage of people receiving high-quality healthcare; Geographic area and number and percentage of accountable entities and patients included.)

If no improvement was demonstrated, what are the reasons? If not in use for performance improvement at the time of initial endorsement, provide a credible rationale that describes how the performance results could be used to further the goal of high-quality, efficient healthcare for individuals or populations.

The intent of this measure is to decrease the use of DXA scans among people who are at low risk for osteoporotic fracture, thereby reducing DXA-related harms. Although the measure is not yet in use, we expect that its implementation will improve quality of care by helping clinicians track their performance and by motivating them to reduce the number of inappropriate DXA scans they order.

4b2. Unintended Consequences

The benefits of the performance measure in facilitating progress toward achieving high-quality, efficient healthcare for individuals or populations outweigh evidence of unintended negative consequences to individuals or populations (if such evidence exists).

4b2.1. Please explain any unexpected findings (positive or negative) during implementation of this measure including unintended impacts on patients.

This is a new measure that CMS has not yet implemented in a program. When CMS implements the measure, it could cause women ages 50 to 64 with osteoporosis who do not have the risk factors identified in the measure—or who have the risk factors but not the number specified—to miss needed DXA screenings. Also, the applicability of the FRAX to nonwhite subgroups has not yet been widely studied (Viswanathan et al., 2018). Nonwhite women and women with risk factors other than those identified by the measure could fail to begin or experience unnecessary delays in appropriate treatment for osteoporosis.

Citation:

Viswanathan M, Reddy S, Berkman N, Cullen K, Middleton J, Nicholson W, et al. Screening to prevent osteoporotic fractures: updated evidence report and systematic review for the U.S. Preventive Services Task Force.” JAMA. 2018;319(24):2532-51.

4b2.2. Please explain any unexpected benefits from implementation of this measure.

This measure does not explicitly assess clinician use of clinical risk assessment tools to determine patient risk for osteoporotic fracture (as recommended by the U.S. Preventive Services Task Force). However, it will encourage the use of those tools—particularly the FRAX—because clinicians will notice its inclusion in the measure as a method for identifying patients at high risk for fracture; clinicians may decide that this tool is an efficient way to screen patients before ordering a DXA scan. The measure could also increase clinicians’ consistency in determining which patients are at high risk for osteoporotic fracture—and therefore eligible for a DXA scan.

5. Comparison to Related or Competing Measures

If a measure meets the above criteria and there are endorsed or new related measures (either the same measure focus or the same

target population) or competing measures (both the same measure focus and the same target population), the measures are compared to address harmonization and/or selection of the best measure.

5. Relation to Other NQF-endorsed Measures

Are there related measures (conceptually, either same measure focus or target population) or competing measures (conceptually both the same measure focus and same target population)? If yes, list the NQF # and title of all related and/or competing measures.
Yes

5.1a. List of related or competing measures (selected from NQF-endorsed measures)

0046 : Screening for Osteoporosis for Women 65-85 Years of Age

5.1b. If related or competing measures are not NQF endorsed please indicate measure title and steward.

5a. Harmonization of Related Measures

The measure specifications are harmonized with related measures;

OR

The differences in specifications are justified

5a.1. If this measure conceptually addresses EITHER the same measure focus OR the same target population as NQF-endorsed measure(s):

Are the measure specifications harmonized to the extent possible?

Yes

5a.2. If the measure specifications are not completely harmonized, identify the differences, rationale, and impact on interpretability and data collection burden.

(NQF 0046) Screening or Therapy for Osteoporosis for Women Aged 65 Years and Older: Percentage of female patients aged 65-85 years of age who ever had a central dual-energy X-ray absorptiometry (DXA) to check for osteoporosis. NQF 0046 is in MIPS and is specified for claims and registry reporting. It complements the proposed measure because it assesses the percentage of women who receive an appropriate osteoporosis screening after age 65. There are some differences between the measures, but these are appropriate based on the measures' intents. NQF 0046 assesses for documentation of DXA results, whereas the proposed measure assesses for DXA orders. Assessing for DXA orders makes sense because the proposed measure focuses on overuse of DXA screening. Also, NQF 0046 is limited to DXA scans of the hip or spine (that is, central DXA scans), whereas the proposed measure assesses for central and peripheral DXA scans. In its 2011 recommendation, the U.S. Preventive Services Task Force recommended using central DXA scans to assess for osteoporosis—and NQF 0046 complies with this recommendation. But the proposed measure, as an overuse measure, assesses for any type of DXA scan because any type could be inappropriate. Together, these two measures assess the appropriate use of DXA scans in women 65 and older, along with inappropriate use of DXA scans in women under age 65.

