

Burden of Bloodstream Infections in the United States: Incidence and Healthcare Resource Utilization, 2022–2024

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INTRODUCTION

Bloodstream infections (BSIs) are a serious public health concern associated with significant morbidity, mortality, and healthcare burden.

OBJECTIVE

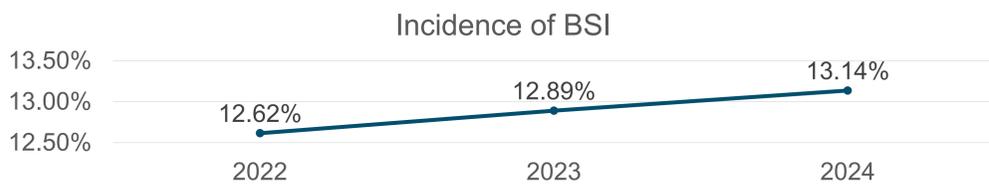
This study aimed to assess the burden of BSIs in the United States (U.S.) by estimating the incidence and healthcare resource utilization (HRU) among adult inpatients from 2022 to 2024.

METHODS

- **Study Design:** Retrospective observational study
- **Data Sources:** Premier Healthcare Database, a large, geographically diverse, hospital discharge database that accounts for 25% of all US inpatient admissions
- **Study Period:** Jan 1, 2022, through December 31, 2024.
- **Study population:**
 - Adult inpatients (aged ≥18 years)
- **Statistical analysis:**
 - Incidence of BSI was assessed overall and by baseline characteristics.
 - HRU and associated costs were described. All costs have been adjusted to 2024 U.S. dollars.
 - All analyses were conducted using R 4.3.1.

RESULTS

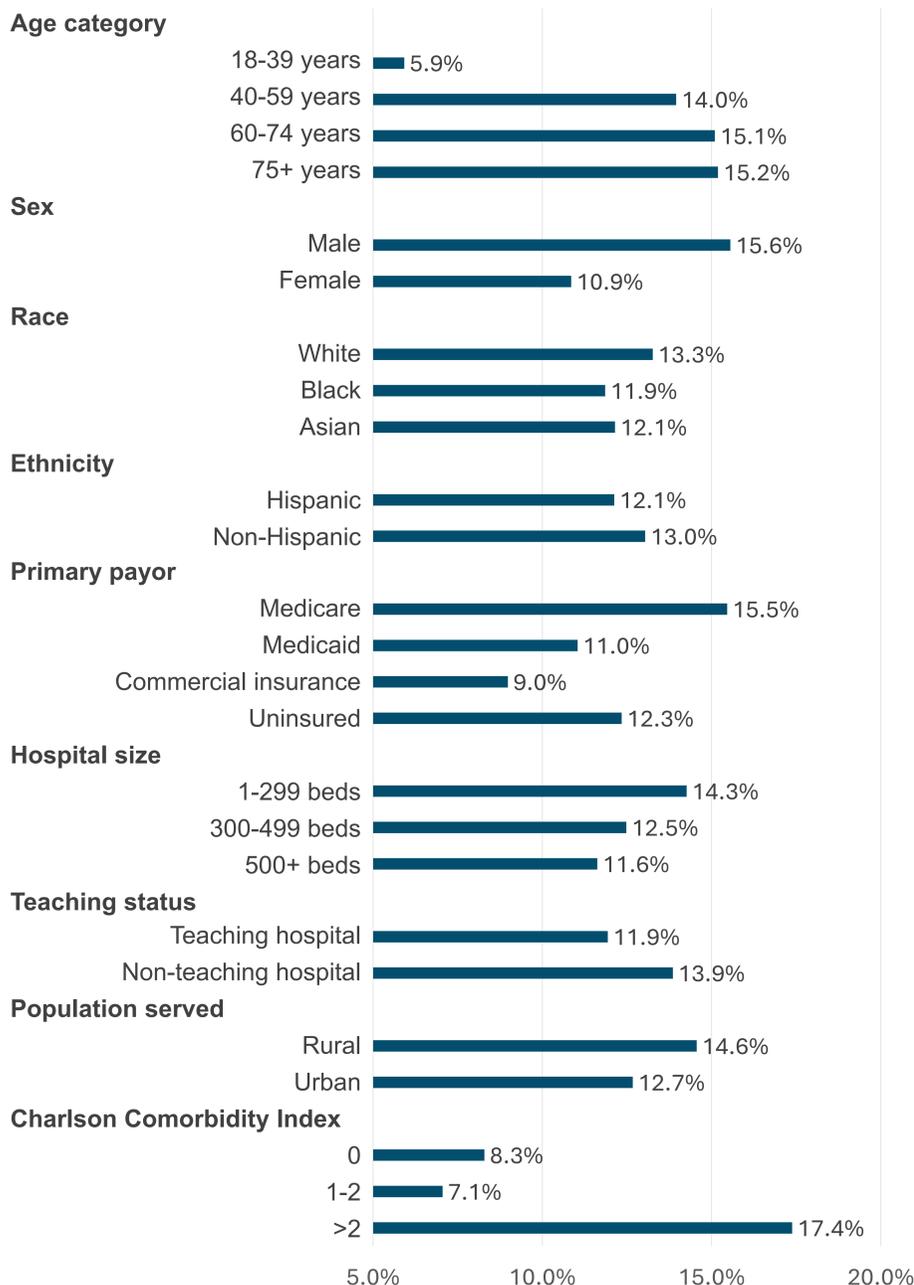
- BSI was identified in **12.86%** of all hospitalizations during the study period.
- A slight increase in incidence was observed from 2022 to 2024.



