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Cancer's hidden cost: new study quantifies the profound societal loss from premature cancer deaths

Lyon, France, 24 September 2025 – A new study by the International Agency for Research on Cancer (IARC) and collaborators estimated hundreds of billions in lost contributions from paid and unpaid work globally. Published today in the *Journal of the National Cancer Institute*,¹ the study provides detailed estimates of the loss in societal contributions from premature cancer deaths due to productivity loss among individuals of working age (15–64 years) by sex for 36 cancer sites and across 185 countries. The profound economic void left behind when individuals die early underscores the deep interconnectedness between health and economic stability.

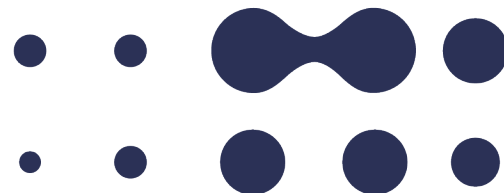
The analysis included lost contributions from paid work (i.e. work performed in exchange for remuneration) as well as unpaid work (i.e. activities that individuals carry out in their daily lives, such as caring for dependents or household work). The inclusion of both paid and unpaid work in the analysis not only provides a more accurate estimate of the lost societal contributions from premature cancer deaths but also addresses gender equity issues in participation in paid and unpaid work.

“When an individual dies earlier than expected, we lose their contributions to their families, communities, and society. From the societal perspective, this loss can be quantified by estimating the value of productivity loss,” says Dr Isabelle Soerjomataram, Deputy Head of the Cancer Surveillance Branch at IARC. “Including both paid and unpaid work acknowledges the gendered nature of unpaid work, which remains undervalued despite its economic and social significance. Because women continue to carry out a disproportionate share of unpaid work, incorporating it into the estimates allows us to reveal the true burden of cancer.”

Key findings

In 2022, the estimated global productivity loss due to premature cancer deaths totalled US\$ 566 billion, equivalent to 0.6% of the global gross domestic product (GDP). Premature cancer deaths among men led to US\$ 315 billion in societal losses and among women led to US\$ 250 billion in societal losses.

¹ Kong YC, Niyigaba J, Tran PB, Vignat J, Bray F, Gauvreau CL, et al. (2025). Global paid and unpaid productivity losses due to cancer-related mortality. *J Natl Cancer Inst.* Published online 24 September 2025; <https://doi.org/10.1093/jnci/djaf193>



Disproportionate losses in low- and middle-income countries

The societal loss from premature cancer deaths was unevenly distributed. Of the global value, almost one third was from cancer deaths in Eastern Asia (US\$ 165 billion), followed by Northern America (US\$ 112 billion) and Western Europe (US\$ 70 billion). However, when considered in relation to the national economy (i.e. the GDP), the burden was heaviest in countries in Eastern Africa and Middle Africa.

Countries with low and medium levels of the Human Development Index (HDI) also faced disproportionate losses. For example, although countries with low HDI contributed the smallest proportion to the global value of lost societal contributions, the losses relative to GDP were the highest in these countries.

“In low- and middle-income countries, even modest losses in productivity can have an important impact on the national economy,” says IARC scientist Dr Yek-Ching Kong, the lead author of the study. “These findings reiterate the crucial need to invest in cancer prevention in low- and middle-income countries, where health systems are already strained and the economic burden of cancer is particularly acute.”

Substantial contribution of unpaid work

Of the total losses, US\$ 305 billion (53.9%) was from losses in paid work and US\$ 260 billion (46.1%) was from unpaid work. The relative contribution of losses from paid and unpaid work differed substantially between men and women.

Among men, losses from paid work accounted for a larger share (US\$ 204 billion; 64.6%). In contrast, among women, the share of losses from unpaid work was larger (US\$ 149 billion; 59.4%).

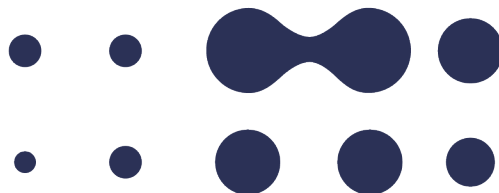
Although lost contributions from unpaid work were particularly substantial among women, the study found that they were also considerable among men. For example, unpaid work accounted for more than 40% of the total losses among men in most regions of Europe as well as in Northern America.

These findings highlight the importance of accounting for lost contributions from unpaid work, in addition to paid work, to reflect a more accurate estimate of the societal burden of premature cancer deaths.

Leading cancer types contributing to lost productivity are largely preventable

The largest societal losses were from lung cancer deaths (US\$ 88 billion), followed by deaths from breast cancer (US\$ 55 billion), liver cancer (US\$ 50 billion), and colorectal cancer (US\$ 50 billion). These cancer types are preventable through lifestyle modifications, including tobacco cessation, healthy dietary habits, reducing alcohol consumption, and hepatitis B vaccination. This highlights the substantial returns on investment of current cancer prevention efforts.

In many African regions, in Central and South America, and in Melanesia, Micronesia, and Polynesia, cervical cancer was among the top cancer types leading to large losses.



In countries with low HDI, cervical cancer also emerged as the leading cancer type in terms of the value of productivity loss. The substantial contribution of this largely preventable cancer supports the importance of the World Health Organization (WHO) Cervical Cancer Elimination Initiative.

Less-common cancer types are the costliest per premature death

The study found that the cancer types with the highest societal loss per premature death were testicular cancer, melanoma of the skin, and cancers of the brain and central nervous system. Although these cancer types are relatively uncommon, they often affect younger individuals and there are fewer effective options for prevention or treatment. This underscores the importance of continued investment in high-burden cancer types, as well as the substantial societal value of developing better strategies to prevent and treat less-common cancer types.

Increasing burden of societal losses with rising retirement age

In this study, the retirement age was set at 65 years. Many countries are raising the retirement age in response to increasing life expectancies. Therefore, the study also examined societal losses in a scenario with a higher retirement age. When the retirement age was increased to 70 years, the value of lost societal contributions due to premature cancer deaths increased substantially, amounting to US\$ 904 billion in 2022. This finding points to an even greater societal loss from cancer in the future and emphasizes the crucial need for sustained investments in cancer control efforts.

“The substantial loss in societal contributions due to early cancer deaths highlighted in this study underscores the profound value of scaling up cancer control efforts,” says Dr Soerjomataram. “Sustained investments in prevention, screening, and affordable, timely treatment can save countless lives and reduce the societal impact of premature cancer deaths. Although it is essential to focus on high-burden cancer types, developing effective control strategies for less-common cancer types is equally important, given their significant societal loss.”

Note to the Editors:

Online data visualization tools are now available on the Cancer Economics: Productivity Loss subsite of the IARC Global Cancer Observatory. This new website offers in-depth insights into the economic impact of premature cancer-related mortality. Explore estimates of paid and unpaid productivity loss across 185 countries, categorized by sex and age group for 2022.

Visit the website: https://gco.iarc.who.int/economics/productivity_loss/

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The International Agency for Research on Cancer (IARC) is part of the World Health Organization. Its mission is to coordinate and conduct research on the causes of human cancer, the mechanisms of carcinogenesis, and to develop scientific strategies for cancer control. The Agency is involved in both epidemiological and laboratory research and disseminates scientific information through publications, meetings, courses, and fellowships. If you wish your name to be removed from our press release emailing list, please write to terrassev@iarc.who.int.