

MORTALITY TRENDS IN HEMATOLOGIC MALIGNANCIES WITH ALCOHOLIC LIVER DISEASE AND CIRRHOSIS IN THE UNITED STATES, 1999-2024

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INTRODUCTION

- Hematologic malignancies are a major cause of morbidity and mortality, often influenced by coexisting conditions.
- Cirrhosis and alcoholic liver disease are increasingly common in the United States and may worsen outcomes through immune dysfunction and limited treatment options.
- Patients with hematologic cancers face added risk from treatment-related liver injury and alcohol use.
- National mortality trends in patients with both hematologic malignancies and liver disease remain poorly characterized.

OBJECTIVE

- Evaluate mortality rates and trends
- Population:** Adults
- With hematologic malignancies and coexisting alcoholic liver disease
- Country:** United States
- Period:** 1999 to 2024.

METHODS

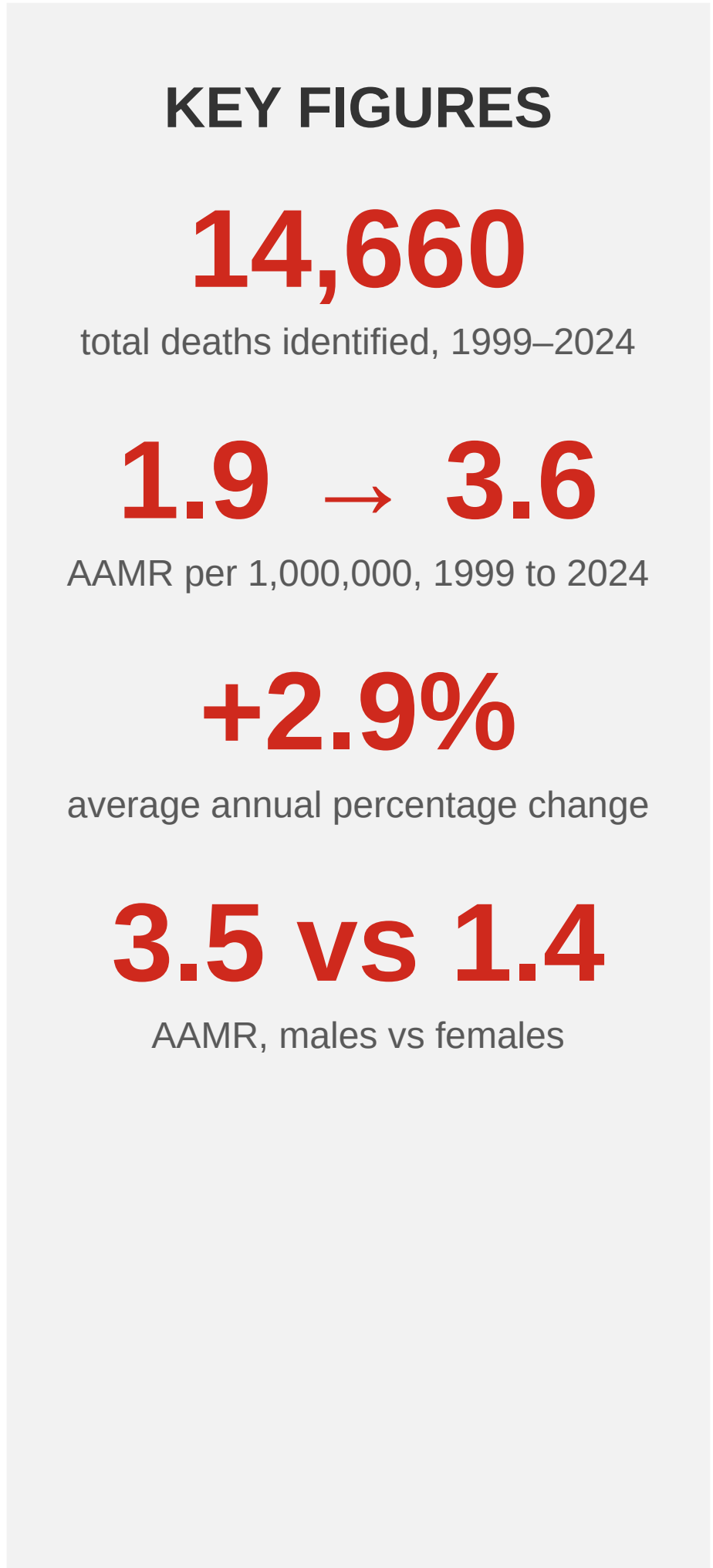
- Retrospective population-based analysis
- CDC WONDER database, 1999–2024
- Adults ≥25 years, United States
- Hematologic malignancies (ICD-10 C81–C96)
- Alcoholic liver disease/cirrhosis (K70, K73, K74)
- AAMRs per 1,000,000 and annual percentage change
- Stratified by sex, race/ethnicity, U.S. region
- Age groups: 25–34 to ≥85 years
- Joinpoint regression for trend analysis

CONCLUSIONS

- Mortality from hematologic malignancies in adults with alcoholic liver disease rose steadily from 1999 to 2024.
- Higher rates were observed in males, non-Hispanic American Indian individuals, and residents of the Western United States.
- Findings indicate a consistently increasing burden in this population.
- Support closer attention to patients with coexisting liver disease when evaluating cancer outcomes.

RESULTS

- 14,660 hematologic malignancy–related deaths identified in adults with alcoholic liver disease, 1999–2024 (average AAMR 2.4 per 1,000,000).
- Mortality rose from 1.9 in 1999 to 3.6 in 2024 (average APC 2.9).
- Males had a higher AAMR than females (3.5 vs 1.4) and a steeper increase over time (AAPC 3.3 vs 2.9).
- Highest AAMR in non-Hispanic American Indian individuals (4.8); lowest in non-Hispanic Asian individuals (1.3).
- Highest regional AAMR in the West (2.7); lowest in the Northeast (2.0).



Subgroup	AAMR (per 1,000,000)
Overall (1999–2024)	2.4
Year 1999	1.9
Year 2024	3.6
Male	3.5
Female	1.4
Non-Hispanic American Indian (highest)	4.8
Non-Hispanic Asian (lowest)	1.3
West (highest region)	2.7
Northeast (lowest region)	2.0

Table 1. Age-adjusted mortality rates (AAMR, per 1,000,000) among adults aged ≥25 years with hematologic malignancies and coexisting alcoholic liver disease or cirrhosis, United States, 1999–2024. Source: CDC WONDER.

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REFERENCES

1. Centers for Disease Control and Prevention. Wide-ranging Online Data for Epidemiologic Research (CDC WONDER): Multiple Cause of Death files, 1999–2024. Available at: <https://wonder.cdc.gov>