

Global, Regional, and National Cancer Incidence, Mortality, Years of Life Lost, Years Lived With Disability, and Disability-Adjusted Life-Years for 29 Cancer Groups, 1990 to 2017: A Systematic Analysis for the Global Burden of Disease Study

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Abstract

Importance:

Cancer and other noncommunicable diseases (NCDs) are now widely recognized as a threat to global development. The latest United Nations high-level meeting on NCDs reaffirmed this observation and also highlighted the slow progress in meeting the 2011 Political Declaration on the Prevention and Control of Noncommunicable Diseases and the third Sustainable Development Goal. Lack of situational analyses, priority setting, and budgeting have been identified as major obstacles in achieving these goals. All of these have in common that they require information on the local cancer epidemiology. The Global Burden of Disease (GBD) study is uniquely poised to provide these crucial data.

Objective:

To describe cancer burden for 29 cancer groups in 195 countries from 1990 through 2017 to provide data needed for cancer control planning.

Evidence Review:

We used the GBD study estimation methods to describe cancer incidence, mortality, years lived with disability, years of life lost, and disability-adjusted life-years (DALYs). Results are presented at the national level as well as by Socio-demographic Index (SDI), a composite indicator of income, educational attainment, and total fertility rate. We also analyzed the influence of the epidemiological vs the demographic transition on cancer incidence.

Findings:

In 2017, there were 24.5 million incident cancer cases worldwide (16.8 million without nonmelanoma skin cancer [NMSC]) and 9.6 million cancer deaths. The majority of cancer DALYs came from years of life lost (97%), and only 3% came from years lived with disability. The odds of developing cancer were the lowest in the low SDI quintile (1 in 7) and the highest in the high SDI quintile (1 in 2) for both sexes. In 2017, the most common incident cancers in men were NMSC (4.3 million incident cases); tracheal, bronchus, and lung (TBL) cancer (1.5 million incident cases); and prostate cancer (1.3 million incident cases). The most common causes of cancer deaths and DALYs for men were TBL cancer (1.3 million deaths and 28.4 million DALYs), liver cancer (572 000 deaths and 15.2 million DALYs), and stomach cancer (542 000 deaths and 12.2 million DALYs). For women in 2017, the most common incident cancers were NMSC (3.3 million incident cases), breast cancer (1.9 million incident cases), and colorectal cancer (819 000 incident cases). The

leading causes of cancer deaths and DALYs for women were breast cancer (601 000 deaths and 17.4 million DALYs), TBL cancer (596 000 deaths and 12.6 million DALYs), and colorectal cancer (414 000 deaths and 8.3 million DALYs).

Conclusions and Relevance:

The national epidemiological profiles of cancer burden in the GBD study show large heterogeneities, which are a reflection of different exposures to risk factors, economic settings, lifestyles, and access to care and screening. The GBD study can be used by policy makers and other stakeholders to develop and improve national and local cancer control in order to achieve the global targets and improve equity in cancer care.