

Mortality Trends and Demographic Disparities in Intrahepatic Bile Duct Carcinoma in the United States, 1999–2020: A CDC WONDER Analysis

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BACKGROUND

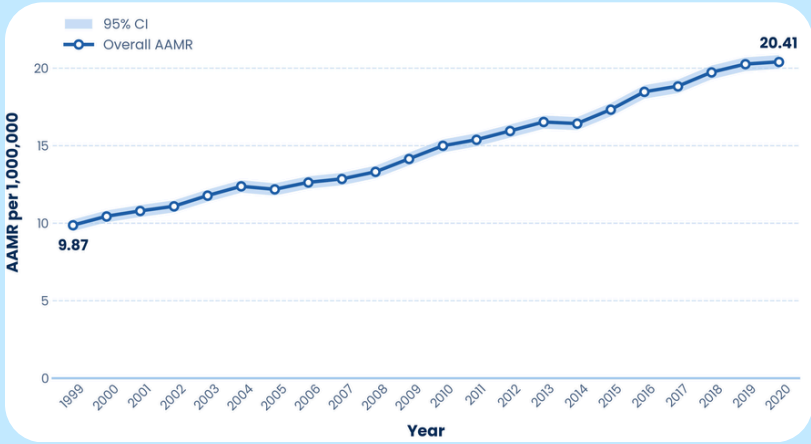
Intrahepatic bile duct carcinoma (Intrahepatic Cholangiocarcinoma) is an aggressive malignancy with a rising incidence of approximately 1.5–2.1 cases per 100,000 population in the United States, accounting for 10–20% of primary liver cancers. Despite its increasing burden and poor prognosis, mortality trends and demographic disparities remain inadequately studied. This study evaluates mortality trends and demographic patterns in intrahepatic bile duct carcinoma in the United States from 1999 to 2020.

METHODS

- CDC WONDER data (1999–2020) identified deaths due to Intrahepatic bile duct carcinoma (ICD:22.1).
- Age-adjusted mortality Rates (AAMR) were calculated per 1,000,000.
- We explored trends by age, gender, race, census region, and urbanization
- Joinpoint regression analysis estimated Annual Percent Change (APC) and Average Annual Percent Change (AAPC), with a p-value of <0.05 considered significant.

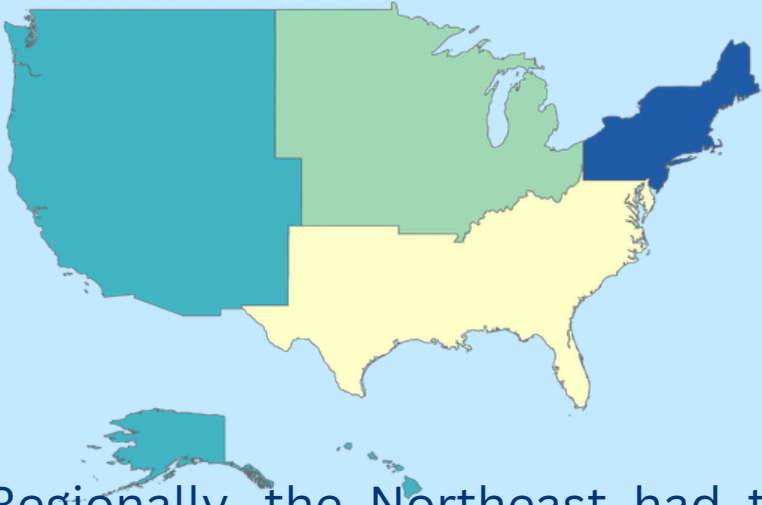
FINDINGS

Overall Trends



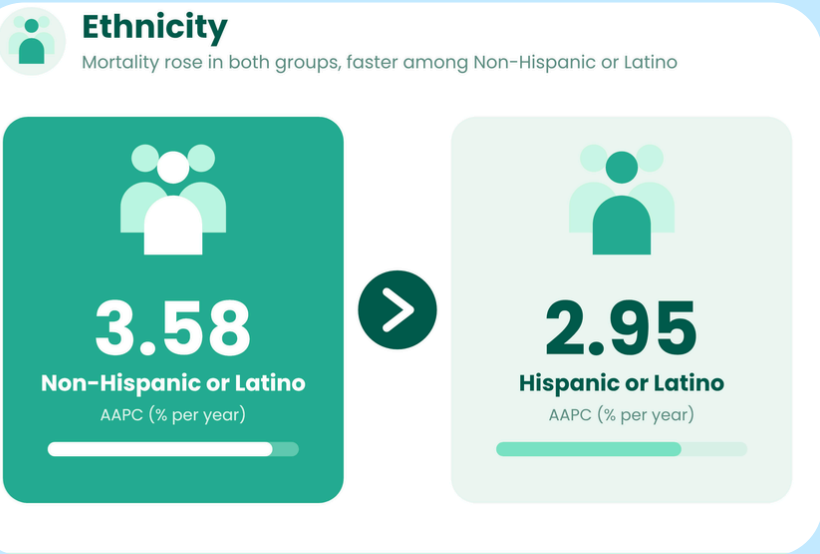
A total of **113,450** deaths with steady linear increase of AAMR (APC: 3.55: 95% CI;3.41 to 3.69).

