

## Spotlight

# Few Hip Fracture Patients Receive Osteoporosis Care

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### Background: Osteoporosis and the Current State of Play

Maintaining independence is a topic at the forefront of the aging field—and on the minds of millions of aging Americans. Yet, few are taking the appropriate actions to address a common culprit of disability and loss of independence. This analysis of national health insurance claims by the AARP Public Policy Institute highlights the importance of providing older women who have suffered hip fractures with recommended post-fracture care, including screening for underlying osteoporosis and initiating use of evidence-based osteoporosis drug therapies, if appropriate. **Failure to adhere to these recommendations may increase the likelihood of a second hip fracture, particularly among women ages 80 and older.**

Osteoporosis—a bone disease that increases bone fragility and risk for fractures—is a leading cause of disability and loss of independence among older women. In the United States, more than 5.8 million women ages 50 and older have osteoporosis,<sup>1</sup> a number that will only grow as our population continues to age. Osteoporosis prevalence increases markedly with age, and approximately half of all postmenopausal women will experience bone fractures due to osteoporosis during their remaining

**Surprisingly few women are evaluated or treated for osteoporosis following hip fractures. Addressing these missed opportunities might make a big difference.**

lifetimes. Hip fractures are particularly common, with often serious health implications: 10–20 percent of older adults will die in the year after a hip fracture, and just 40 percent will return to their prior level of independence.<sup>2</sup>

But there is good news. Research has clearly shown the benefits of treatment for women with osteoporosis. Based on this evidence, experts suggest that older women with hip fractures should undergo bone density testing to evaluate whether osteoporosis may have played a role, and begin using osteoporosis drugs, if appropriate.<sup>3–7</sup> Nevertheless, prior research suggests that few women are evaluated or treated for osteoporosis



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following a hip fracture, and most remain vulnerable to potentially preventable future fracture events.<sup>8-10</sup>

**PPI Research: Missed Opportunities Mean Consequences**

The AARP Public Policy Institute recently explored the potential consequences of these missed opportunities to identify and treat women with osteoporosis. Using the OptumLabs™ Data Warehouse,<sup>11</sup> a database of de-identified claims from a large national health insurance carrier, we assessed the relationship between utilization of recommended services within six months of a hip fracture and risk of fracture recurrence. Our study population included women ages 50 and older who experienced a hip fracture between 2008 and 2013. Nearly 55 percent of the study population was at least 80 years old.

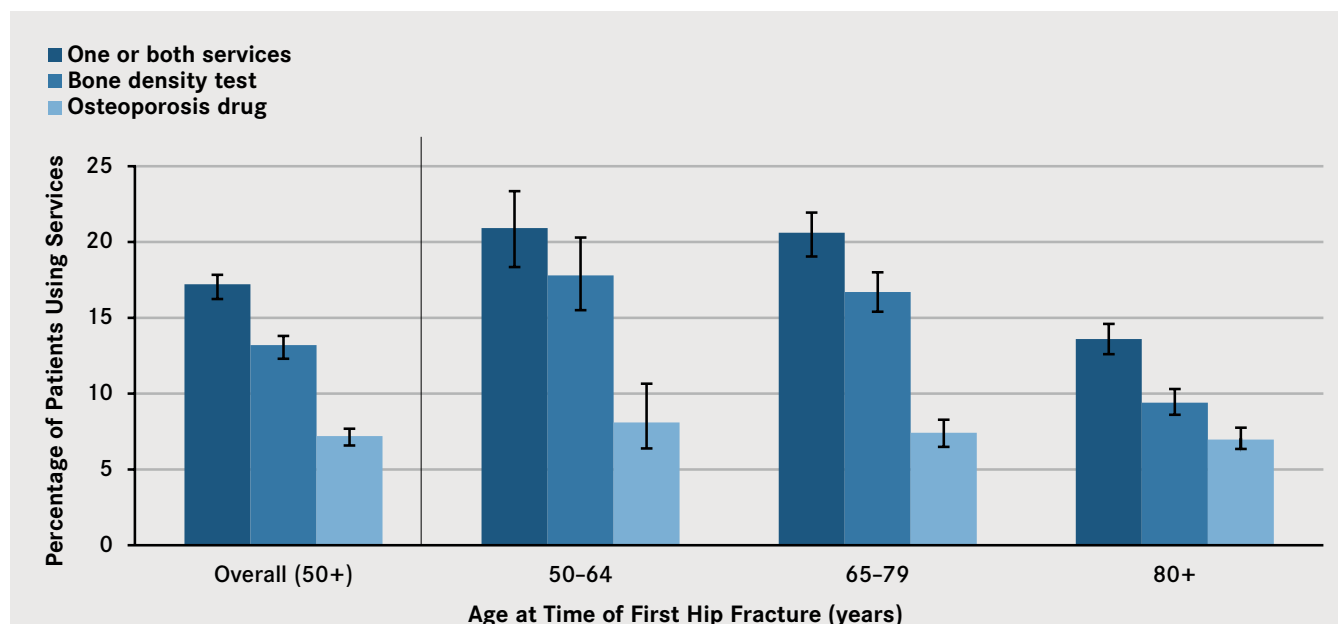
Overall, only 17 percent of women in our study utilized at least one of the recommended

