

SECTION 1 NEOPLASTIC DISORDERS

99 Approach to the Patient with Cancer

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The application of current treatment techniques (surgery, radiation therapy, chemotherapy, and biologic therapy) results in the cure of nearly two of three patients diagnosed with cancer. Nevertheless, patients experience the diagnosis of cancer as one of the most traumatic and revolutionary events that has ever happened to them. Independent of prognosis, the diagnosis brings with it a change in a person's self-image and in his or her role in the home and workplace. The prognosis of a person who has just been found to have pancreatic cancer is the same as the prognosis of the person with aortic stenosis who develops the first symptoms of congestive heart failure (median survival, ~8 months). However, the patient with heart disease may remain functional and maintain a self-image as a fully intact person with just a malfunctioning part, a diseased organ ("a bum ticker"). By contrast, the patient with pancreatic cancer has a completely altered self-image and is viewed differently by family and anyone who knows the diagnosis. He or she is being attacked and invaded by a disease that could be anywhere in the body. Every ache or pain takes on desperate significance. Cancer is an exception to the coordinated interaction among cells and organs. In general, the cells of a multicellular organism are programmed for collaboration. Many diseases occur because the specialized cells fail to perform their assigned task. Cancer takes this malfunction one step further. Not only is there a failure of the cancer cell to maintain its specialized function, but it also strikes out on its own; the cancer cell competes to survive using natural mutability and natural selection to seek advantage over normal cells in a recapitulation of evolution. One consequence of the traitorous behavior of cancer cells is that the patient feels betrayed by his or her body. The cancer patient feels that he or she, and not just a body part, is diseased.

THE MAGNITUDE OF THE PROBLEM

No nationwide cancer registry exists; therefore, the incidence of cancer is estimated on the basis of the National Cancer Institute's Surveillance, Epidemiology, and End Results (SEER) database, which tabulates cancer incidence and death figures from 13 sites, accounting for about 10% of the U.S. population, and from population data from the U.S. Census Bureau. In 2014, 1.665 million new cases of invasive cancer (855,220 men, 810,320 women) were diagnosed, and 585,720 persons (310,010 men, 275,710 women) died from cancer. The percent distribution of new cancer cases and cancer deaths by site for men and women is shown in [Table 99-1](#). Cancer incidence has been declining by about 2% each year since 1992. Cancer is the cause of one in four deaths in the United States.

The most significant risk factor for cancer overall is age; two-thirds of all cases were in those older than age 65 years. Cancer incidence increases as the third, fourth, or fifth power of age in different sites. For the interval between birth and age 49 years, 1 in 29 men and 1 in 19 women will develop cancer; for the interval between ages 50 and 59 years, 1 in 15 men and 1 in 17 women will develop cancer; for the interval between ages 60 and 69 years, 1 in 6 men and 1 in 10 women will develop cancer; and for people age 70 and older, 1 in 3 men and 1 in 4 women will develop cancer. Overall, men have a 44% risk of developing cancer at some time during their lives; women have a 38% lifetime risk.


TABLE 99-1 DISTRIBUTION OF CANCER INCIDENCE AND DEATHS FOR 2014

Sites	Male		Female		
	%	Number	%	Number	
Cancer Incidence					
Prostate	27	233,000	Breast	29	232,670
Lung	14	116,000	Lung	13	108,210
Colorectal	8	71,830	Colorectal	8	65,000
Bladder	7	56,390	Endometrial	6	52,630
Melanoma	5	43,890	Thyroid	6	47,790
Kidney	4	39,140	Lymphoma	4	32,530
Lymphoma	4	38,270	Melanoma	4	32,210
Oral cavity	4	30,220	Kidney	3	24,780
Leukemia	4	30,100	Pancreas	3	22,890
Liver	3	24,600	Leukemia	3	22,280
All others	20	171,780	All others	21	169,330
All sites	100	855,220	All sites	100	810,320
Cancer Deaths					
Lung	28	86,930	Lung	26	72,330
Prostate	10	29,480	Breast	15	40,000
Colorectal	8	26,270	Colorectal	9	24,040
Pancreas	7	20,170	Pancreas	7	19,420
Liver	5	15,870	Ovary	5	14,270
Leukemia	5	14,040	Leukemia	4	10,050
Esophagus	4	12,450	Endometrial	3	8,590
Bladder	4	11,170	Lymphoma	3	8,520
Lymphoma	3	10,470	Liver	3	7,130
Kidney	3	8,900	CNS	2	6,230
All others	23	74,260	All others	23	65,130
All sites	100	310,010	All sites	100	275,710

Source: From R Siegel et al: Cancer statistics, 2014. *CA Cancer J Clin* 64:9, 2014.

Cancer is the second leading cause of death behind heart disease. Deaths from heart disease have declined 45% in the United States since 1950 and continue to decline. Cancer has overtaken heart disease as the number one cause of death in persons younger than age 85 years. Incidence trends over time are shown in [Fig. 99-1](#). After a 70-year period of increase, cancer deaths began to decline in 1990–1991 ([Fig. 99-2](#)). Between 1990 and 2010, cancer deaths decreased by 21% among men and 12.3% among women. The magnitude of the decline is illustrated in [Fig. 99-3](#). The five leading causes of cancer deaths are shown for various populations in [Table 99-2](#). The 5-year survival for white patients was 39% in 1960–1963 and 69% in 2003–2009. Cancers are more often deadly in blacks; the 5-year survival was 61% for the 2003–2009 interval; however, the racial differences are narrowing over time. Incidence and mortality vary among racial and ethnic groups ([Table 99-3](#)). The basis for these differences is unclear.

CANCER AROUND THE WORLD

 In 2008, 12.7 million new cancer cases and 7.6 million cancer deaths were estimated worldwide, according to estimates of GLOBOCAN 2008, developed by the International Agency for Research on Cancer (IARC). When broken down by region of the world, ~45% of cases were in Asia, 26% in Europe, 14.5% in North America, 7.1% in Central/South America, 6% in Africa, and 1% in Australia/New Zealand ([Fig. 99-4](#)). Lung cancer is the most common cancer and the most common cause of cancer death in the world. Its