

Temporal Trends in Sepsis-Associated Mortality Among Older Adults with Chronic Kidney Disease: A CDC WONDER Analysis

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Background

- Sepsis and chronic kidney disease (CKD) are major causes of morbidity and mortality in the United States.
- Sepsis affects ~1.7 million U.S. adults annually; ~350,000 die or are discharged to hospice each year.
- CKD affects >11% of U.S. adults and increases risks of kidney failure, cardiovascular disease, and death.
- Mortality trends involving concurrent sepsis & CKD remain poorly characterized across demographic and geographic groups.

Methods



Data Source:
CDC WONDER



≥45 years



Mortality Rates (MRs)
per 100,000
AAMR = Age-Adjusted MRs
CMR = Crude MRs



Concurrent CKD (ICD-10: N18) & Sepsis (ICD-10: A40 & A41) mortality
Stratified by: age, sex, race, states, regions, urbanization status, place of death, & ICD-10 subcodes



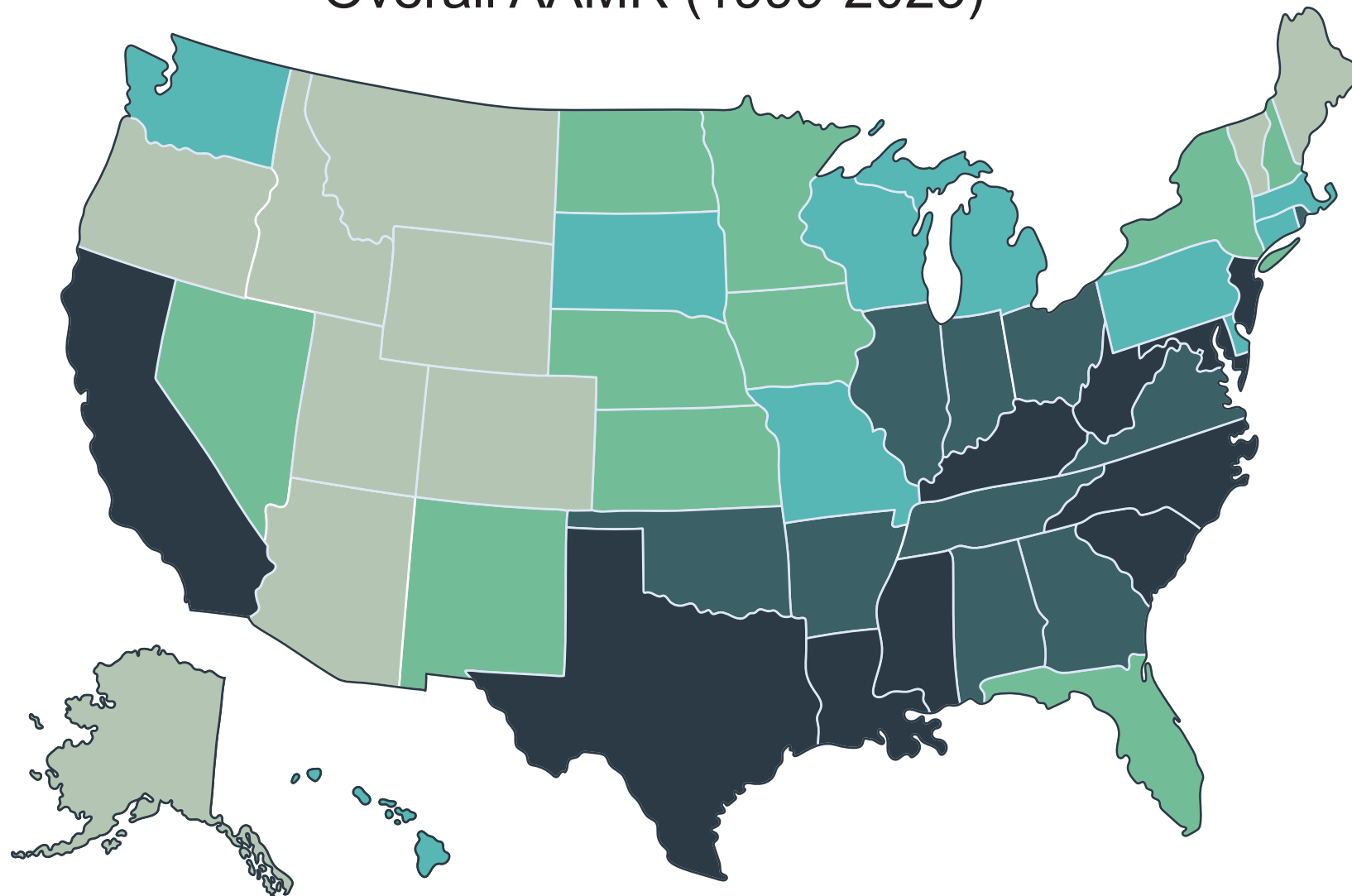
1999-2023



Trends:
APC = Annual Percent Change
AAPC = Average APC
Tool: Joinpoint Regression Program