osteoporosis-related health services within six months of their hip fracture: 13 percent underwent bone density testing and 7 percent started using osteoporosis drug therapy (a small percentage did both). Just 23 percent had been evaluated or treated for osteoporosis within the first year following their hip fracture.

Those numbers clearly underscore the disconnect between evidence-based guidelines for management of hip fracture patients and real-world implementation. Alarming, we found that the oldest women in our study, those at greatest risk for osteoporotic fracture, were least likely to utilize the recommended services. We estimated that women ages 80 and older were 34 percent less likely than those ages 50-79 to have received either one of the recommended services in a timely manner (Figure 1).

The one exception to this finding was among the relatively small number of non-Hispanic

**FIGURE 1**  
**Fewer than 20 Percent of Women Utilize Recommended Osteoporosis-Related Services within 6 Months of First Hip Fracture**



Source: AARP Public Policy Institute analysis of data from the OptumLabs Data Warehouse

The vertical lines represent 95 percent confidence intervals, a measure of precision based on our observed data, around the estimated percentages.

Asian women ages 80 and older in our study. This group was more than twice as likely to initiate osteoporosis drugs when compared with younger non-Hispanic Asian women, and when compared with women of all ages in all other racial/ethnic groups. However, considering that fewer than one in five non-Hispanic Asian women ages 80 and older initiates osteoporosis drugs within six months of her first hip fracture, it is clear that all racial/ethnic groups suffer from poor adherence to guidelines for the management of hip fracture patients.

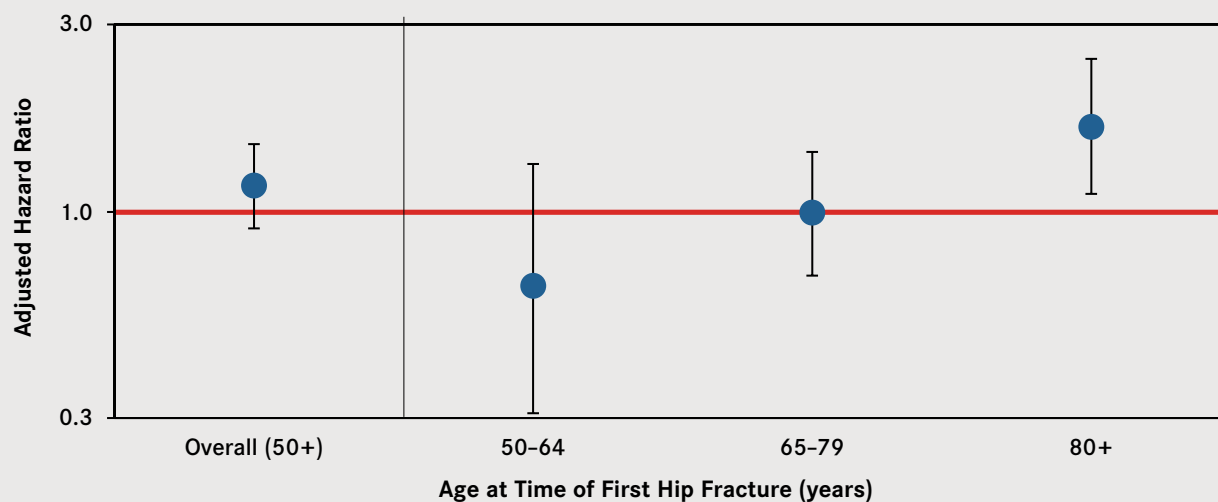
We sought to quantify the potential impact of these missed opportunities to diagnose and treat osteoporosis. To do so, we followed women for an average of 2.6 years to look for differences in risk of recurrent hip fracture among those who did and did not receive the recommended services within six months of their first fracture. Timely utilization of

recommended services did not significantly impact rates of hip fracture recurrence among treated and untreated women ages 50–79 in our study. However, women ages 80 and older who did not undergo bone density testing or begin taking osteoporosis drugs within six months of their first fracture were 62 percent more likely to experience a second hip fracture compared with those in their age group who did receive recommended services in a timely manner, even after accounting for other differences between treated and untreated women (Figure 2).<sup>12</sup>

