More Than 1.5 Million Cancer Deaths Averted during Two Decades of Dropping Mortality

American Cancer Society's Annual Cancer Statistics Report Estimates New Cases, Deaths for 2015

Dec.30. 2014–The American Cancer Society's annual cancer statistics report finds that a 22% drop in cancer mortality over two decades led to the avoidance of more than 1.5 million cancer deaths that would have occurred if peak rates had persisted. And while cancer death rates have declined in every state, the report finds substantial variation in the magnitude of these declines, generally with the states in the south showing the smallest decline and in the Northeast the largest decline.

Each year, the American Cancer Society compiles the most recent data on cancer incidence, mortality, and survival based on incidence data from the National Cancer Institute and the Centers for Disease Control and Prevention, and mortality data from the National Center for Health Statistics. The data will be disseminated in two reports: Cancer Statistics 2015, to be published in *CA: A Cancer Journal for Clinicians*, and its companion, consumer-friendly publication, *Cancer Facts & Figures 2015.* The reports also estimate the number of new cancer cases and deaths expected in the United States in the current year.

Largely driven by rapid increases in lung cancer deaths among men as a consequence of the tobacco epidemic, the overall cancer death rate rose during most of the 20th century, peaking in 1991. The subsequent, steady decline in the cancer death rate is the result of fewer Americans smoking, as well as advances in cancer prevention, early detection, and treatment.

Mortality

- During the most recent five years for which data are available (2007-2011), the average annual decline in cancer death rates was slightly larger among men (1.8%) than women (1.4%). These declines are driven by continued decreases in death rates for the four major cancer sites: lung, breast, prostate, and colon.
- Lung cancer death rates declined 36% between 1990 and 2011 among males and 11% between 2002 and 2011 among females due to reduced tobacco use.
- Death rates for breast cancer (among women) are down more than one-third (35%) from peak rates, while prostate and colorectal cancer death rates are each down by nearly half (47%).
- The magnitude of the decline in overall cancer mortality between 1991 and 2011 varied by state. The smallest declines were generally in the South, where drops were about 15%. They were largest in the Northeast. For example, there were declines of 25% to 30% in Maryland, New Jersey, Massachusetts, New York, and Delaware. As a result, a total of 29,000 cancer deaths were averted in 2011 in these states.

Estimates for the current year

- The report estimates there will be 1,658,370 new cancer cases and 589,430 cancer deaths in the United States in 2015.
- Prostate, lung, and colorectal cancers will account for about one-half of all cases in men, with prostate cancer alone accounting for about one-quarter of new diagnoses.
- The three most commonly diagnosed types of cancer among women in 2015 will be breast, lung, and colorectal cancer, accounting for one-half of all cases in women. Breast cancer alone is expected to account for 29% of all new cancers among women in the U.S.
- The report estimates that 589,430 Americans will die from cancer this year, corresponding to about 1,600 deaths per day.
- The most common causes of cancer death are lung, prostate, and colorectal cancer in men and lung, breast, and colorectal cancer in women. These four cancers account for almost one-half of all cancer deaths, with more than one-quarter (27%) of all cancer deaths due to lung cancer.

Additional findings

- During the past five years for which there are data (2007-2011), the overall cancer incidence rate remained stable in women and declined by 1.8% per year in men.
- The decrease in incidence in men is driven by the rapid declines in colorectal (3.6% per year), lung (3.0% per year), and prostate (2.1% per year) cancers.
- While women in the U.S. have seen similar drops in colorectal and lung cancers, breast cancer incidence rates have flattened, and there's been a dramatic rise in thyroid cancer incidence rates (an average of 4.5% per year from 2007 to 2011).

"The continuing drops we're seeing in cancer mortality are reason to celebrate, but not to stop," said John R. Seffrin, PhD, chief executive officer of the American Cancer Society. "Cancer was responsible for nearly one in four deaths in the United States in 2011, making it the second leading cause of death overall. It is already the leading cause of death among adults aged 40 to 79, and is expected to overtake heart disease as the leading cause of death among all Americans within the next several years. The change may be inevitable, but we can still lessen cancer's deadly impact by making sure as many Americans as possible have access to the best tools to prevent, detect, and treat cancer."

Special Section: Breast Carcinoma In Situ

Each year, *Cancer Facts & Figures* includes a Special Section that focuses on a specific, timely cancer topic. This year, the report highlights breast carcinoma in situ. An estimated 60,290 new cases of breast carcinoma in situ are expected to be diagnosed in 2015, accounting for about one in five breast tumors diagnosed in women. Although in situ breast cancer is a relatively common diagnosis, it is not as widely known or understood as invasive breast cancer.

The term "carcinoma in situ" describes abnormal cells that have not invaded nearby tissues, but that look very similar to cells of invasive carcinoma when viewed under a microscope. For many years, it was assumed that these cells were potentially able to become invasive, and that in the absence of treatment, they would eventually progress to cancer. More recent research indicates that the transition from normal tissue to carcinoma in situ to invasive carcinoma involves a series of molecular changes that are more complex and subtle than the older view based on microscopic appearances. Long-term follow-up studies of patients with carcinoma in situ also find that even without treatment, not all patients develop invasive cancer.

The vast majority (83%) of in situ breast cancers will be ductal carcinoma in situ (DCIS). DCIS refers to abnormal cells lining the breast duct that appear similar to those of invasive breast cancers, but are still within the tissue layer of origin. It is most often detected by a mammogram. While DCIS cannot spread to other organs and cause serious illness or death, it has the potential if left untreated to evolve into invasive cancer and is considered a true cancer precursor. Studies of women with DCIS that was untreated because it was originally misclassified as benign found that 20 to 53% were eventually diagnosed with an invasive breast cancer.

Lobular carcinoma in situ (LCIS) refers to cells that look like cancer cells growing within the walls of the lobules of the milk-producing glands of the breast. LCIS is not generally thought to be a precursor of invasive cancer, but is considered a marker for increased risk of developing invasive breast cancer.

The authors say they hope that the information in the Special Section will help patients facing the disease, as well as friends, family, and others who can provide support and perspective for women who are newly diagnosed and those living after a diagnosis of DCIS or LCIS.

Sources: American Cancer Society. Cancer Facts & Figures 2015. Atlanta: American Cancer Society; 2015; Cancer Statistics 2015, CA Cancer Journal for Clinicians doi: 10.3322/caac.21254 Published online ahead of print at cacancerjournal.com

---