Poster #15

Trends and Burden of Oncologic Emergencies in Brazil: A Nationwide Time-Series Analysis (2008–2024)

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Background

Oncologic emergencies are acute, life-threatening complications of cancer or its treatment and represent a growing challenge for health systems worldwide. Evidence from low- and middle-income countries (LMICs) remains scarce, despite marked demographic aging, rising cancer incidence, and persistent health inequities. Brazil, the largest LMIC with a universal public health system (SUS), offers a unique setting to evaluate long-term national trends and disparities in urgent cancer-related hospitalizations and outcomes.

Methods

We conducted a nationwide time-series analysis using publicly available data from the Brazilian Unified Health System Hospital Information System (SIH/SUS). We included all urgent hospitalizations with a primary diagnosis of malignant neoplasm (ICD-10 C00–C97) from 2008 to 2024. Outcomes included hospitalizations, in-hospital deaths, mean length of stay, and in-hospital mortality. Analyses were stratified by sex, age group, race/ethnicity, macro-region, and cancer site. Age-standardized rates were calculated using the 2024 Brazilian population as reference. Temporal trends were estimated using log-linear regression, reporting average annual percentage change (AAPC) or absolute annual change (AAAC).

Results

National Trends

Between 2008 and 2024, Brazil recorded 4,909,925 oncologic emergency hospitalizations and 783,669 in-hospital deaths. Hospitalizations increased significantly (AAPC +3.49%), remaining significant after age standardization (AAPC +1.26%). In-hospital deaths also rose (AAPC +4.15%), while age-standardized death rates showed a smaller increase (AAPC +1.32%). Mean length of stay declined from 8.1 to 6.5 days (AAPC –1.49%). Overall in-hospital mortality was 15.96%, with a small but significant annual increase (AAAC +0.07 percentage points).

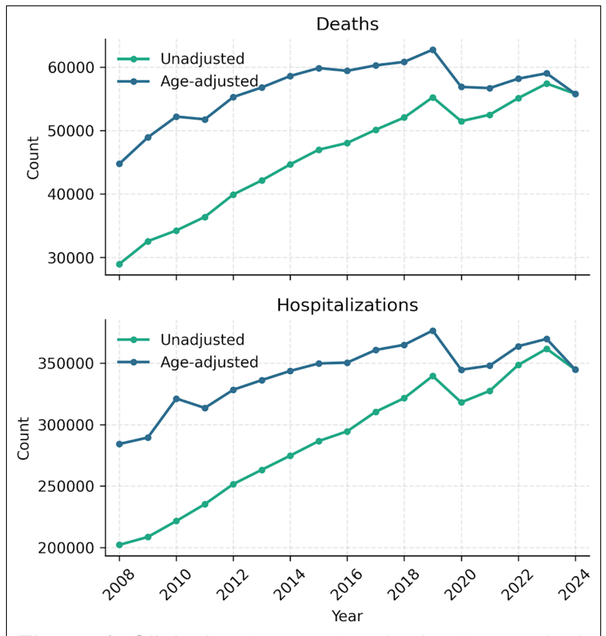

Figure 1. *Clinical outcomes trends due to oncologic emergencies in Brazil's Unified Health System (2008–2024). Above: In-hospital deaths (annual counts). Below: Hospitalizations (annual counts). Data were standardized by age groups for eliminating effects of population aging and growth.*

Sex Trends

Men accounted for slightly more hospitalizations (51.7%) and deaths (51.5%). However, women showed steeper relative increases, particularly in in-hospital deaths (AAPC +4.56% vs +3.76% in men), reaching similar lengths of stay by 2024.

Race/Ethnicity Trends

White patients represented the largest share of hospitalizations and deaths (~46%), but non-White groups experienced the fastest growth. Brown (Pardo) and Black populations showed marked increases in both hospitalizations and deaths (AAPC > 6%), while Black patients consistently had the highest in-hospital mortality. Indigenous trends were largely stable, likely reflecting underdiagnosis and underreporting.

Age Trends

Hospitalizations and deaths were stable or declining among children and adolescents. In contrast, adults aged ≥50 years accounted for the majority of events, with the steepest increases observed among those aged ≥80 years (hospitalizations AAPC +5.83%; deaths AAPC +6.23%).

Geographic Regions Trends

The Southeast and South regions concentrated the largest absolute burden, but the fastest growth occurred in the North and Northeast, highlighting widening regional inequities in emergency oncology care.

Cancer Site Trends

Malignancies of the digestive system accounted for the largest share of hospitalizations and deaths (~31–33%), followed by hematologic/lymphoid, respiratory/intrathoracic, and breast cancers, all showing significant upward trends.

Conclusions

Oncologic emergencies in Brazil increased substantially from 2008 to 2024, beyond what can be explained by population aging alone. The burden is disproportionately rising among older adults, women, non-White populations, and residents of historically underserved regions. Persistently high in-hospital mortality underscores the need for equity-oriented emergency oncology networks, strengthened prevention and early diagnosis, and timely access to cancer treatment. These findings are highly relevant for Brazil and other LMICs facing rapid epidemiologic transition and growing acute cancer care demands.

References

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