



US DEPARTMENT OF VETERANS AFFAIRS OFFICE OF INSPECTOR GENERAL

Office of Healthcare Inspections

VETERANS HEALTH ADMINISTRATION

VHA Policy and Practice Support Age-Specific Osteoporosis Screening in Women

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Executive Summary

The VA Office of Inspector General (OIG) conducted a national review to assess Veterans Health Administration (VHA) policy pertaining to osteoporosis screening and to determine osteoporosis screening rates in women patients enrolled in VHA primary care who are age 65 and older. Osteoporosis is a disease characterized by decreased [bone mineral density](#) (BMD) and bone quality, resulting in an increased risk of [fractures](#).¹ The risk for developing osteoporosis increases with age, particularly in women after menopause, and osteoporosis is the most common cause of fractures in postmenopausal women.

VHA Osteoporosis Screening Program

During the 2023 fiscal year (FY), 21.5 percent of women seen in VHA were age 65 and older, up from 12.8 percent in FY 2018.² Given the growing population of aging women veterans, the impact of osteoporosis screening is increasingly relevant in preventive care. The OIG found that VHA osteoporosis screening policy is consistent with US Preventive Services Task Force (USPSTF) guidelines, which recommend screening women age 65 and older for osteoporosis.³

Ninety-five percent of VHA facilities report offering BMD testing. If the BMD testing is not available at the patient's assigned facility or if the facility cannot meet standards for wait or drive times, a patient may also receive BMD testing through a community location.⁴

VHA has implemented actions targeted at staff to improve osteoporosis screening, including an Osteoporosis Screening and Management Toolkit and a national [clinical reminder](#). Clinical reminder use appeared to vary between facilities as the OIG observed that there were sites where clinical reminder use was not evident in any of the patient records sampled after implementation of the clinical reminder.

¹ The underlined terms are hyperlinks to a glossary. To return from the glossary, press and hold the “alt” and “left arrow” keys together.

² The fiscal year for the federal government is a 12-month period from October 1 through September 30 of any given year and is designated by the calendar year in which it ends.

³ USPSTF, “Screening for Osteoporosis to Prevent Fractures: US Preventive Services Task Force Recommendation Statement,” JAMA 319, no. 24 (June 26, 2018): 2521-2531, <https://doi.org/10.1001/jama.2018.7498>. The USPSTF recommendation applies to older women without a history of fracture related to minimal trauma, conditions that increase the risk of falls, or conditions or medications that may cause secondary osteoporosis.

⁴ John S. McCain III, Daniel K. Akaka, and Samuel R. Johnson VA Maintaining Internal Systems and Strengthening Integrated Outside Networks (MISSION) Act of 2018, Pub. L. No. 115-182, 132 Stat. 1393 (2018) § 101; 38 U.S.C. § 1703(d); 38 C.F.R. § 17.4010 (2023); 38 C.F.R. § 17.4040 (2023); VHA Office of Community Care, “Veteran Community Care Eligibility” (fact sheet), September 9, 2019.

VHA measures osteoporosis screening rates through its External Peer Review Program (EPRP).⁵ VHA EPRP osteoporosis screening rates fluctuated from 44.1 percent to 70.5 percent during the OIG's review, from FY 2018 to FY 2023. Changes in screening rates temporally correlated with a change in the EPRP metric (decreased) and the implementation of a national clinical reminder (increased).

OIG Determination of Women Patients Screened or Offered Screening

The OIG review population included women who were 65 or older on February 1, 2018, with at least one primary care visit at a VHA facility between February 1, 2018, and January 31, 2020. This date range was selected to coincide with the beginning of the [COVID-19 pandemic](#), when patients may have been less likely to seek elective care. The OIG identified members of the review population who had BMD testing as evidenced by BMD-specific [Current Procedural Terminology \(CPT\) codes](#) (see appendix B). The OIG also performed electronic health record (EHR) reviews of a random sample of patients without a BMD test CPT code from January 1, 2003, to September 30, 2023 (review period), to determine which of those patients had been offered a BMD test and to look for documentation of a completed test. Statistical inference was used to estimate what percentage of the full review population had received or been offered testing.

The OIG found that most eligible women patients during the review period were offered or underwent screening for osteoporosis. The OIG estimated 86.8 percent of the review population completed BMD testing and 93.1 percent of the review population had or were offered BMD testing. OIG-measured screening rates were higher than VA-measured EPRP screening rates, although the results are not directly comparable as they were derived using different methodologies.

During EHR reviews, the OIG identified patients at higher risk for osteoporosis and fracture, based on medical conditions and the use of certain medications, who were not offered BMD testing. Lack of BMD testing for these patients represented missed opportunities for osteoporosis evaluation and potential intervention to reduce fracture risk.

The OIG made one recommendation to the Under Secretary for Health related to identifying barriers to clinical reminder use.

⁵ EPRP is a VHA program designated to measure and report quality of care as specified by VHA and external accrediting organizations. VA Analytics and Performance Integration Performance Management, *External Peer Review Program Guide*.

VA Comments and OIG Response

The Under Secretary for Health concurred with the recommendation and provided an acceptable action plan (see appendix A). The OIG will follow up on the planned actions until they are completed.

A handwritten signature in black ink, reading "John D. Daigh, Jr., M.D." in a cursive script.

JOHN D. DAIGH, JR., M.D.
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Abbreviations

BMD	bone mineral density
CI	confidence interval
COVID	coronavirus disease
CPT	Current Procedural Terminology
DXA	dual-energy x-ray absorptiometry
EHR	electronic health record
EPRP	External Peer Review Program
FY	fiscal year
OIG	Office of Inspector General
USPSTF	United States Preventive Services Task Force
VHA	Veterans Health Administration



Introduction

The VA Office of Inspector General (OIG) conducted a national review to assess Veterans Health Administration (VHA) policy pertaining to osteoporosis screening and to determine osteoporosis screening rates in women patients enrolled in VHA primary care who are age 65 and older.

