

Lung cancer death rates continue to fall, helping the decrease in overall cancer death rates

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The Annual Report to the Nation on the Status of Cancer, covering the period 1975, showed death rates for lung cancer, which accounts for more than one in four cancer deaths, dropping at a faster pace than in previous years. The recent larger drop in lung cancer deaths is likely the result of decreased cigarette smoking prevalence over many years, and is now being reflected in mortality trends. The lung cancer death rate decline, as well as declines in colorectal, breast, and prostate cancer death rates, has also helped drive decreases in death rates for all cancers types combined, a trend that began about 20 years ago. The decreased death rates for these four cancers accounted for more than two-thirds of the overall reduction in cancer death rates in the period 2001-2010. The report showed, however, that death rates increased for some cancers, including cancers of the liver and pancreas for both sexes, cancers of the uterus in women, and, in men only, melanoma of the skin and cancers of the soft tissue in this 10 year period.

The special feature of this year's Report highlights the prevalence of other disease conditions, (diabetes, chronic lung disease, cardiovascular disease, and 13 others) in [cancer](#) patients over 65 years of age, and how they affect survival. Studying comorbid conditions is especially important because cancer is primarily a disease of aging and the prevalence of comorbidities also increases with age. Comorbidity is defined as having two or more medical conditions at the same time. The report shows that one-third of patients in this study population have

comorbidities, with a higher frequency of comorbidities in patients with lung or colorectal cancer, and that survival is influenced by the presence of other medical conditions as well as the type of cancer, stage at diagnosis, and age.

The Report, produced annually since 1998, is co-authored by researchers from the National Cancer Institute (NCI) which is part of the National Institutes of Health; the American Cancer Society (ACS); the Centers for Disease Control and Prevention (CDC); and the North American Association of Central Cancer Registries (NAACCR). It appeared online in the journal *Cancer* on Dec. 16, 2013.

Death Rates

The latest Report includes mortality data through 2010, the most recent year for which complete data are available. It found that from 2001 through 2010, [death rates](#) for all cancers combined decreased by 1.8 percent per year among men and by 1.4 percent per year among women. Death rates among children 14 years of age and younger decreased by 1.9 percent per year. Death rates among men decreased for 11 of the 17 most common cancers (lung, prostate, colon and rectum, leukemia, non-Hodgkin lymphoma, esophagus, kidney, stomach, myeloma, oral cavity and pharynx, and larynx) and increased for melanoma of the skin, soft tissue cancers, and cancers of the pancreas and liver. During the same 10 year period, death rates among women decreased for 15 of the 18 most common cancers (lung, breast, colon and rectum, ovary, leukemia, non-Hodgkin lymphoma, brain, myeloma, kidney, stomach, cervix, bladder, esophagus, oral cavity and pharynx, and gallbladder) and increased for cancers of the uterus, pancreas, and liver.

The Report found that [lung cancer](#) death rates for men dropped 1.9 percent per year during the period 1993-2005 and fell by 2.9 percent per year from 2005-2010. For women, rates declined 1.4 percent per year

during the period 2004-2010, which was a turnaround from an increase of 0.3 percent per year during the period 1995-2004. These shifts have been attributed to many factors that have reduced the prevalence of cigarette smoking in the United States. Of particular note is the smaller drop in lung cancer death rates for women, most probably due to a later decline in cigarette smoking rates among females.

"The sustained fall in death rates for most cancers is an important indicator of our success in controlling this large set of complex diseases but is not as fast as we'd like," said NCI Director Harold Varmus, M.D. "In addition, the Report emphasizes the need to consider the entire health status of [cancer patients](#) since many have other significant medical conditions that may affect their survival."

Incidence Rates

Cancer incidence rates, which track new cases, can vary based on a number of factors and are considered an important measure of disease burden, whereas mortality is the primary measure of progress in cancer control. Incidence rates may presage changes in mortality outcomes however. During the period of 2001-2010, overall cancer incidence rates decreased by 0.6 percent per year among men, were stable among women, and increased by 0.8 percent per year among children (ages 0 through 14 years), continuing trends from recent Annual Reports. During the 2001-2010 time period, incidence rates decreased for six of the 17 most common cancers among men (prostate, lung, colon and rectum, stomach, larynx, and brain and other nervous systems) and increased for eight others (kidney, pancreas, liver, non-Hodgkin lymphoma, thyroid, leukemia, melanoma of the skin, and myeloma). Among women, incidence rates decreased for six of the 18 most common cancers (colon and rectum, bladder, cervix, oral cavity and pharynx, ovary, and stomach), and increased for eight others (thyroid, melanoma of the skin, kidney, pancreas, leukemia, liver, myeloma and

uterus).