- Incidence increased with **age** and was higher among **males, Medicare beneficiaries**, and patients with a **higher Charlson Comorbidity Index**.
- Incidence rates were comparable across race and ethnicity groups.

- Among patients with BSIs, the mean hospital length of stay (LOS) was **8.9 days**, with a mean cost of **\$30,287**.
- ICU admission occurred in **30.5%** of patients, with a mean ICU LOS of **5.89 days** and a mean ICU cost of **\$35,235**. In-hospital mortality was **10.3%**
- During the 30-day post-discharge period, **14.2%** were readmitted, with a mean LOS of **9.09 days** and a mean readmission cost of **\$20,083**. Additionally, **22.7%** of patients had outpatient visits, with a mean cost of **\$2,489**. The 30-day all-cause mortality rate was **3.0%**.

Incidence of BSI by Baseline Characteristics



Costs and HRU outcomes

Results

Index hospitalization

Total LOS	8.90 (±13)
Total index cost	30,287.17 (±58,791)
Total ICU admissions, n(%)	754,615 (30.5%)
Total ICU cost of index hospitalization	35,235.09 (±66,466)
Total ICU LOS	5.89 (±9)
In-hospital mortality, n(%)	254,147 (10.3%)

30-day follow-up period

30-day all-cause readmission, n(%)	351,429 (14.2%)
30-day all-cause LOS	9.09 (±11)
30-day total cost for all-cause readmission	20,083.31 (±21,203)
Patients with 30-day all-cause outpatient visits, n(%)	562,209 (22.7%)
30-day all-cause outpatient visits	1.92 (±2)
30-day total cost for all-cause outpatient visits	2,489.32 (±6,216)
Patients with 30-day total cost, n(%)	820,175 (33.2%)
30-day total cost (in 2024 U.S. dollar)	10,550.22 (±18,123)
30-day mortality, n(%)	74,453 (3.0%)

Mean (standard deviation) unless otherwise specified; costs adjusted to 2024 U.S. dollars.

CONCLUSIONS

- BSI represents a substantial clinical and economic burden in the U.S.
- Incidence patterns highlight key disparities by age, sex, insurance type, and comorbidity level.
- BSIs are associated with substantial healthcare utilization, including prolonged hospital stays, ICU admissions, and notable post-discharge hospital resource utilization.

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