Regional Disparities



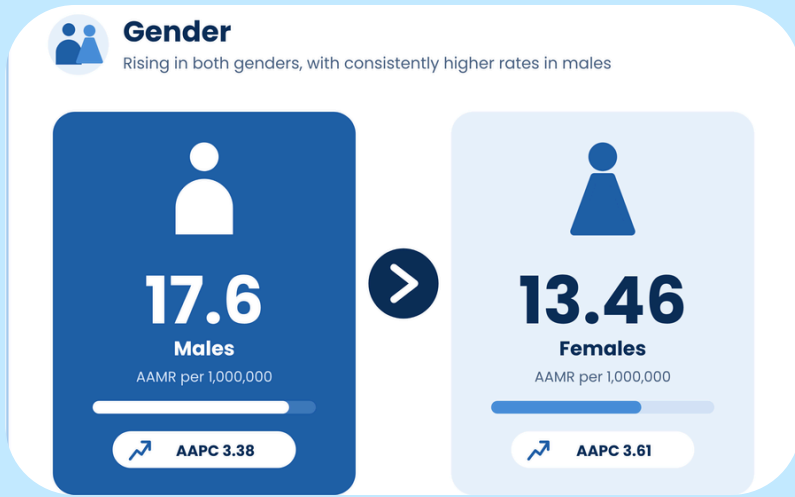
Regionally, the Northeast had the highest AAMR (16.62), (AAPC: 3.79), while the South (13.61) had the lowest (AAPC: 3.54).

Racial Disparities



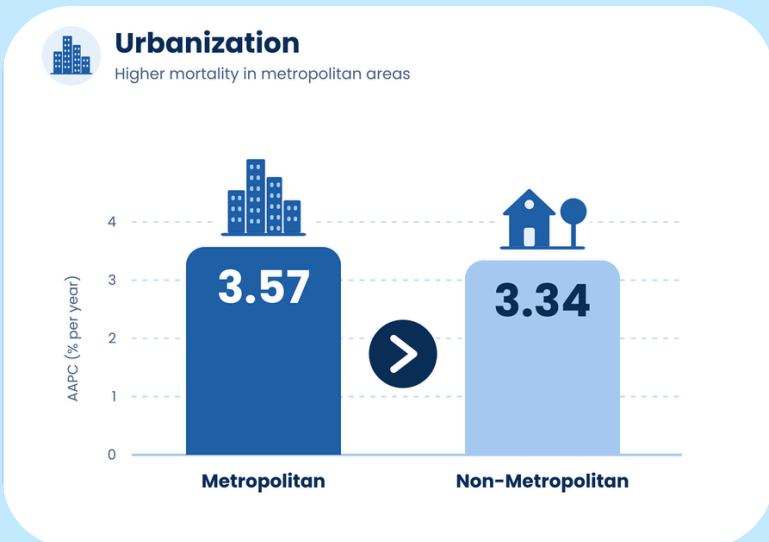
Hispanic or Latinos exhibited higher mortality trends (AAPC: 2.95) than Non- Hispanic or Latinos (AAPC: 3.58)

Disparities in Gender



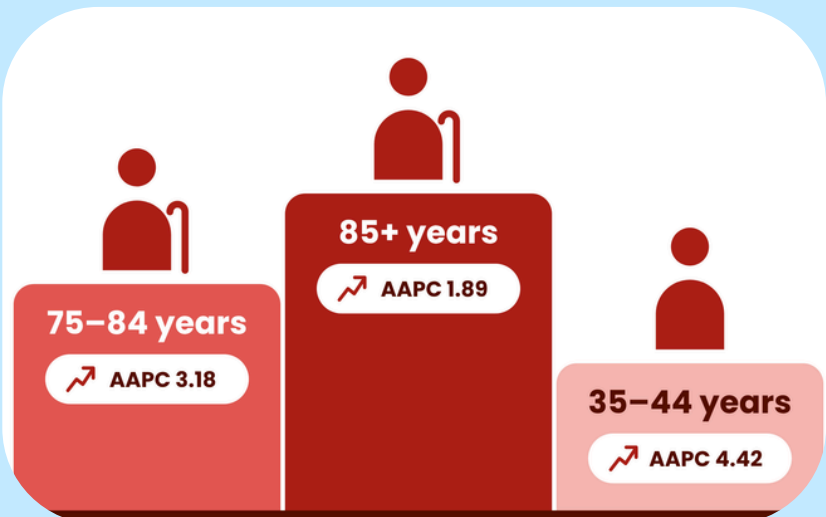
Both Males and Females exhibited increasing mortality, with consistently higher AAMR in Males than Females.

Metro Vs. Non Metro



Higher AAMR was found in Metropolitan areas than Non-Metropolitan areas

Disparities in Age



Mortality peaked in 85+ year age followed by 75-84 and was lowest in 35-44 year ages.

CONCLUSION

Overall, AAMR increased from 1999–2020, with consistently higher mortality in Males. The Northeast reported the highest AAMR, while the South had the lowest. Mortality was highest among Hispanic or Latino individuals, Metropolitan areas and those aged 85 years or above. These patterns emphasize the need for focused interventions, early diagnosis and equitable healthcare strategies.