

ABSTRACT NO:20
RESEARCH ARTICLE**Trends and Disparities in Mortality Due to Secondary Malignant Neoplasm of the Brain and Cerebral Meninges in the United States (1990–2020)**Vishan Das ¹, Kaneez Fatima ², Muhammad Owais Shaikh ³, Suneel Kumar ⁴, Kashf Younas ⁵, Tunjeena Shaikh ⁶**Abstract**

Objective: Secondary brain cancer is a serious condition associated with poor outcomes and high mortality. However, long-term mortality trends in the United States have not been well described. This study assessed national mortality trends from 1999 to 2020.

Methods: Using data from the CDC WONDER Multiple Cause of Death database (1999–2020) for U.S. adults aged ≥ 25 years, we analyzed age-adjusted mortality rates (AAMRs) per 100,000 population using ICD-10 code C79.3 for secondary brain cancer. Mortality rates were stratified by year, sex, race/ethnicity, census region, urbanization level, and age group. Joinpoint regression analysis was used to estimate annual percent changes (APCs) and average annual percent changes (AAPCs) with 95% confidence intervals (CIs). The CDC WONDER database was searched, and the relevant data were extracted and analyzed on June 24, 2026.

Results: A total of 358,435 deaths due to secondary brain cancer were identified during the study period. Overall AAMRs declined from 9.65 in 1999 to 7.63 in 2020 (AAPC: -1.16 ; 95% CI: -1.54 to -0.77 ; $p < 0.001$). A significant decline was observed from 1999–2007 (APC: -4.42 ; $p < 0.001$), followed by a significant increase from 2013–2017 (APC: 3.72 ; $p = 0.0002$). Males consistently exhibited higher mortality than females (8.10 vs. 7.06). The highest AAMRs was observed among adults aged ≥ 85 years (0.84). Non-Hispanic (NH) Whites had the highest average AAMR (7.96), whereas NH Asians had the lowest (4.16). Regionally, the Midwest had the highest average AAMR (7.98), while the Northeast had the lowest (6.49). Mortality was higher in non-metropolitan areas (9.12) than in metropolitan areas (7.12).

Conclusion: Secondary brain cancer mortality was highest among males, Non-Hispanic Whites, adults aged ≥ 85 years, and residents of the Midwest and non-metropolitan areas, highlighting the need for targeted interventions and equitable access to specialized cancer care.

Keywords: Secondary brain cancer, Brain metastases, Cancer mortality

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