

# The state of oncology in 2014 and the role of palliative care for advanced and metastatic malignancies

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In 1971, when United States President Richard Nixon declared war on cancer, he stated, “The time has come in America when the same kind of concentrated effort that split the atom and took man to the moon should be turned toward conquering this dread disease” (1). In that year, approximately \$250 million was spent on cancer research and 337,000 patients died of malignancies. In 2014, an estimated 585,720 cancer deaths are projected to occur in the United States (2), and the National Institutes of Health now estimates that the annual overall cost associated with cancer to be \$216.6 billion, with \$86.6 billion for direct health care costs and \$130 billion for loss of productivity due to morbidity and mortality (3).

Despite the war on cancer and the tremendous dollar expenditures on the disease, the number of new cases of most forms of cancer has increased annually over the last century (2,4) (*Table 1*). Furthermore, despite improvements in surgical techniques and decreased surgical morbidity, despite the adoption of radiation therapy as definitive therapy for malignancies, despite the introduction of chemotherapeutic agents and now targeted and immunotherapies, and despite advances in imaging with the advent of CT scans, MRI scans, and PET/CT scans, there has been limited progress in the war on cancer.

Although striking improvements in survival and great success have been achieved for several hematologic malignancies and for a number of pediatric malignancies, cancer death rates for most common adult malignancies have largely remained flat in both men (*Figure 1A*) and women (*Figure 1B*) (3). In fact, age-adjusted overall mortality from cancer actually increased 6% from 1970 to

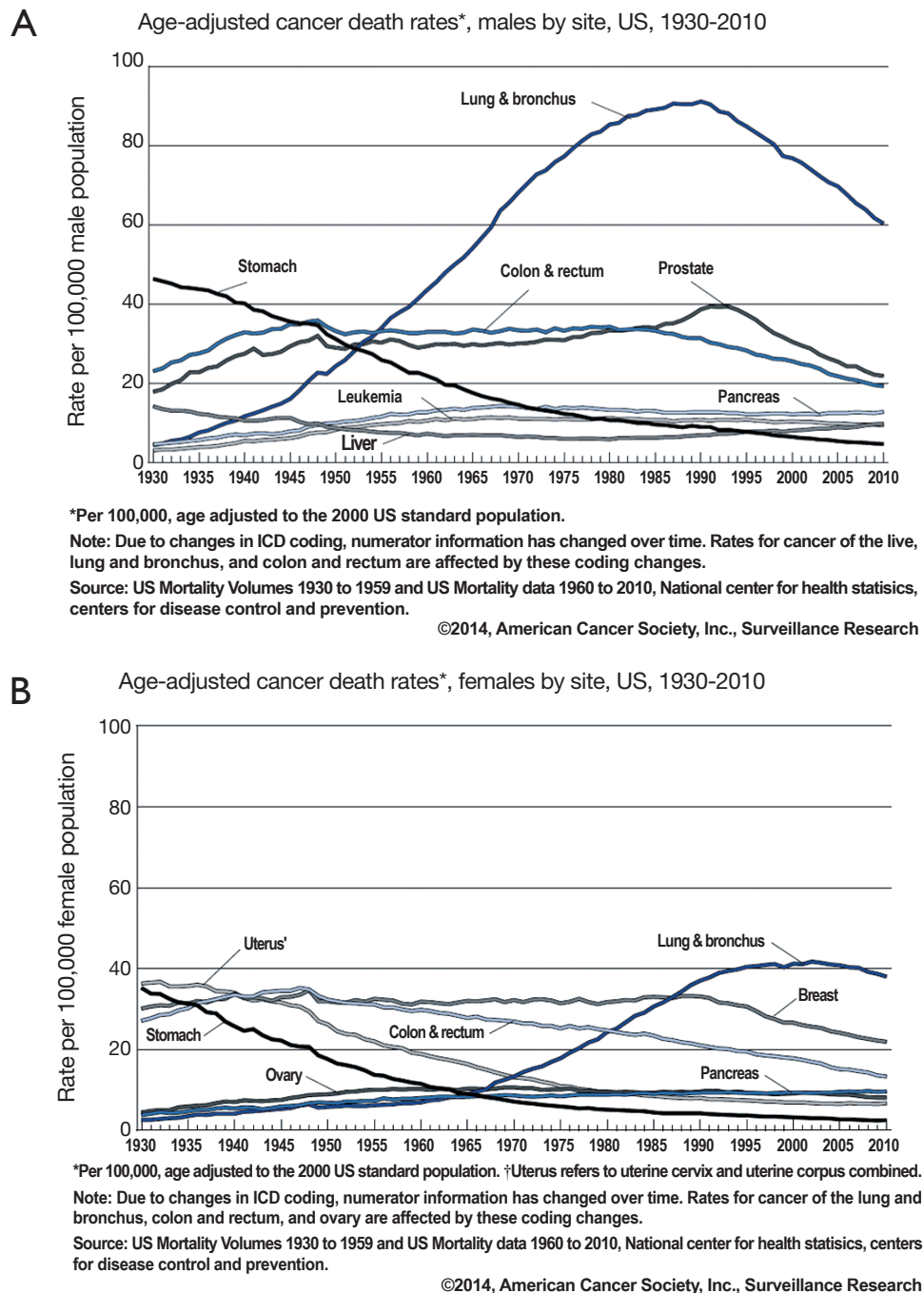
**Table 1** Estimated number of new cases of cancer in the United States in 1971 and 2014