Osteoporosis

Osteoporosis is a disease characterized by decreased [bone mineral density](#) (BMD) and bone quality, resulting in an increased risk of [fractures](#).¹ The risk for developing osteoporosis increases with age, particularly in women after menopause when estrogen levels decline. Osteoporosis is the most common cause of fractures in postmenopausal women, with one out of two women age 50 and older experiencing an osteoporosis-related fracture during their lifetime.

Other risk factors for osteoporosis-related fractures include a history of previous fracture, excessive alcohol use, smoking, medication-induced bone loss, and low body weight. Fractures can occur in any bone, though most commonly osteoporotic fractures occur in the spine, wrist, and hip. Patients with fractures may experience decreased mobility and independence, chronic pain, and an increased risk of death. Twenty to 30 percent of patients with hip fractures die within one year of experiencing the fracture.

The World Health Organization (WHO) defines osteoporosis as a BMD two-and-a-half standard deviations or more below a reference population of young healthy women.² The most commonly used test for measuring BMD is dual-energy x-ray absorptiometry (DXA). DXA uses low levels of radiation to measure BMD at bone sites prone to fracture, with measurement at the hip and spine (central DXA) considered to be the most reliable way to diagnose osteoporosis and assess fracture risk. Other testing modalities such as [peripheral DXA](#) (forearm and heel), [computed tomography absorptiometry](#), and [quantitative ultrasound densitometry](#) tests can also be used to determine fracture risk. Initial BMD testing with one of these technologies may be useful when central DXA is not immediately available, though most treatment guidelines use BMD as measured by central DXA.

¹ The underlined terms are hyperlinks to a glossary. To return from the glossary, press and hold the “alt” and “left arrow” keys together.

² WHO Technical Report Series, “Prevention and Management of Osteoporosis,” accessed July 24, 2024, https://iris.who.int/bitstream/handle/10665/42841/WHO_TRS_921.pdf?sequence=1&isAllowed=y.

The United States Preventive Services Task Force (USPSTF) recommends screening women age 65 and older for osteoporosis.³ VHA has seen a growth in the women veteran population age 65 and older (table 1). Given the growing number of eligible women veterans, the impact of osteoporosis screening is increasingly relevant in preventive care.

Table 1. Women Veteran Patient Population Seen in VHA From FY 2018 Through FY 2023

Fiscal Year	All Female Users*	Female Users Age ≥ 65 years	Percentage of Female Users Age ≥ 65 years
2018	747,424	95,412	12.8
2019	777,773	105,947	13.6
2020	744,288	111,743	15.0
2021	951,268	175,777	18.5
2022	981,367	215,086	21.9
2023	950,996	203,977	21.5

Source: VHA Corporate Data Warehouse.

*“User” is an enrollee who has sought and received VHA care. VHA Support Service Center (VSSC), “Current Enrollment - Cube and Briefing Books Current Enrollment and Cost by Preferred Facility and Priority Current Enrollment and New User Cost by Preferred Facility and Priority Documentation,” updated November 9, 2023.

³ USPSTF, “Screening for Osteoporosis to Prevent Fractures: US Preventive Services Task Force Recommendation Statement,” JAMA 319, no. 24 (June 26, 2018): 2521-2531, <https://doi.org/10.1001/jama.2018.7498>. The USPSTF recommendation applies to older women without a history of fracture related to minimal trauma, conditions that increase the risk of falls, or conditions or medications that may cause secondary osteoporosis.

Scope and Methodology

The OIG initiated this national review on April 6, 2021.

The OIG interviewed the Deputy Chief Consultant, Woman's Health Services; the Program Director Specialty Care Services; an endocrinology fellowship director; as well as staff from VHA Clinical Operations, the Preventive Practice Group in the VHA National Center for Health Promotion and Disease Prevention, the National Radiology Program, the Office of Performance Measurement, and the Office of Community Care.⁴

The OIG reviewed relevant VHA policies and information pertaining to osteoporosis screening and USPSTF guidelines dating back to 2002.

The review population included women who were 65 or older on February 1, 2018, with at least one primary care visit at a VHA facility between February 1, 2018, and January 31, 2020. This date range was selected to coincide with the beginning of the [COVID-19 pandemic](#) when patients may have been less likely to seek elective care. Patients who were at least 65 years old prior to 2003 were excluded because the USPSTF guidelines did not recommend osteoporosis screening in women age 65 and older until 2002. In addition, the older a woman is over age 65, the more time has elapsed to get BMD testing. Limiting the age range included in the review population reduced the bias of older women having higher rates of BMD testing.

The OIG reviewed the available electronic health records (EHRs) from January 1, 2003, to September 30, 2023 (review period). Women were counted in the screened population if they underwent BMD testing during the review period.⁵ The USPSTF guidelines do not endorse a time frame for screening once a woman turns 65 or an upper age limit for screening. The OIG review period allowed patients a minimum of five-and-a-half years after turning 65 to receive screening and be counted in the screened population.

For the purpose of this review, a BMD test was considered “offered” if the medical reviewer determined that BMD testing had been discussed with the patient or had been ordered but had not been completed; this included situations when the patient declined testing, ordered testing was not scheduled, or the patient did not appear for an appointment. Women were counted in the offered population if EHR documentation indicated that they were offered BMD testing during the review period.

For this review, the OIG did not distinguish between patients who met criteria for screening for osteoporosis and patients who would be appropriate for osteoporosis testing due to clinical

⁴ The Office of Performance Measurement is a functional area in the Office of Analytics and Performance Integration.

⁵ For this report, BMD tests included several types of imaging including dual energy x-ray absorptiometry, computed tomography, and ultrasound.

conditions associated with this disease.⁶ Men were excluded from the review because the USPSTF does not recommend screening in men as “current evidence is insufficient to assess the balance of benefits and harms of screening for osteoporosis to prevent osteoporotic fractures in men.”⁷ Transgender patients were excluded from the review as there are no USPSTF guidelines for osteoporosis screening in this population.

