

# Comprehensive Analysis of Cancer Incidence and Mortality Trends in Costa Rica: Implications for Public Health

Guzman Percy<sup>1,2</sup>

<sup>1</sup>Cancer Prevention Fellowship Program (CPFP), Division of Cancer Prevention (DCP), National Cancer Institute (NCI), Rockville, Maryland, United States

<sup>2</sup>Health Assessment Research Branch (HARB), Health Delivery Research Program (HDRP), Division of Cancer Control and Population Sciences (DCCPS), Rockville, Maryland, United States

Email: percy.guzman@nih.gov

**How to cite this paper:** Percy, G. (2024) Comprehensive Analysis of Cancer Incidence and Mortality Trends in Costa Rica: Implications for Public Health. *Journal of Cancer Therapy*, 15, 219-221.  
<https://doi.org/10.4236/jct.2024.155020>

**Received:** January 10, 2024

**Accepted:** May 17, 2024

**Published:** May 20, 2024

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## Abstract

This commentary delves into the evolving landscape of cancer incidence and mortality in Costa Rica, presenting a comprehensive analysis of the data. Key findings reveal a concerning upward trajectory in cancer incidence rates, placing Costa Rica at the forefront within Central America. While prostate cancer and breast cancer dominate, disparities emerge when scrutinizing gender-specific trends. Notably, stomach and cervical cancers show declines, potentially attributed to targeted interventions. However, colorectal and liver cancers witness mortality increases, necessitating strategic responses. Geographical disparities persist across provinces, highlighting the need for equitable healthcare access. In conclusion, this commentary underscores the urgency of addressing the burgeoning cancer burden in Costa Rica, calling for evidence-based interventions and collaborative efforts on a global scale.

## Keywords

Cancer Incidence, Cancer Mortality, Costa Rica, Cancer Trends, Risk Factors, Early Detection, Public Health

## 1. Introduction

Cancer represents an ever-evolving global health challenge, transcending borders and regions. Within this context, Costa Rica, a Central American nation, emerges as a unique case study offering invaluable insights into the intricate dynamics of cancer epidemiology. This commentary embarks on a journey to decipher the trends in cancer incidence and mortality in Costa Rica, elucidating

the multifaceted factors influencing these trends, and proposing evidence-based strategies to address this burgeoning health concern [1] [2] [3].

## **2. Analysis**

### **2.1. Incidence on the Rise**

One of the most striking revelations is the relentless increase in cancer incidence in Costa Rica since the 1990s. The statistics are compelling, revealing a 72% surge over three decades, culminating in an incidence rate of 188.7 per 100,000 in 2020. This surge positions Costa Rica at the forefront in Central America, bearing the highest cancer incidence rate in the region. In 2020 alone, Costa Rica reported 13,139 new cancer cases, vividly illustrating the magnitude of this challenge [4].

### **2.2. Gender Disparities Unveiled**

Digging deeper into the data, it becomes evident that certain cancers exhibit gender-specific prevalence. In 2020, prostate cancer emerged as the predominant concern among men, boasting an incidence rate of 56.6. In stark contrast, breast cancer reigned supreme among women, with an incidence rate of 47.5. Non-melanoma skin cancer and colorectal cancer also displayed upward trajectories, adding complexity to the cancer landscape [5].

## **3. Declining Trends**

Amidst these concerning trends, rays of hope emerge. Stomach and cervical cancers exhibited significant declines in incidence. This may be attributed to targeted screening programs and public health interventions, including the Human Papillomavirus (HPV) vaccination program. The reduction in lung cancer incidence, particularly among men, may be linked to successful tobacco control policies [6].

## **4. Mortality Challenges**

Shifting the focus to cancer mortality, our analysis unveils a complex landscape. While stomach, cervical, and lung cancer mortality rates have declined, colorectal and liver cancers have witnessed alarming increases. The rising mortality of colorectal cancer underscores the need for enhanced prevention and early detection strategies, as well as more effective treatment approaches. The surge in liver cancer mortality may be associated with factors such as viral hepatitis infections, alcohol consumption, and obesity.

## **5. Geographical Disparities Persist**

Our study reveals disparities in cancer incidence and mortality across Costa Rica's provinces, highlighting the influence of diverse factors, including risk exposure, healthcare access, and socioeconomic status. Identifying and addressing these disparities is imperative to ensure equitable healthcare services and outcomes for all.

## 6. Conclusion

In summary, this commentary serves as a clarion call to action. The burgeoning cancer burden in Costa Rica demands immediate attention and strategic interventions. While prostate and breast cancers dominate the landscape, gender-specific and age-specific trends underscore the need for targeted approaches. Declines in stomach and cervical cancer incidence are encouraging but must be sustained through continued efforts. Conversely, the mortality challenges posed by colorectal and liver cancers necessitate innovative solutions. Geographical disparities underline the importance of equitable healthcare access and tailored interventions. Costa Rica's experience serves as a microcosm of global cancer epidemiology, emphasizing the urgency of addressing this complex health challenge. Collaborative efforts among researchers, clinicians, policymakers, and public health organizations are imperative to reduce the impact of cancer on individuals, families, and societies worldwide.

## Disclaimer

The content of this paper is the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health or the National Cancer Institute.

## Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

## References

- [1] Bray, F., Ferlay, J., Soerjomataram, I., Siegel, R.L., Torre, L.A. and Jemal, A. (2018) Global Cancer Statistics 2018: GLOBOCAN Estimates of Incidence and Mortality Worldwide for 36 Cancers in 185 Countries. *CA: A Cancer Journal for Clinicians*, **68**, 394-424. <https://doi.org/10.3322/caac.21492>
- [2] Ward, E., DeSantis, C., Robbins, A., Kohler, B. and Jemal, A. (2014) Childhood and Adolescent Cancer Statistics, 2014. *CA: A Cancer Journal for Clinicians*, **64**, 83-103. <https://doi.org/10.3322/caac.21219>
- [3] Makarova-Rusher, O.V., Altekruse, S.F., McNeel, T.S., Ulahannan, S., Duffy, A.G. and Graubard, B.I. (2016) Population Attributable Fractions of Risk Factors for Hepatocellular Carcinoma in the United States. *Cancer*, **122**, 1757-1765. <https://doi.org/10.1002/cncr.29971>
- [4] Alejandro, C., Percy, G. and Jack, M. (2023) Epidemiological Patterns of Common Cancers in Costa Rica: An Overview up to 2020. *Open Journal of Social Sciences*, **11**, 500-517. <https://doi.org/10.4236/jss.2023.116033>
- [5] Guerrero-López, C.M., Molina, M.S., Martínez-López, A., Villarreal-Garza, C., Ancer-Rodríguez, J. and Ocampo-Candiani, J. (2013) Trends in Skin Cancer Incidence in Monterrey, Mexico. *Dermatology Practical & Conceptual*, **3**, 11-16.
- [6] Herrero, R., Quint, W., Hildesheim, A., *et al.* (2015) Reduced Prevalence of Oral Human Papillomavirus (HPV) 4 Years after Bivalent HPV Vaccination in a Randomized Clinical Trial in Costa Rica. *PLOS ONE*, **10**, e0139156.