Estimate 2018: Cancer Incidence in Brazil

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Since 1995, the *Instituto Nacional de Câncer José Alencar Gomes da Silva* (INCA, José Alencar Gomes da Silva National Cancer Institute) has published its Cancer Estimate. Until 2003, the report included the estimated cancer mortality data. However, after those data came to be included in the Brazilian National Mortality Database, which is updated annually, the INCA mortality estimates became superfluous.

In 2000, the INCA estimate began to include a state-by-state breakdown of all new cancer cases. In 2001, it also began to include estimates for each of the state capitals. To date, Brazil is the only Latin-American country that systematically publishes separate cancer estimates for its regions, states, and major cities. Since 2006, the INCA Cancer Estimate has been published on a biennial basis.

The INCA Cancer Estimate delineates the current situation of new cases of cancer, providing managers, health care facilities, universities, research centers, scientific societies, and others with information on the impact and profile of the disease in the population of Brazil.

The INCA estimate of new cancer cases presents, in an unprecedented way, the age-adjusted incidence rates, a measure aimed at eliminating the impact of the age distribution of populations, thus allowing regional and international comparisons.

It is estimated that, in the 2018-2019 biennium, there will be 600,000 new cases of cancer in Brazil. Excluding cases of non-melanoma skin cancer (approximately 170,000 cases), there will be 420,000 new cancer cases. The most common cancers will be prostate cancer and female breast cancer, which will likely affect an estimated 68,000 and 60,000 men and women, respectively. With the exception of non-melanoma skin cancer, the most common cancers in men will likely be prostate, lung, colorectal, stomach, and oral cavity cancer (accounting for 31.7%, 8.7%, 8.1%, 6.3%, and 5.2% of cases, respectively), whereas, among women, breast, colorectal, cervical, lung, and thyroid cancer will likely account for 29.5%, 9.4%, 8.1%, 6.2%, and 4.0% of cancer cases, respectively.

Although the estimates presented for Brazil reflect a profile similar to that of developed countries, however, the consistently high rates of infection-related cancers are more characteristic of developing countries. That mixed profile reflects regional inequalities that are specific to Brazil, ranging from differences in life expectancy to differences in socioeconomic conditions, access to health care services for timely diagnosis, and availability of appropriate treatment.

The analysis of the distribution of the incidence of cancer by geographic region shows that 70% of new cancer cases occur in the southern and southeastern regions. The pattern of cancer incidence in those regions resembles that reported for developed countries, where prostate, female breast, lung, and colorectal cancer are the predominant types. It is of note that there is a high incidence of lung cancer in the southern region of the country, especially in the state of Rio Grande do Sul. The incidence of cancer is lowest in the northern region, although the overall pattern in the region resembles that seen in the least developed countries, the cancers with the highest incidence being cancer of the cervix uteri and stomach cancer. In the states of Amazonas, Amapá, and Maranhão, the incidence of cancer of the cervix uteri is similar to that reported for the least developed countries.

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Overall, age-adjusted cancer incidence rates in men (217.27 cases/100,000 population) and women (191.78 cases/100,000 population) are considered intermediate and comparable to those reported for other developing countries. However, there is wide regional variation. In the more developed regions of Brazil (the southern, southeastern, and central-west regions), prostate, colorectal, and lung cancer predominate in men, the age-adjusted incidence rates of prostate cancer being highest, similar to those reported for the most developed regions of the world, in the southern and central-west regions. It is quite probable that, as in developed countries, these data reflect "overdiagnosis" rather than real increases. In the southern, southeastern, and central-west regions, the incidence rates of colorectal cancer are similar to the world average, albeit higher that that estimated for South America as a whole. It is noteworthy that esophageal cancer is one of the most common types of cancer in the southern region, which is not the case in the other regions of the country. In the less developed (northern and northeastern) regions of the country, prostate cancer is also the most common type of cancer, although stomach cancer is among the three most common cancers, with age-adjusted rates similar to those reported for less developed countries. Stomach cancer is the second and third leading cancer diagnosis in the northern and northeastern regions, respectively.

The regional inequalities in Brazil are more pronounced among women, the burden of preventable and curable cancers being higher in the less developed regions. The northern region is the only region of Brazil where cancer of the cervix uteri has a higher incidence, with age-adjusted rates well above the world average and similar to those reported for Central America. In the northeastern region, breast cancer has the highest incidence, although the age-adjusted rates of cancer of the cervix uteri in the region are higher than the world average and similar to those reported for the less developed regions. The southern and southeastern regions have a very different profile, breast, colorectal, and lung cancer being the most common, a profile closer to that of developed countries.

The same analysis could be applied at the state level, at which there are also inequalities. In the state of Amazonas, the incidence of cancer of the cervix uteri is similar to that reported for eastern Africa, one of the least developed regions of the world. The states of Amapá, Maranhão, and Tocantins also have profiles similar to those of parts of Africa the slightly more developed regions (southern and central Africa). In addition, all of the states in the northern, northeastern, and central-west regions (except the Federal District of Brasilia) have incidence profiles similar to those of the least developed countries. Only the states in the southeastern region have profiles comparable to those of countries that are more developed.

Estimation is an essential management tool for the design and organization of cancer care, as well as for defining strategies for coordinated interventions to target the main risk factors. It is fundamental that we deal with the issue of premature cancer death and the occurrence of preventable cases of cancer. Surveillance is a key component of the effective, efficient planning of cancer control, as well as for the monitoring and evaluation of its performance. Only the use of all available instruments will make it possible to meet the goals set by the World Health Organization to cope with cancer: to prevent what is preventable, avoiding and reducing exposure to risk factors; to cure what is curable, with early detection and strategies for diagnosis and treatment; to relieve pain and improve quality of life, with palliative care; and to manage for success, strengthening health care management at the national level by monitoring and evaluating training strategies.

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