

Estimation and characterization of indirect costs of cancer in Mexico

Juan Gabriel Gay Molina, MD, MSc; Luis Adrian Ortiz Blas, MSc; Lourdes Barrios Aparicio, MD, MSc; Ana Paola Paredes Rodriguez, BSc; Daniel Juarez Bautista, BSc



BACKGROUND

Cancer is one of the leading causes of mortality in Mexico, severely impacting both the healthcare system and Mexican households. This study focuses on estimating the indirect costs associated with five major types of cancer in Mexico: breast, lung, cervical, colorectal, and leukemia (both acute lymphocytic and acute myeloid).¹ With cancer cases projected to increase by 89.7% by 2050 in Mexico ², compared to 2022, this represents a significant challenge for the public health provision in the country.

OBJECTIVES

This analysis aims to estimate the indirect costs associated with some of the primary types of cancer in Mexico, considering the specific characteristics of the Mexican labor market. As part of this approach, we identified existing data on indirect costs for cancer patients within the Mexican population. Using this information, we estimated the indirect costs over a 6-year time horizon for the selected types of cancer, providing a basis for understanding the broader economic impact on both patients and health institutions.

METHODOLOGY

The estimation of indirect costs encompasses productivity losses, disability-related expenses, and losses from premature mortality. The methodology uses age-specific cancer incidence rates and mortality data for each cancer type, as well as the proportion of patients who remain in the workforce post-diagnosis.^{3,4}

To reflect the Mexican population accurately, the model segments incidence data by demographic factors. Labor market data from the National Survey of Occupation and Employment ⁵ inform estimates of wages, benefits, and costs associated with both formal and informal employment. Using a cohort-based approach, the model introduces new patient groups each year and tracks previous cohorts over time. Focusing on indirect costs from a social perspective, the model captures wage losses, caregiver-associated expenses, costs to the social security system and productivity losses from premature death.

RESULTS

Key findings indicate that family-assumed costs represent the largest portion of indirect costs, comprising approximately 41% of the total, followed by labor-related costs. Although men generally incur higher overall costs, women bear a higher share of family-assumed costs. Additionally, patients without social security coverage face greater financial strain. Projections for 2030 estimate total indirect costs at \$310.8 millions dollars, with lung cancer as the largest contributor, followed by acute lymphocytic leukemia and colorectal cancer. To enhance the analysis, a cost-salary ratio was calculated to compare the financial burden on formal versus informal workers by gender. This ratio reveals that those in the informal sector without health system protection face up to four times the financial risk of those in the formal sector, with this risk disproportionately affecting women.