The OIG used two sources of data to determine screening rates in the review population: Corporate Data Warehouse data and EHRs. The OIG identified members of the review population who had BMD testing as evidenced by BMD-specific [Current Procedural Terminology \(CPT\) codes](#) (see appendix B). A pilot EHR review of the patients without evidence of a BMD test in the Corporate Data Warehouse data was performed to increase inter-rater reliability and provide additional data for calculating a sample size for this population. The pilot EHR reviews were included in the total sample of the review population. Next, EHR reviews of a random sample of patients without a BMD test CPT code were performed to determine which of those patients had been offered a BMD test and documentation of a BMD test completed outside of the facility. The EHR review of 807 patients, a statistically representative sample of the full review population, found that certain categories of patients in the review population should not have been included, such as men who were incorrectly identified as women, transgender patients, or those who did not receive primary care through VHA. Because of these exclusions, the size of the overall review population required adjustment. From the EHR review, statistical inference was used to estimate what percentage of the full review population had received or been offered BMD testing.

Physicians experienced in osteoporosis care conducted all EHR reviews. The reviewers were experienced in primary care and women’s health, and specialties including rheumatology, orthopedic surgery, and physical medicine and rehabilitation.

In the absence of current VA or VHA policy, the OIG considered previous guidance to be in effect until superseded by an updated or recertified directive, handbook, or other policy document on the same or similar issue(s).

Oversight authority to review the programs and operations of VA medical facilities is authorized by the Inspector General Act of 1978, as amended, 5 U.S.C. §§ 401–424. The OIG reviews available evidence within a specified scope and methodology and makes recommendations to VA leaders, if warranted. Findings and recommendations do not define a standard of care or establish legal liability.

⁶ A screening test is performed when a patient does not have symptoms of a disease. A diagnostic test is performed to determine why symptoms are occurring.

⁷ USPSTF, “Screening for Osteoporosis to Prevent Fractures: US Preventive Services Task Force Recommendation Statement,” JAMA 319, no. 24 (June 26, 2018): 2521-2531, <https://doi.org/10.1001/jama.2018.7498>.

The OIG conducted the inspection in accordance with *Quality Standards for Inspection and Evaluation* published by the Council of the Inspectors General on Integrity and Efficiency.

Review Limitations

Many VHA patients receive care at non-VHA facilities in addition to the care they receive at VHA. This clinical review was limited to the information contained in VHA EHR documentation. If information was not conveyed to VHA providers or documented in the EHR, the OIG review would not have discovered such information. The OIG noted that some VHA providers documented unsuccessful attempts to access records from non-VHA providers when patients received their care from both VHA and non-VHA providers or when patients transitioned their primary care from their non-VHA providers to VHA.

During the review, the OIG observed that some patients received treatment with medication for osteoporosis but did not find corresponding DXA results. Although these patients possibly underwent BMD testing outside the VHA system, they were not included in the tested population due to lack of documented BMD testing or offer of testing.

The OIG did not distinguish between screening and diagnostic testing. This determination was considered a minor limitation because the review population should have had at least one BMD test whether done for screening or diagnostic purposes. Therefore, the review results evaluated BMD testing rates rather than osteoporosis screening rates.

Additionally, the review period included the COVID-19 pandemic and testing may have been limited during the pandemic.

The OIG review period ended in fiscal year (FY) 2023.⁸ Some women who were counted as being non-tested in the review may undergo BMD testing in the future as part of their clinical care.

BMD testing is the initial step in the evaluation for osteoporosis. The OIG did not review the care after BMD testing; therefore, this report offers a limited look at the quality of osteoporosis care of women patients.

⁸ The fiscal year for the federal government is a 12-month period from October 1 through September 30 of any given year and is designated by the calendar year in which it ends.

Review Results

1. VHA Osteoporosis Screening Program

The OIG found that VHA policy is consistent with USPSTF guidelines, most VHA facilities offer on-site DXA testing, and VHA tracks screening rates through their External Peer Review Program (EPRP) and has taken action to improve screening rates.

VHA Osteoporosis Screening Guidelines and Practice

VHA policy states that preventive care for women must include “age and risk appropriate” screening for osteoporosis.⁹ The purpose of screening is to detect osteoporosis before a patient experiences a fracture, as treatment reduces the risk of fracture. VHA guidelines for osteoporosis screening align with the USPSTF recommendations for osteoporosis screening to prevent fractures.¹⁰ Since 2002, the USPSTF has recommended screening women age 65 and older for osteoporosis.¹¹

Ninety-five percent of VHA facilities report offering BMD testing. A patient may receive BMD testing at a VHA facility or at a community location, depending on whether the service is available at the patient’s assigned facility and if the facility can meet standards for wait or drive times.¹²

VHA External Peer Review Program Data

The OIG reviewed osteoporosis screening rates reported by VHA’s EPRP.¹³ The EPRP osteoporosis screening measure, based on the Healthcare Effectiveness Data and Information Set

⁹ VHA Directive 1330.01(3), *Health Care Services for Women Veterans*, February 15, 2017, amended June 29, 2020.

¹⁰ “Screening for Osteoporosis,” VHA National Center for Health Promotion and Disease Prevention (NCP), http://vaww.prevention.va.gov/CPS/Screening_for_Osteoporosis.asp#1. (This website site is not publicly accessible.)

¹¹ USPSTF, “Osteoporosis: Screening, 2002,” September 17, 2002. The USPSTF recommendation applies to older women without a history of fracture related to minimal trauma, conditions that increase the risk of falls, or conditions or medications that may cause secondary osteoporosis.

¹² John S. McCain III, Daniel K. Akaka, and Samuel R. Johnson, VA Maintaining Internal Systems and Strengthening Integrated Outside Networks (MISSION) Act of 2018, Pub. L. No. 115-182, 132 Stat. 1393 (2018) § 101; 38 U.S.C. § 1703(d); 38 C.F.R. § 17.4010 (2023); 38 C.F.R. § 17.4040 (2023); VHA Office of Community Care, “Veteran Community Care Eligibility” (fact sheet), September 9, 2019.

