

Secondary Solid Malignancy Mortality Among Lymphoma Decedents in the United States: A Nationwide CDC WONDER Analysis, 1999–2020

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INTRODUCTION

Advances in lymphoma therapy have significantly improved long-term survival, resulting in a growing population at risk for secondary solid malignancies.

National mortality patterns associated with secondary solid cancers among lymphoma decedents remain poorly characterized.

AIM

To evaluate temporal trends, demographic disparities, geographic variation, and dominant cancer-specific mortality patterns of secondary solid malignancies among lymphoma decedents using a nationwide U.S. mortality database.

METHODS

- Retrospective population-based study using CDC WONDER Multiple Cause of Death data, 1999–2020
- Lymphoma decedents identified via ICD-10 codes C81–C86, C88, C90 listed as a multiple cause of death
- Secondary solid malignancy mortality defined as a solid tumor ICD-10 code listed as the underlying cause of death
- Outcomes: temporal trends, demographic disparities, regional variation, state-level age-adjusted mortality rates (AAMRs), and Hodgkin (HL) vs. non-Hodgkin lymphoma (NHL) comparisons

CONCLUSIONS

Secondary solid malignancy mortality among lymphoma decedents has risen substantially over the past two decades, with marked demographic and geographic disparities.

Lung cancer overwhelmingly dominated mortality burden, highlighting the importance of survivorship-focused screening, smoking cessation, and long-term preventive oncology strategies among lymphoma survivors.

RESULTS

- 21,205 secondary solid malignancy deaths identified among lymphoma decedents (1999–2020)
- Lung/bronchus cancer was the leading cause (52.2%), followed by colorectal (12.9%), prostate (9.7%), breast (8.3%), and pancreatic cancer (7.8%)
- Males accounted for 61.3% of deaths; White individuals represented 96.9% of the mortality burden
- Highest regional burden in the South (35.9%), followed by the Midwest (22.9%), West (21.2%), and Northeast (20.1%)
- Highest state AAMRs: Kentucky (1.84), West Virginia (1.79), Mississippi (1.73) per 100,000
- NHL decedents accounted for 89.4% of deaths, with greater smoking-related malignancy burden; HL decedents showed relatively higher breast cancer mortality

21,205

secondary solid malignancy deaths

52.2%

were lung/bronchus cancer

≈60%

relative rise in AAMR, 1999 → 2020

1.84

highest state AAMR (Kentucky, per 100k)

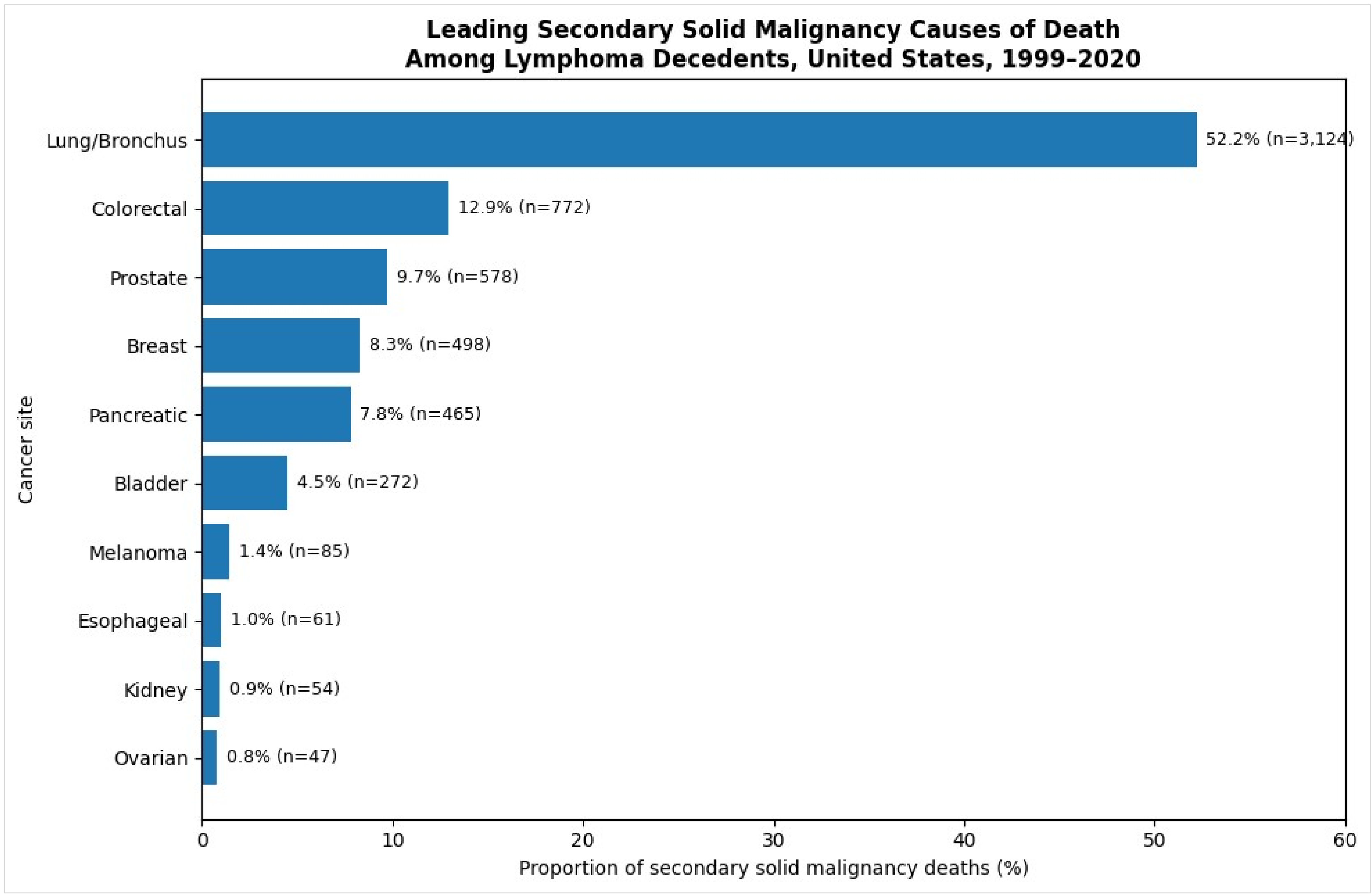


Figure 1. Leading secondary solid malignancy causes of death among lymphoma decedents, United States, 1999–2020.

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