based on the primary tumor’s size and whether it has spread to other areas of the body. A number of different staging systems are used to classify tumors. The TNM staging system assesses tumors in three ways: extent of the primary tumor (T), absence or presence of regional lymph node involvement (N), and absence or presence of distant metastases (M). Once the T, N, and M are determined, a stage of I, II, III, or IV is assigned, with stage I being early and stage IV being advanced disease. A different system of summary staging (in situ, local, regional, and distant) is used for descriptive and statistical analysis of tumor registry data. If cancer cells are present only in the layer of cells where they developed and have not spread, the stage is in situ. If cancer cells have penetrated the original layer of tissue, the cancer is invasive. (For a description of the other summary stage categories, see Five-year Relative Survival Rates by Stage at Diagnosis, 1999-2006, page 17.) As the molecular properties of cancer have become better understood, prognostic models have been developed for some cancer sites that incorporate biological markers and genetic features in addition to anatomical characteristics.

What Are the Costs of Cancer?

The National Institutes of Health estimates overall costs of cancer in 2010 at $263.8 billion: $102.8 billion for direct medical costs (total of all health expenditures); $20.9 billion for indirect morbidity costs (cost of lost productivity due to illness); and $140.1 billion for indirect mortality costs (cost of lost productivity due to premature death).

Lack of health insurance and other barriers prevents many Americans from receiving optimal health care. According to the US Census Bureau, almost 51 million Americans were uninsured in 2009; almost one-third of Hispanics (32%) and one in 10 children (17 years and younger) had no health insurance coverage. Uninsured patients and those from ethnic minorities are substantially more likely to be diagnosed with cancer at a later stage, when treatment can be more extensive and more costly. For more information on the relationship between health insurance and cancer, see Cancer Facts & Figures 2008, Special Section, available online at cancer.org/statistics.

Age-adjusted Cancer Death Rates,* Females by Site, US, 1930-2007

*Per 100,000, age adjusted to the 2000 US standard population.

Note: Due to changes in ICD coding, numerator information has changed over time. Rates for cancer of the liver, lung and bronchus, and colon and rectum are affected by these changes.


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