¹³ EPRP is a VHA program designated to measure and report quality of care as specified by VHA and external accrediting organizations. VA Analytics and Performance Integration Performance Management, *External Peer Review Program Guide*.

(HEDIS) osteoporosis screening measure, changed during OIG’s review period.¹⁴ The applicable EPRP measure from FY 2018 through the second quarter of FY 2021 was “Osteoporosis Screening (ostp10).”¹⁵ Inclusion criteria for ostp10 were women age 65 and older seen in certain outpatient clinics who had documentation of bone density measured at both the femoral neck (hip) and lumbar spine by DXA. Exclusion criteria for ostp10 included women with terminal cancer, hospice enrollment, or life expectancy of less than six months, as well as women who received behavioral health care at VHA, though refused primary care at VHA.

VHA transitioned to the EPRP measure “Osteoporosis Screening in Older Women (osw1h)” in the third quarter of FY 2021.¹⁶ Inclusion criteria for osw1h are women age 65 to 75 seen in certain outpatient clinics, who had one or more osteoporosis screening test(s) on or between the patient’s 63rd birthday to the end of the study review date.¹⁷ Exclusion criteria included enrollment in hospice or receipt of palliative care, long-term (>60 days) institutionalization, frailty and advanced illness, and treatment with an osteoporosis or dementia medication.

Osteoporosis screening rates, as measured by VHA, remained in the high 60 percentile range from FY 2018 through the second quarter of FY 2021, and then dropped to 44.1 percent when the metric changed in the third quarter of FY 2021 (see figure 1).¹⁸ VHA-reported osteoporosis screening rates increased in FY 2022. In FY 2023, VHA reported a 70.5 percent screening rate, the highest during the period reviewed by the OIG.

¹⁴ HEDIS is a standardized health measurement tool that can be used to understand population health and quality of care a population receives. “HEDIS is a registered trademark of the National Committee for Quality Assurance (NCQA).”

¹⁵ VHA Office of Quality and Patient Safety, *Electronic Technical Manual*, “Electronic Technical Manual Measure Specification: Osteoporosis Screening (ostp10),” accessed February 3, 2023, <http://pm.rtp.med.va.gov/ReportServer/Pages/ReportViewer.aspx?/Performance+Reports/Measure+Management/Measure&Measure=3645&Year=2022&rs:Command=Render>. (This site is not publicly accessible.)

¹⁶ VHA Office of Quality and Patient Safety, *Electronic Technical Manual*, “Electronic Technical Manual Measure Specification: Osteoporosis Screening (o),” accessed February 3, 2023, <http://pm.rtp.med.va.gov/ReportServer/Pages/ReportViewer.aspx?/Performance+Reports/Measure+Management/Measure&Measure=3645&Year=2022&rs:Command=Render>. (This site is not publicly accessible.)

¹⁷ Osteoporosis screening tests included DXA scan of axial skeleton (hips, pelvis, spine) or peripheral skeleton (radius, wrist, and heel), ultrasound bone density peripheral sites, computed tomography axial skeleton, and DXA axial skeleton. VHA chose an age lookback of 63 starting FY 2022 Q3, which varies from the HEDIS measure that uses an age lookback of 65. EPRP data are scored and reported on a quarterly basis.

¹⁸ “Performance Measures Reports,” VHA Clinical Performance Measurement (PM) Program, accessed May 14, 2024, <https://vaww.qps.med.va.gov/divisions/api/pm/cpm/pmreports.aspx>. (This site is not publicly accessible.)