Figure 1. Methodology

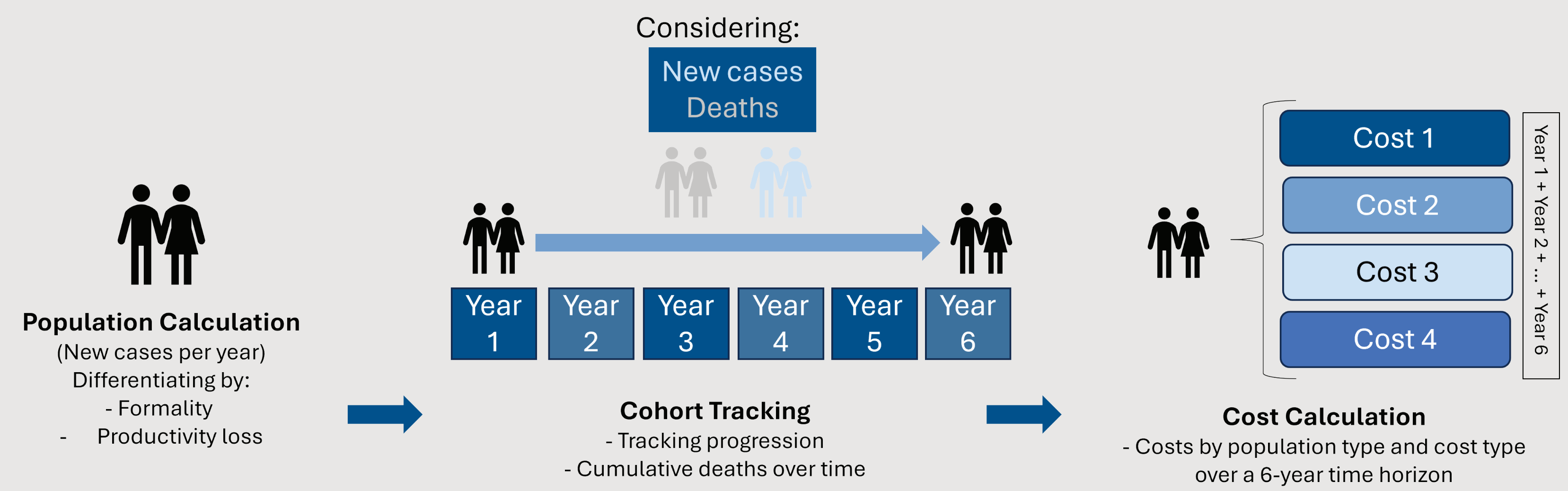


Figure 2. Population

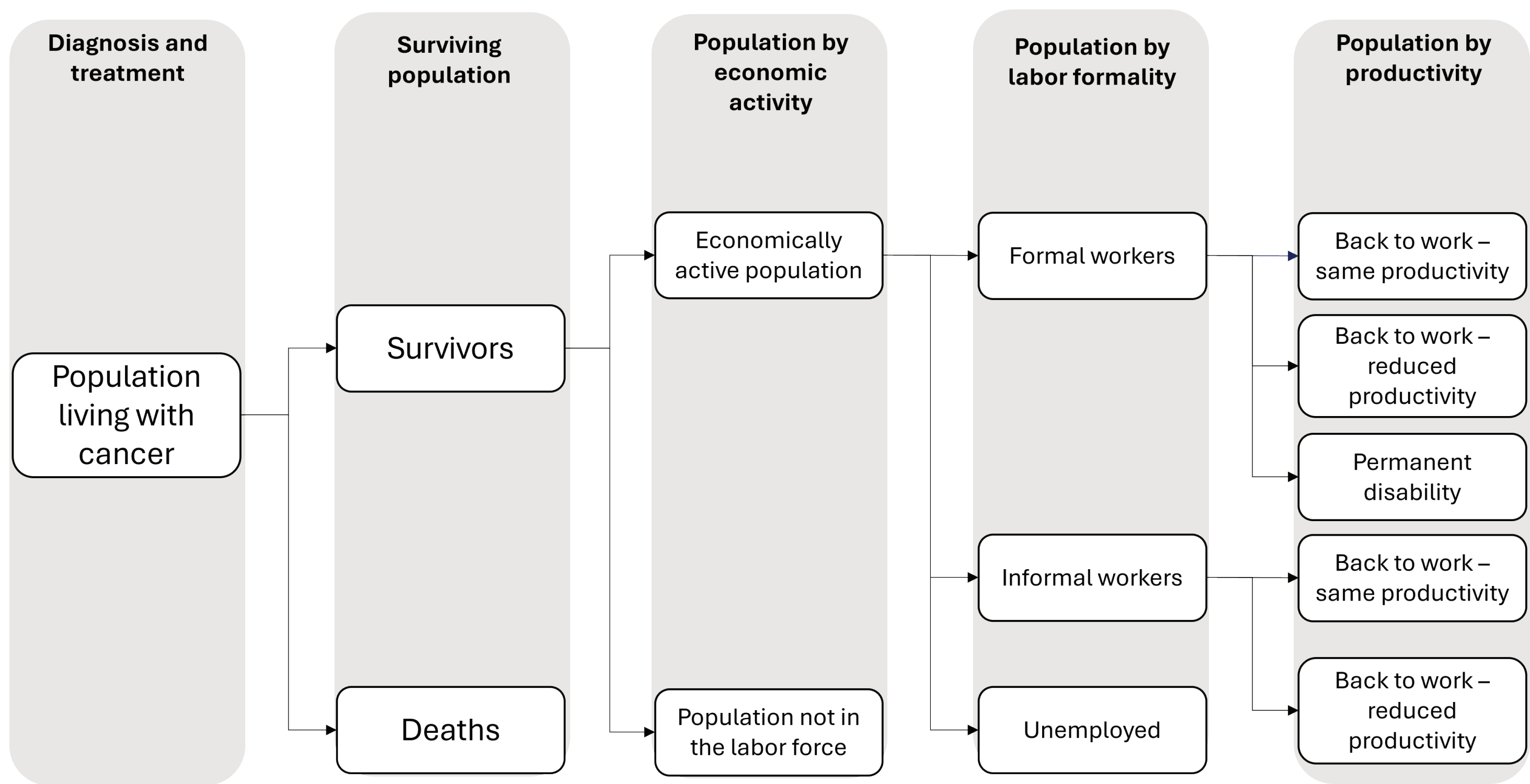
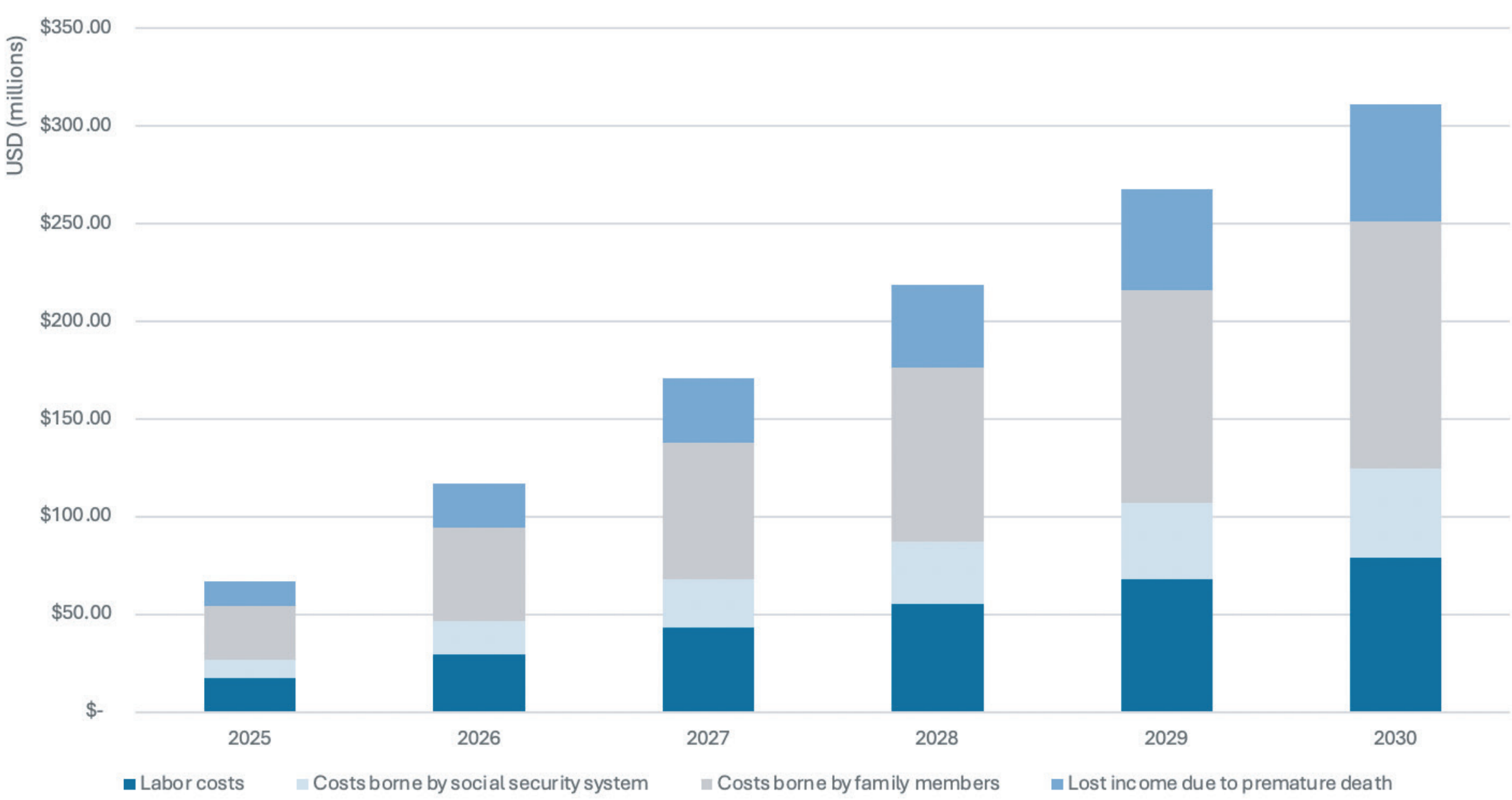


Figure 3. Annual Costs by Cost Type



CONCLUSIONS

The study results show that cancer in the Mexican adult population has devastating economic impacts that affect patients and their families. Lung cancer and acute myeloid leukemia presented the largest economic losses due to premature mortality, while breast cancer and cervical cancer stood out in terms of work disability costs.

DISCUSSION

Based on these findings, the study proposes future research and institutional work directions. These include strengthening early diagnosis efforts, improving care systems to provide better support for caregivers, considering the implementation of assistance programs for people with cancer-related disabilities, and conducting more comprehensive studies on indirect and non-medical direct costs associated with cancer. The results underscore the urgent need to develop and implement public policies specifically aimed at addressing these financial and social challenges.

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