

SOCIOECONOMIC, DEMOGRAPHIC, AND HOSPITAL-LEVEL PREDICTORS OF IN-HOSPITAL MORTALITY IN MULTIPLE MYELOMA: A 2022 NATIONAL INPATIENT SAMPLE ANALYSIS



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INTRODUCTION

Multiple myeloma (MM) disproportionately affects Black Americans, with incidence and mortality rates more than double those of White Americans. Social determinants of health (SDoH) — including race, insurance status, and income — are recognized drivers of cancer outcomes, yet their independent impact on inpatient MM mortality has not been characterized using nationally representative data. This study examines patient-level socioeconomic, demographic, and hospital-level predictors of in-hospital mortality in MM.

AIM

To identify socioeconomic, demographic, and hospital-level predictors of in-hospital mortality among multiple myeloma patients using a nationally representative inpatient database, with a focus on racial and insurance-based disparities.

METHODS

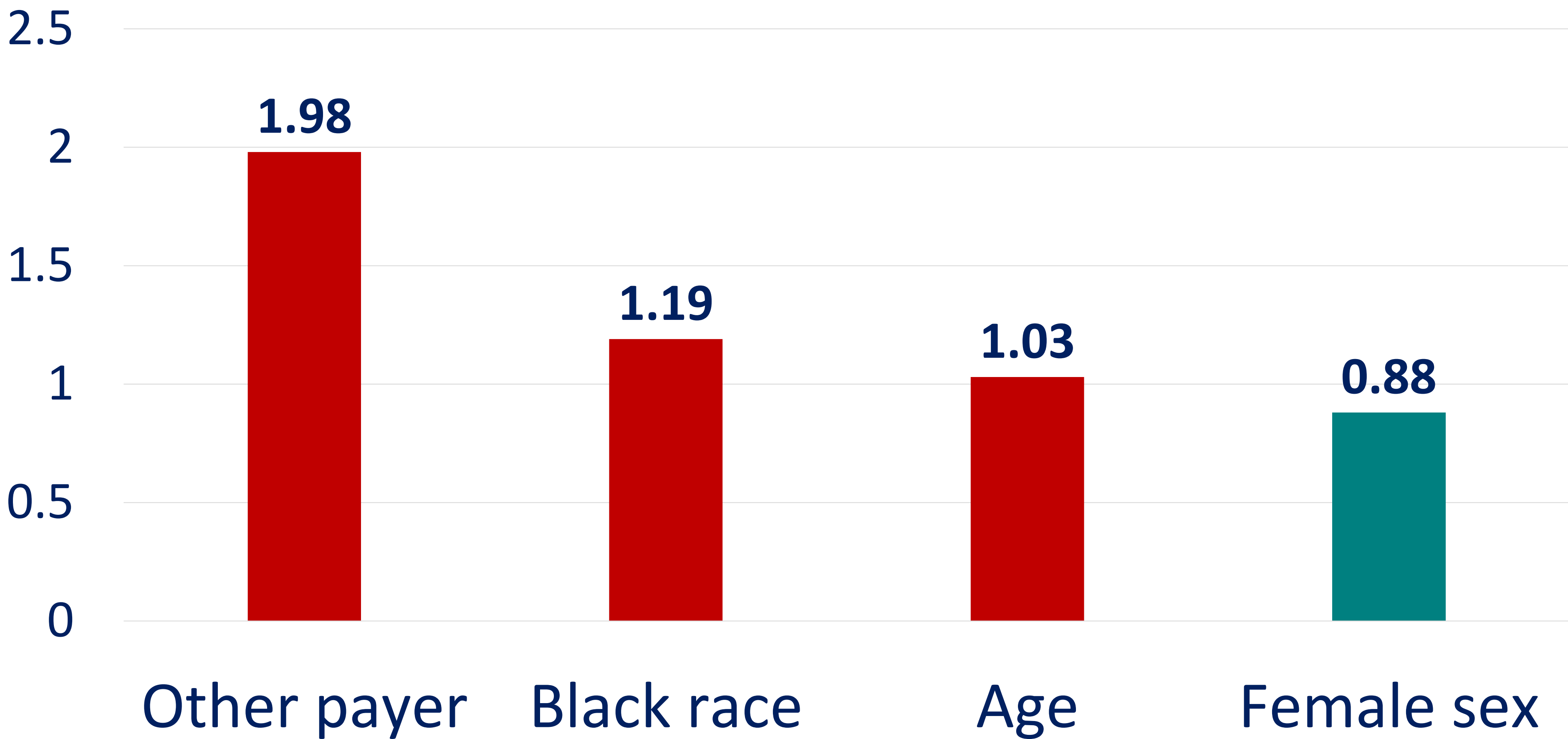
Retrospective cross-sectional analysis of the 2022 NIS. Adults (≥18 years) hospitalized with MM (ICD-10: C90.0x) were identified. Survey-weighted multivariable logistic regression estimated adjusted odds ratios (aOR) for inpatient mortality, controlling for age, sex, race/ethnicity, insurance, income, and hospital characteristics. Charlson Comorbidity Index was calculated using validated ICD-10 algorithms.

CONCLUSIONS

- ✓ Inpatient MM mortality is driven by patient-level sociodemographic factors, not institutional characteristics.
- ✓ Black patients faced 19% higher inpatient mortality versus White patients after full adjustment — consistent with systemic racial disparities in MM care.
- ✓ "Other payer" status was associated with nearly double the mortality risk, highlighting the impact of fragmented insurance coverage.
- ✓ These findings establish a national evidence base for targeted, upstream SDoH interventions in MM.

RESULTS

Predictors of In-Hospital MM Mortality by Race and Insurance Status: Adjusted OR



- 23,248 unweighted MM hospitalizations (116,230 weighted)
- Overall mortality was 5.59%. Increasing age independently predicted mortality (aOR 1.03/year; 95% CI 1.02–1.04; $p<0.001$)
- Female sex was protective (aOR 0.88; 95% CI 0.78–0.99; $p=0.030$). Black patients had significantly higher inpatient mortality versus White patients (aOR 1.19; 95% CI 1.02–1.39; $p=0.024$)
- "Other payer" status was associated with nearly double the mortality odds versus Medicare (aOR 1.98; 95% CI 1.46–2.68; $p<0.001$)
- *Hispanic, Asian/Pacific Islander, and Native American race, Medicaid, and private insurance were non-significant. ZIP-code income quartile and all hospital-level characteristics were non-significant predictors.

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