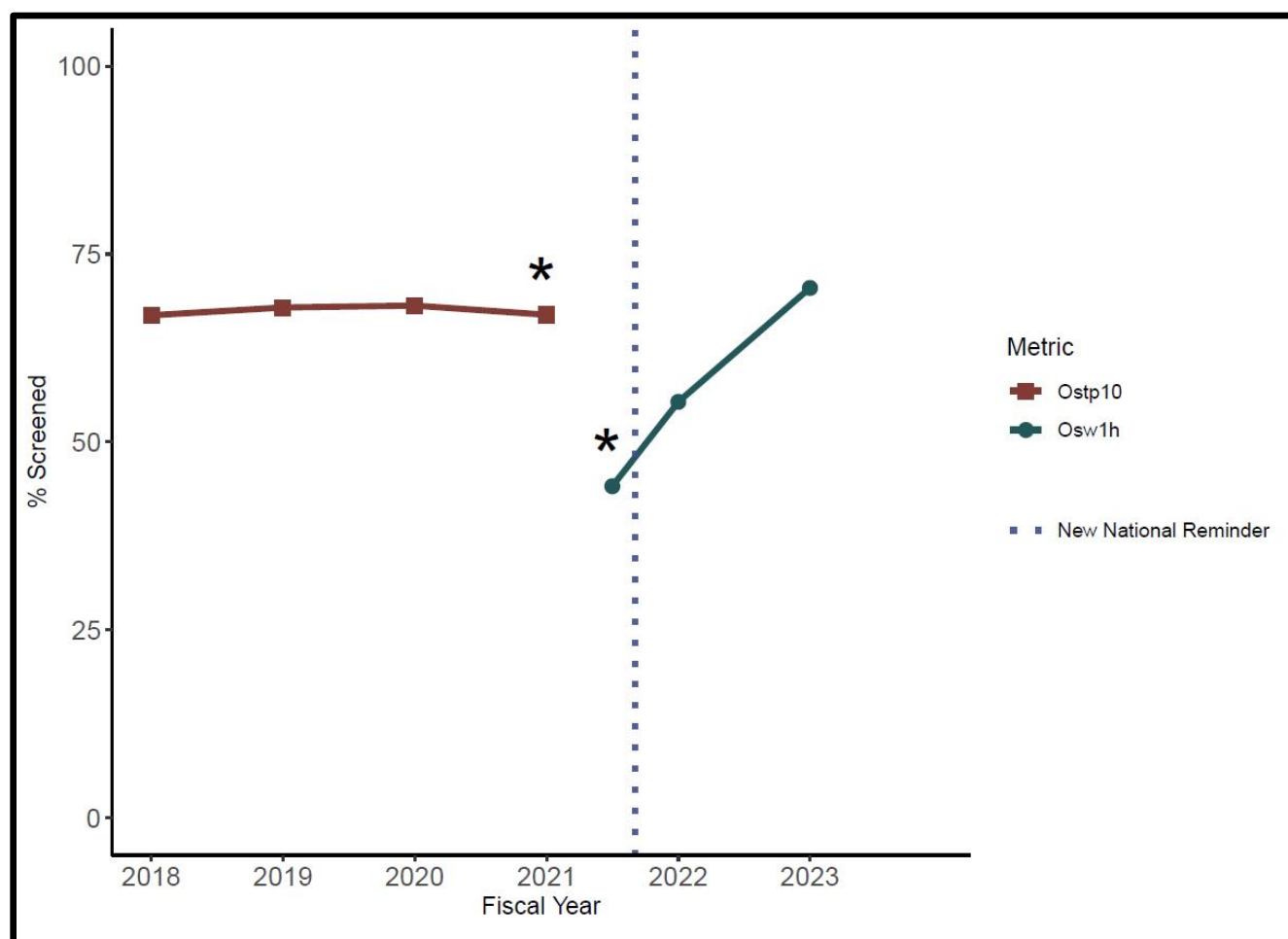


Figure 1. VHA EPRP osteoporosis screening rates FY 2018 through FY 2023.

Source: VHA EPRP data.

*Data point represents six months of data, unlike unmarked points that represent a year.

VHA Actions to Improve Screening Rates

The Deputy Chief Consultant, Women's Health Services, informed the OIG that VHA implemented actions targeted at staff to improve osteoporosis screening rates. The Women's Program Office developed the Osteoporosis Screening and Management Toolkit and conducted an educational session with a guided tour of the toolkit during a national call with women veteran program managers and women's health medical directors in the fourth quarter of FY 2020 (September 2020).

The VHA Women's Program Office also launched a [clinical reminder](#) for osteoporosis screening in the third quarter of FY 2021 (June 2021). The OIG EHR review identified patients who were not screened or offered osteoporosis testing prior to June 2021, who were offered testing or tested in association with the use of a clinical reminder after June 2021. Clinical reminder use appeared to vary between facilities as the OIG observed that there were sites where clinical

reminder use was not evident in any of the patient records sampled after June 2021. The OIG noted that improvements in screening temporally correlated with the implementation of the national clinical reminder.

2. OIG Determination of Women Patients Screened or Offered Screening

The OIG found that most eligible women patients were offered or underwent screening for osteoporosis. OIG-estimated screening rates were higher than VHA-estimated screening rates. The OIG identified patients who were at risk for osteoporosis and fracture, however, who were not offered BMD testing.

OIG-Estimated Screening Rates

The OIG initially identified 55,624 patients who met criteria for inclusion in the review population. Of these, 37,255 patients (67 percent) had BMD testing based on review of their CPT codes. Of the remaining 18,369 records, the OIG reviewed a statically representative sample of 807 records to estimate the number of patients who had or were offered BMD testing (see figure 2).

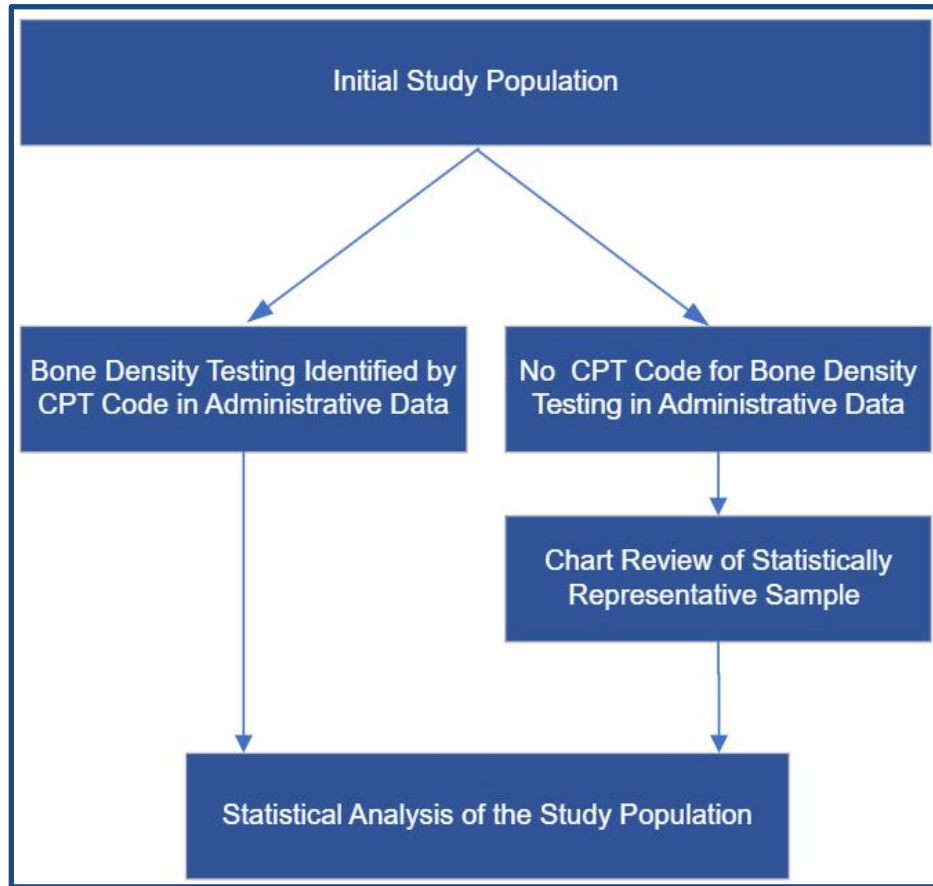


Figure 2. Composition of review population.