	1971	2014
Total cases	635,000	1,665,540
Prostate cancer	35,000	233,000
Breast cancer	70,000	235,030
Lung cancer	71,000	224,210
Colorectal cancer	75,000	136,830

Adapted, in part, from Siegel *et al.* (2) and Silverberg *et al.* (4).

1994 during the first two decades after the declaration of the war on cancer (5).

By around 1991, the cancer death rates in the United States began to steadily decline. In fact, the combined cancer death rate (deaths per 100,000 population) peaked at 215.1 in 1991 and were down to 171.8 in 2010 (2). Much of the improvements over the past two decades have been attributed to an improved understanding of cancer biology and causal factors of cancer, advances in screening and early detection, increased emphasis on preventative care, advances in cancer therapeutics and increasing use of multimodality cancer treatment, and comprehensive tobacco control (2). Overall, however, when adjusting for the size and age of the United States population, the cancer death rate has decreased by only about 5% since 1950 (6). This is in striking contrast to death rates from stroke, cardiovascular disease, and flu and pneumonia, three of the other leading causes of death in the United States and worldwide, which have had death rates fall by 74%,



**Figure 1** Age-adjusted death rates. Age-adjusted cancer death rates in the United States per 100,000 men (A) and women (B) from 1930-2010. Used with permission from the American Cancer Society (3).

64%, and 58%, respectively, from 1975 through 2006 (6). Thankfully, however, between 2006 and 2010, cancer death rates decreased by 1.8% per year in men and 1.4% per year in women, a faster decline than other time intervals since 1991 (2).

Despite recent reductions in the cancer death rates and the highly encouraging projection for continuing reductions in future cancer mortality rates, many patients today still present with advanced and metastatic cancer that is not curable and that is associated with a high

symptomatic disease burden (7). Palliative care has emerged as an indispensable component of cancer care to improve the quality of life of patients and their families who face life-threatening malignancies through the prevention and treatment of pain and other physical, psychosocial, and spiritual problems associated with cancer (8). For patients with advanced malignancies, palliative care can improve quality of life, reduce the use of ineffective therapies given during the final days to weeks of life in patients with terminal malignancies, assist patients and their families with psychosocial support and decision making, and reduce the burden on family caregivers (9-11).

Palliative care can also allow for better optimization of anticancer therapies and improve clinical outcomes. Numerous studies, including prospective data from multi-institutional oncology collaborative groups (12), have demonstrated that poor quality of life correlates with significantly shorter survival times for patients with advanced malignancies (12,13). In addition to symptomatic relief and improvements in quality of life, early initiation of palliative care can prolong patient survival (14). Given the importance of palliative care and the broad scope of palliative services necessary to deliver optimal care for patients with cancer, this issue of *Annals of Palliative Medicine (APM)* is dedicated to palliative care for patients with advanced and metastatic malignancies.

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