



## **KEY NOF TAKEAWAYS AND RECOMMENDATIONS** **From Millman 2021 Medicare Costs of Osteoporotic Fractures Reports**

### **OSTEOPOROSIS EXACTS A HUGE HUMAN AND ECONOMIC TOLL**

The March 2021 [Milliman analysis](#) commissioned by the National Osteoporosis Foundation (NOF) reveals that about 1.8 million Medicare beneficiaries suffered approximately 2.1 million osteoporotic fractures in 2016. The report shows that for those within the Medicare fee-for-service (FFS) system who suffered an osteoporotic fracture:

- Over 40% were hospitalized within one week after the fracture across all types of fractures studied. Of those with a hip fracture, **over 90%** were hospitalized within a week.
- They suffered additional subsequent fractures within a year at **over three times the annual rate** of new osteoporotic fractures for all Medicare FFS beneficiaries.
- They had **twice the annual rate** of new pressure ulcers as the total Medicare FFS population, after adjusting for age and sex. Approximately 20% of Medicare FFS beneficiaries who suffered a new osteoporotic fracture developed at least one pressure ulcer up to three years after the initial fracture. Other studies found that pressure ulcers are a debilitating physical complication that also increases health care costs for pressure ulcer-related prevention and treatment.
- Over the course of a post-fracture episode of care that lasted up to three years, over 4% or approximately 56,800 Medicare FFS beneficiaries, became eligible for Medicaid.
- About 41,900 Medicare FFS beneficiaries became institutionalized in nursing homes within three years following the new osteoporotic fracture as they required the custodial care provided in a nursing home.
- About 245,000 Medicare FFS beneficiaries (154,00 women and 91,000 men) or 19% of those with a new osteoporotic fracture died within 12 months, which was over **three times greater** than the average age- and sex-adjusted annual mortality rate among all Medicare FFS beneficiaries. Those with a hip fracture had the highest mortality; 30% died within 12 months of the fracture.

- Annual allowed medical costs to Medicare for beneficiaries in the 12-month period beginning with the new osteoporotic fracture were more than **twice their costs** in the year prior to their fracture, with incremental annual allowed medical costs for those with an osteoporotic fracture of \$21,564 per beneficiary covered by both Medicare Parts A and B in 2016. That estimated annual cost is even greater, over \$30,000, for those who suffer a subsequent fracture up to three years after the initial fracture.
- The incremental annual medical costs in the year following a new osteoporotic fracture **increased 263%** for skilled nursing facility (SNF) services compared to the year prior to the fracture, accounting for nearly 30% of the total incremental annual medical cost.
- The total estimated allowed medical cost in the six-month period following subsequent fractures that were suffered up to three years following an initial fracture in 2016 accounted for \$5.7 billion among 290,000 Medicare FFS beneficiaries. Actual total costs may be even higher as these estimates do not include costs related to the loss of productivity, absenteeism, non-skilled home and nursing home care, or pharmaceutical drugs.
- ***Preventing between 5% and 20% of these subsequent fractures could have saved between \$272 million and \$1.1 billion for the Medicare FFS program during a follow-up period that lasted up to three years after a new osteoporotic fracture in 2016.***

## **THE INCIDENCE, COSTS AND DEATHS FROM OSTEOPOROTIC FRACTURES VARIES SUBSTANTIALLY ACROSS THE STATES**

NOF commissioned Milliman to compile [individual state-specific reports](#) that are also being released today. This set of reports provides the most up-to-date and comprehensive analysis of the impact of osteoporotic fractures on Medicare FFS beneficiaries for each of the 50 states. These reports reveal variation by state in the incidence of new osteoporotic fractures and the expense of providing care following those fractures, including the cost of subsequent fractures.

**Osteoporotic Fracture Rates.** The rate of osteoporotic fractures among Medicare FFS beneficiaries in the 50 states ranged from a low of 318.7 per 10,000 in Hawaii (24% lower than national average of 416.9) to highs of 472.2 per 10,000 in Kentucky and 468.5 per 10,000 in Florida (13% and 12% higher than national average, respectively) after adjusting for differences in age and sex. Rates of hip fractures varied from a low of 52.2 per 10,000 in Hawaii to a high in Connecticut of 85.4 per 10,000. Rates of spine fractures ranged from 77.4 per 10,000 in Alaska to 126.2 per 10,000 in Florida. The report suggests that further research may be needed to understand the geographic variation of fracture incidence and care. Rates by state can be found

in Appendix C-3 in the Report Supplement and more detailed information for each state can be found in [individual state reports](#).

**Subsequent Fractures Rates.** While nationally 14% of Medicare FFS beneficiaries who suffered a new osteoporotic fracture had a subsequent fracture either of the same body part (a “refracture”) or of a different body part (a “new fracture”) within a three-year follow-up period, this figure varied from 11% to 16% by state. Beneficiaries in Florida, California and Texas were most likely to suffer a subsequent fracture (16% of Medicare FFS beneficiaries had a subsequent fracture within 12 months) while those in Nebraska and North Dakota were least likely to suffer a subsequent fracture (11%).

**Direct Medical Costs.** While the national average estimated 180-day incremental cost of a subsequent fracture was about \$20,400, this varied significantly among states from about \$17,000 in Arkansas to \$26,200 in Wyoming. Thirty states had an incremental cost within  $\pm 10\%$  of the nationwide average. The report suggests that the drivers of cost variation by state may include differences in population morbidity, unit cost, and demographics by state.