Source: The OIG developed this figure based on scope and methodology for this review. The review size of the overall review population was adjusted for patients meeting exclusion criteria including men, transgender patients, and patients not receiving primary care through VHA.

The OIG estimated 86.8 percent (95 percent confidence interval (CI): 85.7–87.9 percent) of the review population completed BMD testing. Additionally, the OIG estimated that 93.1 percent (95 percent CI: 92.1–94.0 percent) of the review population had or were offered BMD testing. (see table 2 and figure 3).

Table 2. Analysis of Review Population with Estimates and Confidence Intervals

	Estimate	95% Confidence Interval
Population	54,759	54,486–55,009
Number Tested	47,544	46,907–48,158
% Tested	86.8	85.7–87.9
Number Tested or Offered	50,981	50,413–51,527
% Tested or Offered	93.1	92.1–94.0

Source. OIG analysis.

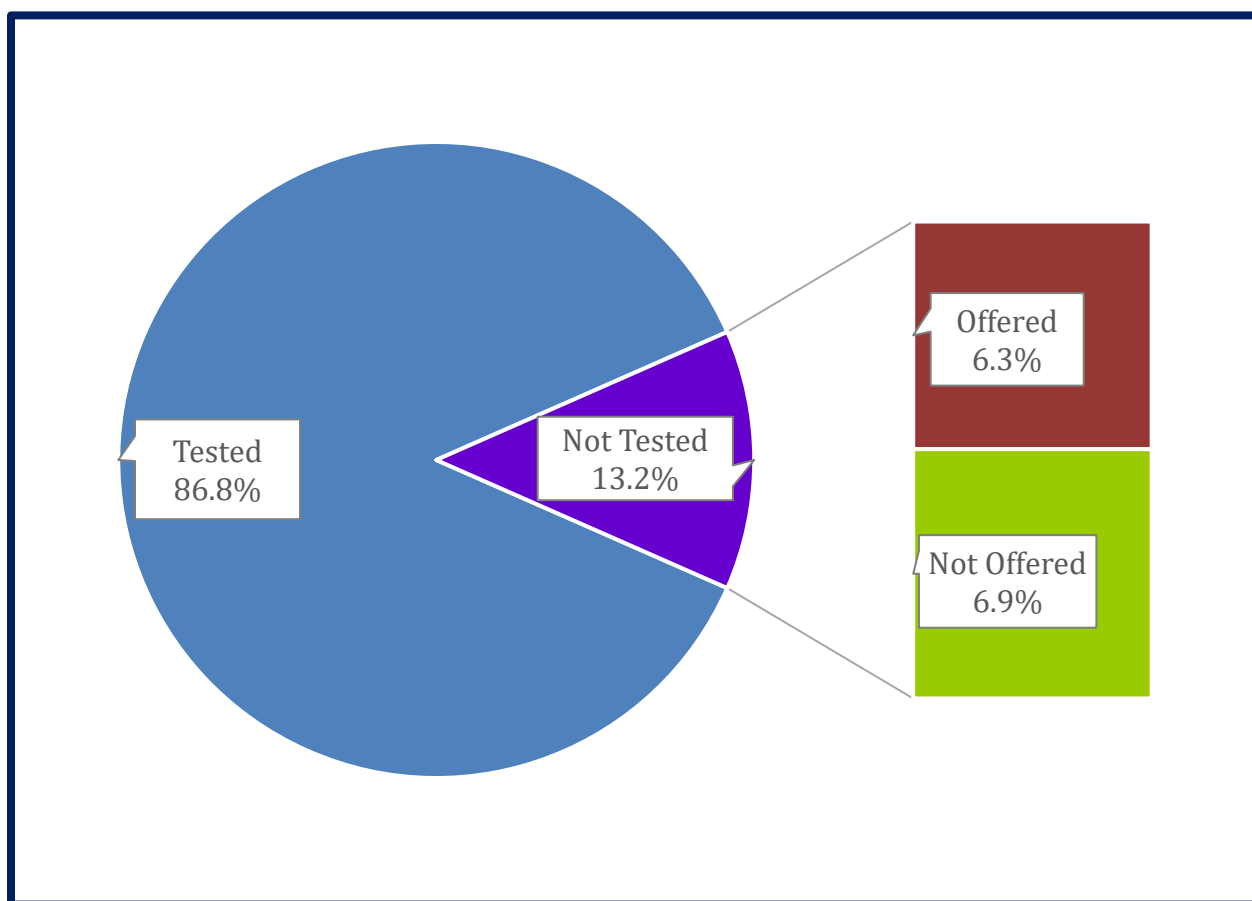


Figure 3. Composition of review population.

Source: The OIG developed this figure based on scope and methodology for this review.

Note: The 86.8 percent representing the tested population and the 6.3 percent representing those offered but not tested when combined equal the “tested or offered” category seen in table 2.

Virtually all the patients with BMD identified by CPT code underwent testing with DXA, although the OIG observed some patients were screened with computed tomography and ultrasound.

The OIG results are not directly comparable with EPRP data given that they were derived using different methodologies. OIG methodologies differed in four ways.

- The OIG and EPRP used different review periods for the clinical reviews. The OIG used a minimum five-and-a-half-year follow-up period and the EPRP does not use a follow-up period.
- The EPRP population included women patients seen in certain outpatient clinics, whereas the OIG review only included patients seen in primary care clinics where testing may be more likely to be offered and recorded.

- Until the third quarter of FY 2021, EPRP required DXA testing at both the hip and lumbar spine; whereas, the OIG review included ultrasound, computed tomography scan, and DXA testing and did not require specific anatomic locations for BMD testing.
- The EPRP criteria contained multiple exclusions based on patient medical history and longevity, and OIG review criteria did not exclude any women 65 years of age and older.

Concerns Related to the Untested Population

The OIG identified some women who were at higher risk for developing osteoporosis due to medical conditions and use of certain medications and did not have documentation that BMD testing was offered or performed. Representative examples are discussed below.