**Conclusion: Women 80+ Need Post-fracture Services Most**

This finding could have important implications. It is well known that osteoporotic fracture risk increases markedly with age. The results of our analysis suggest that women ages 80 and older are the least likely to utilize recommended health services following a hip fracture, yet the consequences of

**FIGURE 2**  
**Women 80 Years and Older Who Do Not Utilize Recommended Services Have a Significantly Greater Risk of a Second Hip Fracture Compared with Those Who Do Utilize Recommended Services<sup>13</sup>**



Source: AARP Public Policy Institute analysis of data from the OptumLabs Data Warehouse

The vertical lines represent 95 percent confidence intervals, a measure of precision based on our observed data, around the estimated hazard ratios. A hazard ratio is used to compare the incidence rates of second hip fractures between two groups. A hazard ratio of 1 would indicate that the rate of second hip fractures is the same in both groups.

The graphic shows that among women ages 80 and older, the adjusted hazard ratio (and 95 percent confidence interval) are greater than 1. That indicates a statistically significantly greater risk of a second hip fracture for women in this age group who did not utilize recommended services after a first hip fracture, compared with those who did utilize such services.

under-treatment in this age group are even more pronounced than for younger women. Thus, much work remains to increase appropriate utilization of these recommended services. In an upcoming study, we will identify predictors of and barriers to utilization, especially among women ages 80 and older. That work will help inform efforts to improve outcomes, especially within the age segment most susceptible to this life-altering condition.

- 1 AARP Public Policy Institute estimate based on the age-adjusted prevalence of osteoporosis in 2005–06 derived from physical examinations of women ages 50 and older conducted as part of the National Health and Nutrition Examination Study (NHANES) (11 percent) and the size of the 2010 population of women ages 50 and older living in the United States based on the data from the US Census Bureau (53,151,456). Osteoporosis prevalence estimates were previously reported in Anne C. Looker, L. Joseph Melton, Tamara B. Harris, Lori G. Borrud, and John A. Shepherd, “Prevalence and Trends in Low Femur Bone Density among Older US Adults: NHANES 2005–2006 Compared with NHANES III,” *Journal of Bone and Mineral Research* 25 (2010): 64–71. Population counts based on the US Census were extracted from Lindsay M. Howden and Julie E. Meyer, *Age and Sex Composition: 2010* (Washington, DC: US Census Bureau, 2011). Available at: <http://www.census.gov/prod/cen2010/briefs/c2010br-03.pdf> (Accessed July 13, 2016).
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- 11 Note that findings apply to the health insurance carrier's enrolled population and are not necessarily representative of the US population.
- 12 In our model, we accounted for potential differences between treated and untreated women with respect to the following factors: calendar year, age at first fracture, race/ethnicity, estimated net worth, census region, chronic comorbidity count, history of prior bone mass measurement, and utilization of primary care within 6 months of the first fracture.
- 13 Adjusted hazard ratios greater than 1 indicate that risk of second hip fracture is greater for women who did not utilize either one of the recommended services within 6 months of the first fracture, compared with age-similar women who did utilize one or both of the recommended services in a timely manner. A hazard ratio of 1.6 can be interpreted as a 60 percent increase in risk. The 95 percent confidence interval is shown to indicate the level of uncertainty around the estimated hazard ratios. Confidence intervals that cross 1 imply that there is no detectable difference in risk of second fracture comparing women who did not utilize services to those who did.

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AARP's Public Policy Institute conducted this study using the OptumLabs Data Warehouse. The retrospective administrative claims data utilized in this study include medical claims and eligibility information from a large national U.S. health insurance plan. Individuals covered by this health plan, about 28.2 million (51 percent female) in 2013, are geographically diverse across the United States, with greatest representation in the South and Midwest U.S. Census regions. The health insurance plan provides fully insured coverage for professional (e.g., physician), facility (e.g., hospital), and outpatient prescription medication services. All study data were accessed using techniques that are in compliance with the Health Insurance Portability and Accountability Act (HIPAA) of 1996, and no identifiable protected health information was extracted during the course of the study.