

Trends and disparities in osteoporosis screening and treatment following hip fracture among women 50+ in the U.S.

Evidence and practice landscape



Osteoporosis is a leading cause of disability and loss of independence among older Americans, yet often goes unrecognized and untreated.

Given that osteoporosis is preventable and treatable with lifestyle changes and drug therapies, the United States Preventive Services Task Force (USPSTF) recommends osteoporosis screening in women age 65+ and in younger women whose fracture risk is equal to or greater than that of a 65-year-old woman. Studies suggest that this preventive screening may not always occur.

Half of all postmenopausal women are estimated to suffer an osteoporotic fracture during their lifetime and roughly 15% of them will fracture a hip. Hip fracture events are important secondary opportunities to identify and treat osteoporosis in order to prevent additional fractures.

Evidence-based clinical guidelines – such as those from the American Academy of Orthopaedic Surgeons (AAOS) and the American Association of Clinical Endocrinologists (AACE) – recommend bone mass

measurement and/or initiation of osteoporosis pharmacotherapies following hip fracture. The National Committee for Quality Assurance (NCQA) HEDIS measure tracks utilization of bone mass measurement and/or initiation of osteoporosis pharmacotherapy among women within six months of hip fracture as a performance indicator. Further, the AACE recommends pharmacologic treatment for all patients who have a history of hip fracture. Yet, prior studies have found most women are not assessed or treated for osteoporosis following hip fracture and remain at unnecessarily high risk for subsequent fracture.

Few studies have looked at contemporary trends in osteoporosis health care utilization or have considered patient-level predictors of these services other than age.

A pair of researchers from the AARP Public Policy Institute and OptumLabs studied patterns of osteoporosis screening and initiation of pharmacotherapy following a hip fracture from 2008-2014, based on medical and pharmacy claims of 8349 privately insured women aged 50+ in the U.S..¹

Key insights

- Fewer than 1 in 5 women 50+ receive timely recommended osteoporosis screening and/or treatment after a hip fracture.
- Hip fractures disproportionately occur among women aged 80+, yet this group is least likely to receive the recommended care to prevent subsequent fractures.
- Primary care utilization within the 6 month period following fracture is the strongest and most consistent predictor of recommended post-fracture services.

Translation thinking

“Our finding that fewer than one in five women receives recommended osteoporosis care in a timely manner after breaking a hip is alarming. We can do better to minimize these missed opportunities to identify and treat the underlying disease. Doing so could prevent future fractures, reduce medical costs, and improve the quality of life of aging Americans suffering from osteoporosis.”

Study PI Catherine Gillespie, PhD, MPH, AARP

Stakeholder opportunities include:

- **Providers** should promote these guidelines in practice. Specialists treating a woman with a fracture should recommend follow-up within 6 months to ensure timely osteoporosis screening and/or treatment.
- **Patients** who experience a hip fracture should advocate for osteoporosis screening and drug treatment to prevent future fractures.
- **Policymakers** can help disrupt consumer expectations about aging – such as reducing the belief that “hip fracture is just an inevitable possibility that comes with getting old” – by better connecting guidelines with personal risk.

Project mechanics

Objective

- Assess trends in utilization of osteoporosis related health services (bone mass measurement and/or pharmacotherapy) within 6 and 12 months following hip fracture among privately-insured women 50+.

Study population

- 8349 women, 50+, enrolled in private commercial or Medicare Advantage plans, with medical and prescription drug coverage, no prior history of osteoporosis diagnosis, osteoporosis pharmacotherapy, or hip fracture and experienced a hip fracture 2008-2013.

Methods

- Used medical and pharmacy claims to define use of bone mass measurement and osteoporosis pharmacotherapy (alone or in combination) during the 6 and 12 months following first hip fracture.
- Calculated estimates of utilization overall and by patient characteristics.
- Used multivariable logistic regression models including main effects for all measured characteristics to identify the subset of patient-level predictors independently associated with receipt of guideline-recommended care.
- Evaluated differences in secular trends by age by including interaction terms between year and age group in the fully-adjusted model, and plotted adjusted probabilities of utilization over time by age and service type (bone mass measurement, drug initiation, or both).

Results

Few women 50+ received one or both recommended post-fracture services for the identification and secondary prevention of osteoporosis.

- 17.1% within 6 months and 23.1% within 12 months – see Figure 1.

Utilization varied significantly by age.

- Women 80+ were one-third less likely than those aged 50-79 years to utilize one or both recommended osteoporosis related services within 6 months of their fracture (13.8% versus 20.8%, $p < 0.001$) – see Figure 1.
- Utilization of bone mass measurement increased significantly among women ages 65+ over the study period ($p < 0.001$) while declining among those ages 50-64 ($p = 0.2$).
- In contrast, rates of osteoporosis pharmacotherapy remained steady among women 50-64 ($p = 0.8$) yet declined among women ages 65-79 and 80+ ($p = 0.07$ and $p = 0.004$, respectively).