Smoking and [premature menopause](#) were not always associated with BMD testing. Patient A, in her 70s, was a smoker who underwent surgical menopause in her 40s (treated with hormone replacement therapy). The OIG did not find evidence that BMD testing was offered or performed. The patient subsequently sustained a hip fracture, which was treated surgically.

Certain medical conditions facilitate bone loss and place patients at risk for developing osteoporosis. Patient B, in her 70s, had a history of multiple sclerosis, Parkinson's disease, and falls. The Bone Health and Osteoporosis Foundation identifies both multiple sclerosis and Parkinson's disease as conditions associated with bone loss.¹⁹ Additionally, the Bone Health and Osteoporosis Foundation notes that falls within the past year precede the majority of fractures in older adults.²⁰ The OIG did not find evidence that BMD testing was offered to the patient.

X-ray evidence of bone loss can suggest osteoporosis, but a person must lose a significant amount of bone mass before bone loss is detected on x-ray. Patient C, in her 70s, underwent an x-ray of her knee and the radiologist documented a finding of [osteopenia](#), which indicated a decrease in BMD.²¹ The patient's provider informed her that she had "low bone mineralization" in the "pre-osteoporosis stage" and counseled her to take calcium and Vitamin D. This patient was diagnosed with hyperparathyroidism, a condition that increases osteoporosis risk. The OIG did not find documentation of an offer for BMD testing to further characterize bone loss and determine if the patient had osteoporosis.

A previous fracture is a predictor of future fractures, and this risk is further increased in patients with a history of falls. Patient D, in her 60s, with a history of smoking and alcohol dependence,

¹⁹ "What is Osteoporosis and What Causes It?," Bone Health and Osteoporosis Foundation, accessed February 10, 2023, <https://www.bonehealthandosteoporosis.org/patients/what-is-osteoporosis/>.

²⁰ National Osteoporosis Foundation, "Healthcare Professionals Toolkit," accessed March 23, 2021, <https://static1.squarespace.com/static/5d7aabc5368b54332c55df72/t/5dd2e2a92e1e1821e328308e/1574101724294/HCP+Toolkit-with+graphics.pdf>.

²¹ An x-ray can detect bone loss but cannot diagnose osteoporosis. A DXA scan is required for BMD measurement to diagnosis osteoporosis.

sustained a fracture of the humerus after a fall. Ten years later, the patient fell again with resulting back pain, and x-rays revealed vertebral compression fractures.²² In this patient with a history of prior fractures and other osteoporosis risk factors, the OIG did not find documentation of a discussion about osteoporosis risk or an offer for BMD testing in the 10-year period between falls. The OIG noted that a DXA was not performed until the compression fractures were discovered.

Lack of BMD tests in these patients represented missed opportunities for osteoporosis evaluation and potential intervention to reduce fracture risk.

Conclusion

VHA policy states that preventive care for women patients must include osteoporosis screening, and the OIG found that VHA osteoporosis screening practices align with USPSTF recommendations. VHA offers BMD testing at most of its facilities and utilizes BMD testing in the community when not available at the facility or for otherwise eligible patients.

The OIG found that most women patients meeting age-specific criteria for osteoporosis screening were offered or underwent BMD testing. OIG-estimated screening rates were higher than VHA-estimated screening rates, although different methodologies were used to determine screening rates. The OIG identified patients who were at risk for osteoporosis and fracture who were not offered BMD testing.

VHA implemented measures to improve osteoporosis screening, including introduction of a toolkit (September 2020) and a clinical reminder (June 2021). Improvement in osteoporosis screening rates temporally correlated with the implementation of the clinical reminder. Clinical reminder use appeared to vary between facilities as the OIG observed that there were sites where clinical reminder use was not evident in any of the patient records sampled after implementation of the clinical reminder.

The OIG made one recommendation to the Under Secretary for Health.

Recommendation

1. The Under Secretary for Health works with the Women's Program Office to gain an understanding of barriers to osteoporosis clinical reminder use and based on results, implement action as needed.

²² The radiologist could not determine the age of the compression fractures based on x-ray findings.

Appendix A: Office of the Under Secretary for Health Memorandum

Department of Veterans Affairs Memorandum

Date: November 13, 2024

From: Under Secretary for Health (10)

Subj: Office of Inspector General (OIG) Draft Report, VHA Policy and Practice Support Age-Specific Osteoporosis Screening in Women (VIEWS 12384066)

To: Assistant Inspector General for Healthcare Inspections (54)

1. Thank you for the opportunity to review and comment on OIG's draft report on osteoporosis screening in women. The Veterans Health Administration (VHA) concurs with recommendation 1 and provides an action plan in the attachment.

2. To prevent Osteoporosis, a risk for fall related fractures, VA has focused on increasing bone density screening and treatment through provider education, electronic medical record tools to identify Veterans eligible for screening and Veteran-facing education, including a campaign on healthy aging and staying active.

3. The Office of Women's Health is also developing an informatics tool, the Women's Health Interactive Management System, with an Osteoporosis screening and tracking component that will enable providers to track patients due for screening and follow-up.

4. Comments regarding the contents of this memorandum may be directed to the GAO OIG Accountability Liaison Office at vha10oicgoalaction@va.gov.

(Original signed by:)

Shereef Elnahal M.D., MBA

[OIG comment: The OIG received the above memorandum from VHA on November 14, 2024.]

Office of the Under Secretary for Health Response

VETERANS HEALTH ADMINISTRATION (VHA)

Action Plan

OIG Draft Report, VHA Policy and Practice Support Age-Specific

Osteoporosis Screening in Women

(OIG Project Number 2021-00524-HI-1126)

Recommendation 1. The Under Secretary for Health works with the Women's Program Office to gain an understanding of barriers to osteoporosis clinical reminder use and based on results, implement action as needed.

VHA Comments: Concur

The Office of Women's Health (OWH) will pull data to identify the facilities that have not activated the Osteoporosis clinical reminder. OWH will contact the facilities to identify critical barriers and provide targeted outreach and training. Actions deemed to be feasible will be implemented as appropriate, with support of OWH, to the identified facilities.