Results

Overall AAMR (1999-2023)



270,746 deaths

7.5 (1999) → 9.7 (2023)
AAMR

AAMR: 11.7 (2023)
% of deaths: 51.5%

AAMR: 8.1 (2023)
% of deaths: 48.5%

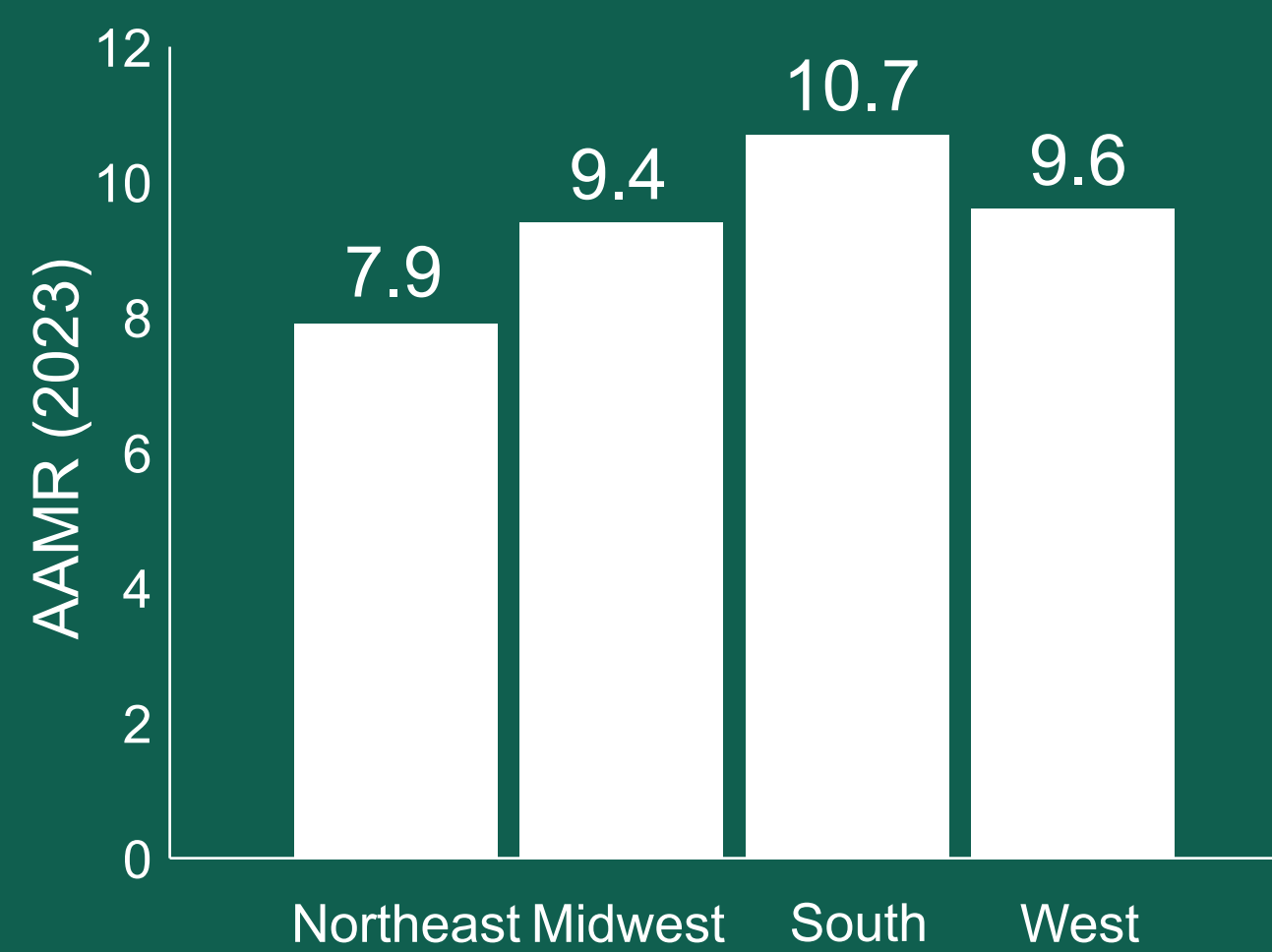


CMR (2023)

45-54: 2.2 < 55-64: 5.2 < 65-74: 11.2 < 75-84: 24.4 < ≥85: 50.3

AAMR (2023)

8.0 White, 8.3 Asian or Pacific Islander, 10.4 Hispanic or Latino, 12.9 American Indian or Alaska Native, 21.1 Black or African American



Large metropolitan:
10.0 (2020)



Medium/small
metropolitan:
10.5 (2020)



Non-metropolitan:
10.9 (2020)

85.0% deaths in inpatient hospitals
92.9% deaths due to unspecified septicemia

Conclusion

CKD-Sepsis-related mortality remained relatively stable from 1999 to 2023, though certain populations, particularly males, older adults, Black individuals, residents of the South and non-metropolitan areas continue to experience higher mortality rates.

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