Assessment of Patient Outcomes of Rehabilitative Care Provided in Inpatient Rehabilitation Facilities (IRFs) and After Discharge: Study Highlights for Hip Fracture Patients

**Background:** Hip fracture is a major public health problem in the United States. According to the Centers for Disease Control and Prevention (CDC), in 2010 there were an estimated 258,000 hospitalizations for hip fracture among persons 65 years and older.1 Approximately 24 percent of hip fracture patients in this age group do not survive beyond one year of their initial injury,2 and among survivors only 48 percent return to pre-fracture activity levels.3 Additionally, approximately 26 percent of Medicare beneficiaries who sustain a hip fracture receive postacute care (PAC) in an inpatient rehabilitation facility (IRF), and an estimated 64 percent receive PAC in a skilled nursing facility (SNF).4 Research suggests that hip fracture patients who receive care in an IRF experience superior clinical outcomes, including lower mortality,4 higher likelihood of returning home,5 greater functional improvement,5,6,7 and shorter rehabilitation lengths of stay,4,5,7 compared to SNF treated hip fracture patients.

**Key Findings:** Results from our analysis of 20,970 clinically and demographically matched SNF to IRF hip fracture patient pairs appear consistent with previous research. We observed the average length of an IRF stay for a hip fracture patient to be less than half that of the average SNF stay (13.3 vs. 32.7 days) (p < 0.0001). Following patients’ initial rehabilitation stay, our study found that compared to matched SNF discharged hip fracture patients, the IRF population experienced on average (all statistically significant at p<0.0001):

- 24.6 percent lower (8.3 percentage point difference) all-cause mortality rate over a two-year period
- 55.1 day difference in average days alive over a two-year period
- 53.1 fewer all-cause hospital readmissions per 1,000 patients per year
- 52.8 more days residing at home (i.e., without receiving facility-based care) observed over a two-year period
- Cost $9.77 more per day observed over a two-year period

**Discussion:** Our findings are consistent with the published literature on comparative effectiveness of IRF and SNF rehabilitation for hip fracture patients. Differences in regulatory and accreditation requirements for IRFs and SNFs may contribute to the superior rehabilitation outcomes observed in IRF discharged patients. For instance, IRFs, but not all SNFs, must maintain a 24-hour RN staff and provide daily physician oversight.8

The utilization of IRF services by hip fracture Medicare patients has, as a proportion of total IRF volume, steadily declined since the implementation of the 60% Rule,9 a trend that may reflect patients shifting from IRF to SNF settings.10 Policymakers are considering additional PAC payment reforms that include site-neutral reimbursement rates for IRF and SNF treated hip fracture patients.11 This policy could serve to dis incentivize IRF providers from admitting hip fracture patients, as the typical hip fracture IRF case cost more than the comparable SNF case. Our findings underscore the importance of policies that preserve, if not expand, access to IRF services for the hip fracture population.

**Difference in Mortality Rate between IRF and SNF Hip Fracture Patients Two Years after Initial Rehabilitation Stay**

**Difference in Number of Home Days* between IRF and SNF Hip Fracture Patients Over Two Years**

**Difference in All-Cause Hospital Readmissions per 1,000 Patients per Year between IRF and SNF Hip Fracture Patients**

---

8 Source: Dobson | DaVanzo analysis of research identifiable 20% sample of Medicare beneficiaries, 2005-2009