INFECTIOUS COMPLICATIONS IN HOSPITALIZED MULTIPLE MYELOMA PATIENTS: TYPE-SPECIFIC MORTALITY, BURDEN, AND RESOURCE UTILIZATION FROM THE 2022 NATIONAL INPATIENT SAMPLE

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INTRODUCTION

- Infections are the leading cause of morbidity and mortality in multiple myeloma (MM), driven by disease-related immunodeficiency and treatment-induced myelosuppression
- Up to 45% of early MM deaths are infectious in etiology.
- The expanding use of anti-CD38 monoclonal antibodies and bispecific T-cell engagers has further deepened immune compromise

AIM

To characterize the national inpatient burden, type-specific mortality, and resource utilization of infectious complications in hospitalized multiple myeloma patients using a contemporary, nationally representative database.

METHOD

Retrospective cross-sectional analysis of the 2022 National Inpatient Sample (NIS). Adults (≥18 years) hospitalized with MM (ICD-10: C90.0x) were identified. Infectious complications were categorized as sepsis, pneumonia, UTI, fungal infection, and COVID-19. Survey-weighted multivariable logistic regression estimated adjusted odds ratios (aOR) for inpatient mortality, controlling for age, sex, race/ethnicity, insurance, income, and hospital characteristics.

CONCLUSIONS

- ✓ ✓ Nearly half of MM hospitalizations carried concurrent infection, underscoring profound immune vulnerability. Sepsis conferred the greatest mortality risk
- ✓ ✓ The $34,471 incremental cost per infected admission represents a substantial national healthcare burden → need for early infection prevention strategies.
- ✓ Establishing an evidence base for infection prevention guidelines in the modern treatment era.

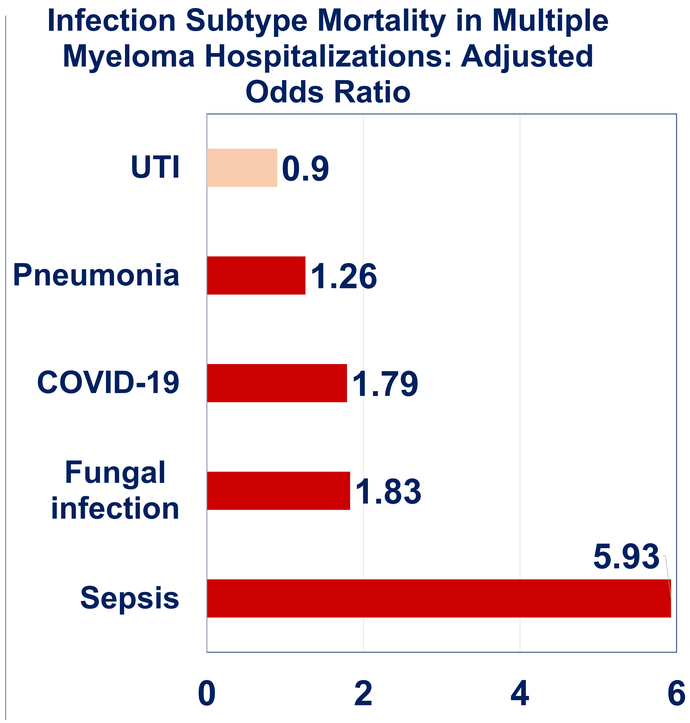
RESULTS

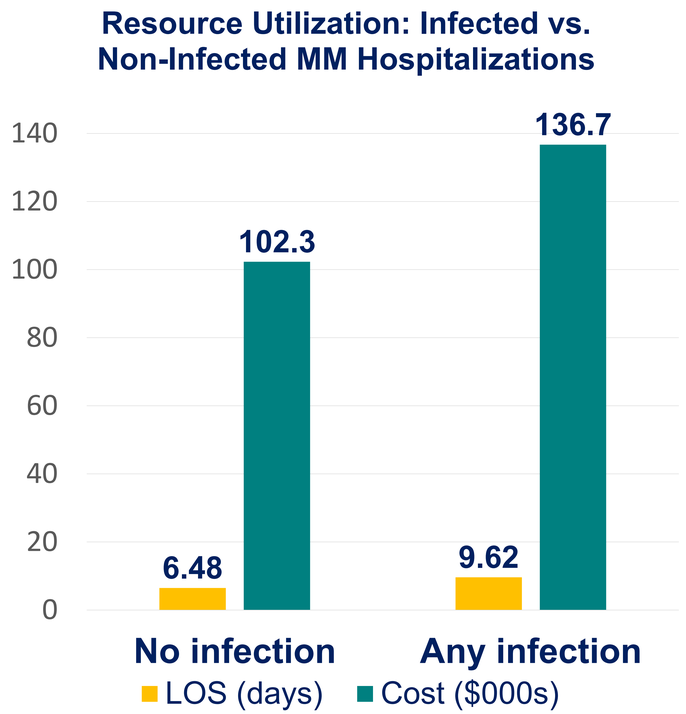
- 23,248 unweighted MM hospitalizations (116,230 weighted)
- **Infections** present in **42.7%** of admissions
- Overall mortality 5.59% — 9.17% with infection versus 2.93% without (p<0.001)
- Any infection independently associated with 3.47-fold higher mortality (aOR 3.47; 95% CI 3.06–3.93; p<0.001)

Subtype mortality hierarchy:

- Sepsis (aOR 5.93; 95% CI 5.14–6.85)
- Fungal infection (aOR 1.83; 95% CI 1.41–2.36)
- COVID-19 (aOR 1.79; 95% CI 1.51–2.12)
- Pneumonia (aOR 1.26; 95% CI 1.08–1.46; all p<0.05)
- UTI was non-significant (aOR 0.90; p=0.271)

- Infected patients had longer LOS (9.62 vs. 6.48 days) and higher charges ($136,728 vs. $102,257)





REFERENCES

Blimark C, Holmberg E, Mellqvist UH, et al. Multiple myeloma and infections: a population-based study on 9253 multiple myeloma patients. Haematologica. 2015;100(1):107-113.

Teh BW, Harrison SJ, Slavin MA, Worth LJ. Infection risk with novel agents in multiple myeloma: a systematic review and meta-analysis. Leuk Lymphoma. 2016;57(7):1473-1481.

Augustson BM, Begum G, Dunn JA, et al. Early mortality after diagnosis of multiple myeloma: analysis of patients entered onto the United Kingdom Medical Research Council trials between 1980 and 2002. J Clin Oncol. 2005;23(36):9219-9226.

Agency for Healthcare Research and Quality (AHRQ). Overview of the National Inpatient Sample (NIS) [Internet]. HCUP; 2022 [cited 2026 Aug 28]. Available from: https://hcup-us.ahrq.gov/nisoverview.jsp

Quan H, Sundararajan V, Halfon P, et al. Coding algorithms for defining comorbidities in ICD-9-CM and ICD-10 administrative data. Med Care. 2005;43(11):1130-1139.

Kumar L, Mal M, Kamran A. National trends in sepsis-specific mortality among adults in the United States with multiple myeloma, a 24-year analysis. Blood. 2025;146(Suppl 1):8130.

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