Prevalence of recognized bone metastases in the U.S. adult population

**Introduction**

- Bone is a common site of metastatic cancer, most prevalent in cancers of the breast, prostate, and lung.
- Bone metastases (BM) can cause serious skeletal complications, reducing quality of life and increasing medical costs.
- The prevalence of BM is not well documented, and understanding the burden of this disease is important given its devastating consequences.

- We estimated the prevalence of BM in the U.S. adult Medicare fee-for-service (FFS) and the MarketScan commercially insured populations for December 31, 2008.
- Age- and sex-specific prevalence estimates were multiplied by 2008 Census data to number the quantity of prevalent cases of BM in the total U.S. adult population.

**Methods**

- Two point-prevalent cohorts were assembled, according to insurance coverage on December 31, 2008:
  - Persons aged 18-64 years enrolled in a commercial plan (MarketScan database)
  - Persons aged ≥65 years enrolled in FFS Medicare (Medicare 5% sample).
- Study period: 2004-2008 to identify patients with evidence of BM.

**Results**

- We identified 9,505 MarketScan patients (18.2 million) and 6,427 FFS Medicare patients (18.620 million) with BM (Table 1).

**Conclusions**

- Approximately 280,000 U.S. adults (~0.12% of the entire adult population) were living with recognized BM on December 31, 2008, with most cases occurring in patients with primary breast, prostate, or lung cancer or in patients with multiple myeloma.

- The strength of this study is the utilization of representative samples of two large components of the U.S. adult population.

- Limitations:
  - Results may be underestimates of the true prevalence of bone metastases.
  - Not all cohort members were continuously insured from 2004-2008.
  - Not all patients with BM are diagnosed, and among those diagnosed, not all are treated with IV bisphosphonates.
  - Use of qualified IV bisphosphonate codes probably improved the sensitivity of BM ascertainment, but the validity of our claims-based algorithms should be further explored.
  - Age- and sex-specific prevalence estimates applied to 2008 U.S. Census counts were based on findings in the commercially insured and Medicare FFS populations, which may not be generalizable to the remaining U.S. adult population.

Note: Data presented as estimated number of patients with bone metastasis (95% confidence interval).