Status: In progress

Target Completion Date: October 2025

Appendix B: List of CPT Codes for BMD Testing

The following table provides CPT codes and descriptions from Centers for Medicare and Medicaid Services, Billing and Coding: Bone Mass Measurement.²³ The descriptions are reproduced verbatim.

Table B.1. List of CPT Codes for BMD Testing

CPT	Description
77078	Computed tomography, bone-mineral density study, 1 or more sites, axial skeleton (e.g., hips, pelvis, spine)
77080	DXA, bone density study, 1 or more sites; axial skeleton (e.g., hips, pelvis, spine)
77081	DXA, bone density study, 1 or more sites; appendicular skeleton (peripheral) (e.g., radius, wrist, heel)
77085	DXA, bone density study, 1 or more sites; axial skeleton (e.g., hips, pelvis, spine), including vertebral fracture assessment
78351	Bone density (bone mineral content) study, 1 or more sites; dual photon absorptiometry, one or more sites
78350	Bone density (bone mineral content) study, 1 or more sites; single photon absorptiometry
76977	Ultrasound bone density measurement and interpretation, peripheral site(s), any method
0554T	Bone strength and fracture risk using finite element analysis of functional data, and bone-mineral density, utilizing data from a computed tomography scan; retrieval and transmission of the scan data, assessment of bone strength and fracture risk and bone-mineral density, interpretation and report
0555T	Bone strength and fracture risk using finite element analysis of functional data, and bone-mineral density, utilizing data from a computed tomography scan; retrieval and transmission of the scan data
0556T	Bone strength and fracture risk using finite element analysis of functional data, and bone-mineral density, utilizing data from a computed tomography scan; assessment of bone strength and fracture risk and bone-mineral density
0557T	Bone strength and fracture risk using finite element analysis of functional data, and bone-mineral density, utilizing data from a computed tomography scan; interpretation and report

Source: OIG analysis of CPT codes from Centers for Medicare and Medicaid Services.

²³ “Billing and Coding: Bone Mass Measurement,” Centers for Medicare & Medicaid Services, accessed July 24, 2024, <https://www.cms.gov/medicare-coverage-database/view/article.aspx?articleid=57132&ver=13&>.

Glossary

- *To go back, press “alt” and “left arrow” keys.*

bone mineral density. An evaluation of mineral amounts (mostly calcium and phosphorus) a particular volume of bone contains (also referred to as bone mass and bone density).²⁴

clinical reminder. Automated support tool used in clinical practice to prompt clinicians to take evidence-based actions for selected conditions and used by VA clinicians to focus on preventative health care and manage chronic conditions to ensure timely interventions are initiated.²⁵

computed tomography absorptiometry. An evaluation of bone strength using computed tomography machine x-ray technology, at either central or peripheral skeletal sites, to assess for fracture risk. This test is associated with greater amounts of radiation exposure than DXA.²⁶

COVID-19. Virus from a family of viruses that can cause illnesses and known as severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2).²⁷

Current Procedural Terminology codes. Standardized codes used in healthcare assigned to each evaluation, test, procedure, surgery, or other service performed for patients.

fractures. The medical term used for broken bones. A fracture can be a complete or partial break in the bone.²⁸

osteopenia. A decrease of BMD indicating a person has less minerals in the bones than expected, making the bones weak. This decrease in BMD is not as severe as that seen in osteoporosis.²⁹

pandemic. “[A]n outbreak of a disease that occurs over a wide geographic area (such as multiple countries or continents) and typically affects a significant proportion of the population.”³⁰

²⁴ National Cancer Institute, “bone mineral density,” accessed August 2, 2023, <https://www.cancer.gov/search/results?swKeyword=bone+mineral+density>.

²⁵ VA, *Clinical Reminders Manager’s Manual*, March 2005 [revised September 2022].

²⁶ F. Cosman, et. al, “Clinician’s Guide to Prevention and Treatment of Osteoporosis,” *Osteoporosis International* 25 (August 15, 2014): 2359–2381, accessed March 23, 2021, <https://doi.org/10.1007/s00198-014-2794-2>.

²⁷ Mayo Clinic, “coronavirus disease 2019 (COVID-19),” accessed June 11, 2024, <https://www.mayoclinic.org/diseases-conditions/coronavirus/symptoms-causes/syc-20479963>.

²⁸ Cleveland Clinic, “Bone Fractures,” accessed August 2, 2023, <https://my.clevelandclinic.org/health/diseases/15241-bone-fractures>; Johns Hopkins Medicine, “Fractures,” accessed August 2, 2023, <https://www.hopkinsmedicine.org/health/conditions-and-diseases/fractures>.

²⁹ Cleveland Clinic, “Osteopenia,” accessed August 2, 2023, <https://my.clevelandclinic.org/health/diseases/21855-osteopenia>.

³⁰ Merriam-Webster.com Dictionary, “pandemic,” accessed June 11, 2024, <https://www.merriam-webster.com/dictionary/pandemic>.

peripheral dual-energy x-ray absorptiometry. An evaluation using “trivial” radiation exposure to measure BMD at the forearm and heel to assess for fracture risk.³¹

premature menopause. A condition where a woman goes through menopause before age 40.³²

quantitative ultrasound densitometry. A procedure using sound waves and/or attenuation of ultrasound waves at peripheral skeletal sites (such as the heel, shin bone, or kneecap) to assess fracture risk.³³

³¹ F. Cosman, et. al, “Clinician’s Guide to Prevention and Treatment of Osteoporosis.”

³² Cleveland Clinic, “Premature and Early Menopause,” accessed August 2, 2023, <https://my.clevelandclinic.org/health/diseases/21138-premature-and-early-menopause>.

³³ F. Cosman, et. al, “Clinician’s Guide to Prevention and Treatment of Osteoporosis.”

OIG Contact and Staff Acknowledgments

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