Receipt of primary care during the 6 months following fracture was the only patient factor independently associated with higher utilization in all age groups.

- Of the women who received timely osteoporosis services, 18.7% had received primary care vs. 11.6% had not received primary care ($p < 0.001$).

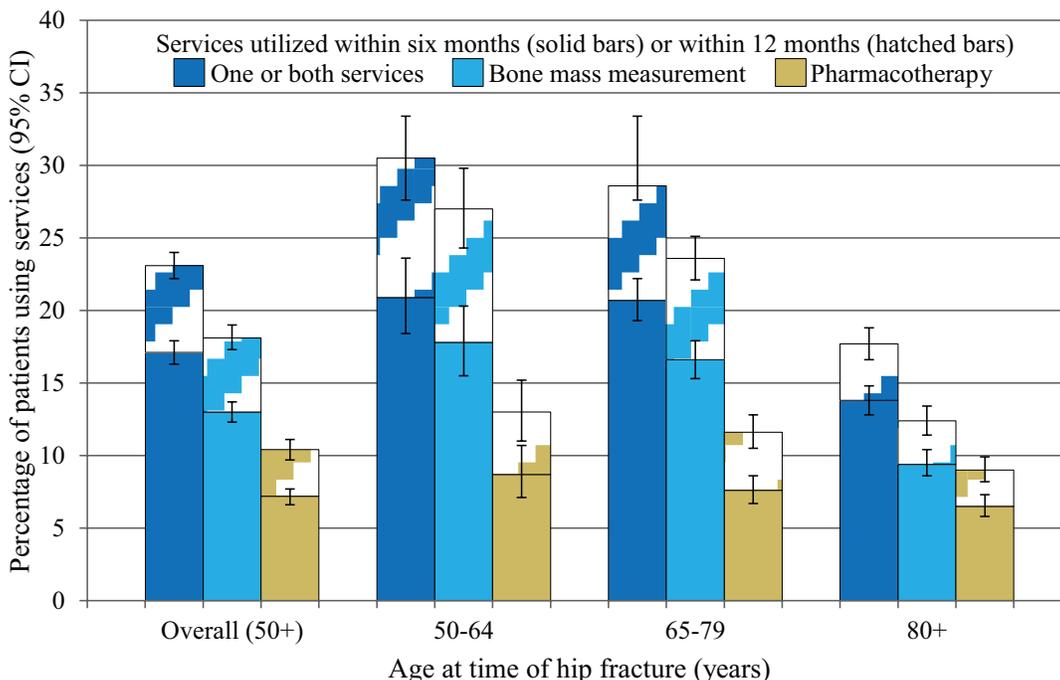


Figure 1. Unadjusted rates of bone mass measurement and initiation of pharmacologic therapies for secondary prevention of osteoporosis within 6 months (solid bars) or 12 months (hatched bars) following a hip fracture among women enrolled in private commercial or Medicare Advantage plans, 2008–2014.

Driving discovery

Members on the research team include:

- Catherine Gillespie, PhD, MPH, AARP
- Pamela Morin, MBA, OptumLabs



AARP, a nonprofit, nonpartisan organization with a membership of more than 37 million. AARP helps turn their goals and dreams into real possibilities; strengthens communities; and fights for the issues that matter most to families, such as health care, employment and income security, retirement planning, affordable utilities and protection from financial abuse. For more information, visit <http://www.aarp.org>.

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Concepts to know

Osteoporosis – a disease that causes bones to become weak and brittle overtime, and can often result in fractures and broken bones.²

Study limitations

- Although claims were drawn from a nationwide sample, this study does not include uninsured, Medicaid, or Medicare fee-for-service populations.
- Medical and pharmacy claims reflect only procedures performed and prescriptions filled, rather than referrals made and prescriptions written, and therefore cannot distinguish between patient and provider noncompliance with clinical guideline recommendations.
- While osteoporosis assessment via bone mass measurement and osteoporosis treatment via pharmacotherapy are important elements of post-fracture management, these services are insufficient without other interventions that were not assessed, including: calcium and vitamin D supplementation, exercise counseling, fall prevention counseling, and home modification.
- The study cohort included only those women who survived for a minimum of 1 year post fracture. While this is arguably the group who would be most likely to benefit from osteoporosis assessment and treatment following fracture, indicators of post-fracture health status were not assessed, and it is possible that some women in the cohort may not have been good candidates for further clinical intervention.

Sources

1. Gillespie CW, Morin PE. [Osteoporosis-Related Health Services Utilization Following First Hip Fracture Among a Cohort of Privately-Insured Women in the United States, 2008–2014: An Observational Study](#). *J Bone Miner Res*. 2017 Feb 23. [Epub ahead of print]
2. Mayo Clinic. Patient Care & Health Information website <http://www.mayoclinic.org/diseases-conditions/osteoporosis/home/ovc-20207808>. Updated July 6, 2016. Accessed January 2017.

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