**Mortality Rates.** The report also found variation in the percentage of beneficiaries who died within 12 months of suffering a new osteoporotic fracture. While nationally 19% of Medicare FFS beneficiaries with a new osteoporotic fracture in 2016 died within a year, some states had much lower rates and some higher. Beneficiaries in Rhode Island, Michigan and Ohio had the highest mortality rate (21%) while those in Hawaii and Alaska died at much lower rates (14%). The report suggests that differences in annual mortality may be due to differences in fracture type incidence (i.e., more severe fracture types may lead to higher mortality) or demographics, as well as differences in healthcare delivery.

## **THERE ARE SUBSTANTIAL RACIAL/ETHNIC DISPARITIES IN FRACTURE INCIDENCE, CARE AND DEATHS**

**Osteoporotic Fracture Rates.** The report found that “fracture rates varied substantially by race/ethnicity.” After adjusting for differences in age and sex, the analysis shows that Medicare FFS beneficiaries who were North American Natives suffered fractures at a rate 20% higher than the national average. White beneficiaries had a fracture rate 6% higher than the national average. Black beneficiaries (50% lower), Asian beneficiaries (32% lower) and Hispanic beneficiaries (19% lower) had the lowest rates of new osteoporotic fractures. Rates of subsequent fractures within 12 months following an initial osteoporotic fracture ranged from 11% of Black beneficiaries to 15% for White beneficiaries. Hispanic, Asian, and North American Native beneficiaries all suffered subsequent fractures within 12 months at the national average

rate of 14%. The report also found a disproportionately high share of new osteoporotic fractures of the tibia/fibula among Black Medicare FFS beneficiaries, while Asian beneficiaries had lower incidence of tibia/fibula fractures as a share of total fractures than the nationwide average. Fractures of the spine were less common for Black and North American Native beneficiaries compared to nationwide average but were more common for Asian beneficiaries. The report notes that variation in osteoporotic fracture incidence by type of fracture may lead to differences in post-fracture events and healthcare costs among race/ethnicity groups.

**Black Beneficiary Disparities.** While suffering fewer initial fractures and subsequent fractures, Black Medicare FFS beneficiaries have higher hospitalization rates, higher death rates following fractures, and lower bone mineral density (BMD) screening rates. Of those Black beneficiaries who suffered an osteoporotic fracture in 2016, 45% were hospitalized within 7 days of the fracture, compared to a national average of 42%. Twenty-two percent of Black beneficiaries died within 12 months of an initial osteoporotic fracture, exceeding the national average rate of 19% and comparable rates for White (19%), Asian (16%), Hispanic (18%) and North American Native beneficiaries (18%). Medicare FFS beneficiaries who were Black were least likely to receive screening for osteoporosis with a BMD test following a new osteoporotic fracture; only 5% of Black Medicare FFS beneficiaries were tested within six months of a new osteoporotic fracture – when the need for treatment and action is highest – versus 8% among all beneficiaries with a fracture. Screening rates for North American Native (6%) and Hispanic beneficiaries (7%) were also below the national average, while rates for Asian (9%) and White beneficiaries (8%) were respectively above and at the national average. Other studies have reported racial disparities in fracture incidence and post-fracture outcomes, particularly higher rates of mortality, debility, and destitution following a fracture among black women than among White women.

### **THOSE WHO SUFFER FRACTURES OFTEN ALSO HAVE DIABETES, COPD, HEART DISEASE AND OTHER CHALLENGING CHRONIC CONDITIONS**

The report finds high rates of other major chronic conditions among those Medicare FFS beneficiaries who suffer osteoporotic fractures. Almost 27% of those who had a new osteoporotic fracture in 2016 were also identified with diabetes (without complications); 24% also had vascular disease; 23% had diagnosed heart arrhythmias; and 21% had chronic obstructive pulmonary disease (COPD). A list of the top ten most prevalent other conditions for those who suffered a new osteoporotic fracture in 2016 can be found in Appendix C-2 of the [Report Supplement](#).

## KEY POLICY RECOMMENDATIONS FROM THE NATIONAL OSTEOPOROSIS FOUNDATION (NOF)

Fortunately, we have the tools to substantially reduce the enormous burden of osteoporotic fractures identified in the Milliman report. NOF calls on the Biden Administration and Congress to take the following simple steps to better incentivize their use.

- Leading health systems like Geisinger and Kaiser Permanente have successfully reduced repeat fractures and lowered costs by employing a new model of coordinated care known as fracture liaison services (FLS). But most of those with fractures go without this cost-effective help because Medicare doesn't incentivize its use. **Therefore, Congress and CMS should make changes to Medicare payments to incentivize widespread use of model secondary fracture prevention/care coordination practices for beneficiaries who have suffered an osteoporosis-related fracture and are thus at risk for another fracture.**
- Medicare pays for high-quality bone density testing to identify those who are at risk of bone fractures, allowing for early and effective preventive steps and interventions. However, the Milliman report found that only 9% of women who suffer a fracture are screened for osteoporosis within six months of a new fracture. Other analyses have shown that Medicare payment rates have been cut by 70% and in the last 5 years the osteoporosis diagnosis of older women has declined by 18%. **These cuts to Medicare payment rates for osteoporosis screening which have reduced access should be reversed either administratively or by legislation.**
- Medicare also pays for FDA-approved drug treatments for osteoporosis that can help reduce spine and hip fractures by up to 70% and cut subsequent fractures by about half. But about 80% go untreated, even after a fracture. **Congress should mandate and fund a national education and action initiative aimed at reducing fractures among older Americans. Key elements should include:**
  - Setting of national goals for primary and secondary prevention of osteoporosis and fractures;
  - Prioritizing reduction of racial disparities;
  - Sharing of evidence-based information about the treatment and prevention of fractures and prevention of falls; an
  - Integration of information about osteoporosis and fractures into fall prevention programs and vice versa

A copy of the full Milliman report and all 50 state reports can be found at:  
<https://www.bonehealthpolicyinstitute.org/state-reports-2021>.