5b. Competing Measures

The measure is superior to competing measures (e.g., is a more valid or efficient way to measure);

OR

Multiple measures are justified.

5b.1. If this measure conceptually addresses both the same measure focus and the same target population as NQF-endorsed measure(s):

Describe why this measure is superior to competing measures (e.g., a more valid or efficient way to measure quality); OR provide a rationale for the additive value of endorsing an additional measure. (Provide analyses when possible.)

Not applicable. We did not identify any competing measures.

Appendix

A.1 Supplemental materials may be provided in an appendix. All supplemental materials (such as data collection instrument or methodology reports) should be organized in one file with a table of contents or bookmarks. If material pertains to a specific submission form number, that should be indicated. Requested information should be provided in the submission form and required

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attachments. There is no guarantee that supplemental materials will be reviewed.

[No appendix Attachment:](#)

Contact Information

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Co.2 Point of Contact: Helen, Dollar-Maples, Helen.Dollar-Maples@cms.hhs.gov, 410-786-7214-

Co.3 Measure Developer if different from Measure Steward: NCQA

Co.4 Point of Contact: Jenna, Williams-Bader, bader@ncqa.org, 202-955-5103-

Additional Information

Ad.1 Workgroup/Expert Panel involved in measure development

Provide a list of sponsoring organizations and workgroup/panel members' names and organizations. Describe the members' role in measure development.

The following individuals participated in the DXA Overuse EWG. We selected EWG members based on their expertise in osteoporosis, skeletal health, and overuse measurement. They provided feedback throughout the measure's development, from 2013 to 2014—commenting on the clinical components of the measure, including the denominator, numerator, and exclusions, and on the measure's importance, feasibility, validity, and usability.

Itara Barnes, Medical University of South Carolina
Meryl S. LeBoff, M.D., Brigham and Women's Hospital
Michael LeFevre, M.D., M.S.P.H., University of Missouri
Mark Robbins, M.D., Harvard Vanguard
Kenneth Saag, M.D., M.Sc., University of Alabama at Birmingham

The following individuals participated in the TEP. This multistakeholder group had representatives from health systems, clinician practices, EHR vendors, and consumer advocacy organizations. The TEP provided feedback throughout the measure's development, from 2013 to 2014, on the importance, feasibility, validity, and usability of the measure.

Ayodola Anise, M.H.S., senior research associate, Engelberg Center for Health Care Reform, The Brookings Institute
Jessica Bartell, M.D., M.S., clinical informatics physician, Epic
Nate Bennett, M.D., physician, Preferred Primary Care Physicians
Jason Colquitt, executive director, research services, Greenway Medical Technologies, Inc.
William F. Groneman, M.H.A., executive vice president, system development, TriHealth, Inc.
Erin A. Mackay, M.P.H., associate director, health information technology systems, National Partnership for Women & Families
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Daniel Todd Rosenthal, M.D., M.Sc., M.P.H., director of health care intelligence, Inova Health Systems
Shannon Sims, M.D., Ph.D., director of clinical informatics and medical director of information services, Rush University Medical Center
Samuel S. Spicer, M.D., M.M.M., vice president of medical affairs, New Hanover Regional Medical Center
Rachelle "Shelly" Spiro, R.Ph., F.A.S.C.P., director, Pharmacy e-Health Information Technology Collaborative
Andy Steele, M.D., M.P.H., M.Sc., director of medical informatics, Denver Health
Jonathan P. Weiner, Dr.P.H., M.S., professor and program director, Johns Hopkins Bloomberg School of Public Health
Thomas R. Williams, M.P.H., M.B.A., Dr.P.H., executive director, Integrated Healthcare Association

Measure Developer/Steward Updates and Ongoing Maintenance

Ad.2 Year the measure was first released: 2018

Ad.3 Month and Year of most recent revision:

Ad.4 What is your frequency for review/update of this measure? CMS conducts an annual review to determine potential updates to the measure.

Ad.5 When is the next scheduled review/update for this measure? 2019

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Ad.8 Additional Information/Comments: Not applicable.