

## TREATMENT OF MALIGNANT NEOPLASMS OF BONES AND ARTICULAR CARTILAGE IN BRAZIL: AN ANALYSIS OF THE SPATIOTEMPORAL DISTRIBUTION FROM 2014 TO 2024

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**Introduction:** Malignant neoplasms of bones and articular cartilage (ICD-10 C40-C41) are rare cancers that predominantly affect young individuals and the elderly, often requiring complex and high-cost treatments. In Brazil, disparities in access to early diagnosis, specialized care, and adequate treatment across regions may influence disease outcomes and survival rates. Understanding the spatial and temporal distribution of these hospitalizations is essential for identifying healthcare inequalities and supporting public health planning within the Unified Health System (SUS). **Objectives:** To analyse the spatiotemporal distribution characteristics of the treatment for malignant neoplasms of bones and articular cartilage in Brazil from 2014 to 2024. **Methods:** This descriptive ecological study with a temporal series and quantitative nature has used data from the Hospital Information System of the Unified Health System (SIH/SUS) concerning the treatment of malignant neoplasms of bones and articular cartilage in Brazil between 2014 and 2024. The variables used included number of hospitalizations, region, state, year of occurrence, type of hospitalization (elective or urgent), average cost of hospitalization, and mortality. The descriptive analysis was performed using Microsoft Excel 2021. **Results:** From 2014 to 2024, a total of 131,272 hospitalizations for malignant neoplasms of bones and articular cartilage were recorded in Brazil, with the highest concentration in the Southeast region, accounting for 50,375 (38.3%) cases, and the lowest one in the North region, with 6,581 (5%). The state of São Paulo led in hospitalizations, with 30,177 (22.9%) cases. The year 2024 recorded the highest number of treatments, with 13,239 (10%) hospitalizations. Regarding the type of hospitalization, 61,760 (47%) were urgent, with 26,975 (43.6%) occurring in the Southeast region. The highest average hospitalization cost was R\$2,109.07 in the Southeast, and the lowest was R\$1,792.82 in the Midwest. In terms of mortality, 6,578 deaths from these neoplasms were registered in Brazil, with the majority in 2023, totaling 645 (9.8%) deaths. The total of deaths in the Southeast region was 2,746 (41.7%), while the Midwest presented 440 (6.7%) cases. **Conclusion:** The data highlights significant regional inequalities in Brazil's management of malignant bone and cartilage neoplasms. The Southeast, home to the largest population and the highest hospitalization costs, also records the most deaths

and urgent cases—indicating that greater financial resources are not translating into better outcomes. This suggests systemic inefficiencies, likely tied to delayed diagnoses and unequal access to early care. In contrast, the Midwest, with the lowest average costs and fewer deaths, points to potentially more effective healthcare delivery despite fewer resources. The North's minimal hospitalization numbers raise concerns about underdiagnosis and restricted access. The peak in treatments in 2024 following the highest death count in 2023 may reflect delayed care from previous systemic stress, possibly linked to broader public health disruptions. Altogether, the findings underscore that equitable access and timely intervention are more decisive for outcomes than spending alone.

**Keywords:** Bone Neoplasms; Articular Cartilage Neoplasms; Treatment in Brazil.