"Similar to death rates, the overall decrease in cancer incidence rates among men was driven in part by declines in lung cancer, mainly reflecting the success of tobacco control interventions," said John R. Seffrin, Ph.D., chief executive officer of the American Cancer Society. "We are particularly heartened to see that in the most recent time period, from 2005 to 2010, lung cancer incidence rates dropped among women. Nonetheless, lung cancer remains by far the leading cause of cancer death in both men and women."

Comorbidities and Cancer

The special feature section of the report discusses the prevalence of comorbidities among Medicare beneficiaries with lung, colorectal, breast, and [prostate cancer](#) and how these conditions influence survival due to a person's cancer and other illnesses. Forty percent of patients 66 years of age or older, with any of these four cancers, had at least one comorbidity.

Measures of comorbidity can contribute to understanding how multiple diseases work together to affect outcomes. For cancer patients, incorporating comorbidity measures into treatment planning may lead to better decisions about the potential risks and benefits of treatment options.

For this analysis, the authors linked cancer registry data from NCI with Medicare claims data that identified the presence of comorbidities in patients ages 66 or older, one year prior to their diagnosis of cancer. Cancer stage was included in this survival model because patients with late-stage cancer have higher death rates than those diagnosed with earlier stage cancer, even after accounting for comorbidity.

"More and more Americans are winning the battle against cancer and are living long, healthy, and productive lives," said CDC Director Tom Frieden, M.D. "However, cancer patients with underlying health conditions, such as diabetes, have special challenges. It's critical for health care providers to have the full picture of their patients' health so they can provide the best treatment possible for the patient overall, and for their cancer."

The cancers with a high prevalence of comorbidities were lung cancer (52.9 percent) and colorectal cancer (40.7 percent), while the prevalence of comorbidities for those with breast cancer (32.2 percent) or prostate cancer (30.5 percent) was similar to that seen in non-cancer patients (31.8 percent). Sixteen comorbidities were identified in patients in the year prior to cancer diagnosis, including acute myocardial infarction (heart attack), AIDS, stroke, chronic kidney failure, chronic hepatitis, and others. The four most common comorbidities include diabetes, chronic obstructive pulmonary disease, congestive heart failure, and cerebrovascular disease.

Some of the more notable associations of comorbidities and survival included:

- For women with breast cancer diagnosed at an early stage of the disease, 5-year survival varied by age and comorbidity level. For example, for women ages 66-74 with early stage disease, the probability of death for low or moderate comorbidity levels was almost double the probability of death compared to women with no comorbidity, while for women with severe comorbidity levels, the likelihood of dying was nearly triple compared to women with no comorbidity. Comorbidity levels were associated with a similar impact on 5-year survival among men ages 66-74 with prostate cancer diagnosed at an early stage. By contrast, comorbidity levels had relatively little or modest impact on the

survival of women diagnosed with advanced breast cancer or men with advanced prostate cancer.

- For colorectal cancer, comorbidity and age were associated with decreased 5-year survival among men and women with early stage disease, but not among patients with advanced disease.
- For lung cancer, the influence of comorbidities on survival was relatively small, probably because prognosis is often poor, even at early stages of the disease.

"Cancer rates are edging down for both new cases and for deaths, which is definitely good news," noted NAACCR director Betsy Kohler. "But there are still too many cancer types that require a rededication of effort to help get those rates reversed so that we're showing real progress for all forms of cancer."

More information: Edwards BK, et al. Annual Report to the Nation on the Status of Cancer, 1975-2010, Featuring Prevalence of Comorbidity and Impact on Survival among Persons with Lung, Colorectal, Breast or Prostate Cancer. Cancer. Online Dec. 16, 2013. DOI: [10.1002/cncr.28509](https://doi.org/10.1002/cncr.28509). Online at www.wileyonlinelibrary.com/journal/cancer-report2014.

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