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Cancer Statistics, 2005

Ahmedin Jemal, DVM, PhD; Taylor Murray; Elizabeth Ward, PhD; Alicia Samuels, MPH; Ram C. Tiwari, PhD; Asma Ghafoor, MPH; Eric J. Feuer, PhD; Michael J. Thun, MD, MS

Dr. Jemal is Program Director, Cancer Occurrence, Department of Epidemiology and Surveillance Research, American Cancer Society, Atlanta, GA.

Mr. Murray is Manager, Surveillance Data Systems, Department of Epidemiology and Surveillance Research, American Cancer Society, Atlanta, GA.

Dr. Ward is Director, Surveillance Research, Department of Epidemiology and Surveillance Research, American Cancer Society, Atlanta, GA.

Ms. Samuels is Manager, Surveillance Information Services, Department of Epidemiology and Surveillance Research, American Cancer Society, Atlanta, GA.

Dr. Tiwari is Mathematical Statistician, Statistical Research and Applications Branch, Division of Cancer Control and Population Sciences, National Cancer Institute, Rockville, MD.

Ms. Ghafoor is Epidemiologist, Department of Epidemiology and Surveillance Research, American Cancer Society, Atlanta, GA.

Dr. Feuer is Branch Chief, Statistical Research and Applications Branch, Division of Cancer Control and Population Sciences, National Cancer Institute, Rockville, MD.

Dr. Thun is Vice-President, Department of Epidemiology and Surveillance Research, American Cancer Society, Atlanta, GA.

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ABSTRACT Each year, the American Cancer Society estimates the number of new cancer cases and deaths expected in the United States in the current year and compiles the most recent data on cancer incidence, mortality, and survival based on incidence data from the National Cancer Institute and mortality data from the National Center for Health Statistics. Incidence and death rates are age-standardized to the 2000 US standard million population. A total of 1,372,910 new cancer cases and 570,280 deaths are expected in the United States in 2005. When deaths are aggregated by age, cancer has surpassed heart disease as the leading cause of death for persons younger than 85 since 1999. When adjusted to delayed reporting, cancer incidence rates stabilized in men from 1995 through 2001 but continued to increase by 0.3% per year from 1987 through 2001 in women. The death rate from all cancers combined has decreased by 1.5% per year since 1993 among men and by 0.8% per year since 1992 among women. The mortality rate has also continued to decrease from the three most common cancer sites in men (lung and bronchus, colon and rectum, and prostate) and from breast and colorectal cancers in women. Lung cancer mortality among women has leveled off after increasing for many decades. In analyses by race and ethnicity, African American men and women have 40% and 20% higher death rates from all cancers combined than White men and women, respectively. Cancer incidence and death rates are lower in other racial and ethnic groups than in Whites and African Americans for all sites combined and for the four major cancer sites. However, these groups generally have higher rates for stomach, liver, and cervical cancers than Whites. Furthermore, minority populations are more likely to be diagnosed with advanced stage disease than are Whites. Progress in reducing the burden of suffering and death from cancer can be accelerated by applying existing cancer control knowledge across all segments of the population. (*CA Cancer J Clin* 2005;55:10–30.) © American Cancer Society, Inc., 2005.

INTRODUCTION

Cancer is a major public health problem in the United States and other developed countries. Currently, one in four deaths in the United States is due to cancer. In this article, we provide an overview of cancer statistics, including updated incidence, mortality, and survival rates and expected number of new cancer cases and deaths in 2005.

MATERIALS AND METHODS

Data Sources

Mortality data from 1930 to 2002 were obtained from the National Center for Health Statistics (NCHS).¹ Incidence data (1975 to 2001), 5-year relative survival rates, and data on lifetime probability of developing cancer

TABLE 1 Estimated New Cancer Cases and Deaths by Sex, United States, 2005*

	Estimated New Cases			Estimated Deaths		
	Both Sexes	Male	Female	Both sexes	Male	Female
All Sites	1,372,910	710,040	662,870	570,280	295,280	275,000
Oral cavity & pharynx	29,370	19,100	10,270	7,320	4,910	2,410
Tongue	7,660	5,050	2,610	1,730	1,120	610
Mouth	10,070	5,370	4,700	1,890	1,100	790
Pharynx	8,590	6,520	2,070	2,130	1,490	640
Other oral cavity	3,050	2,160	890	1,570	1,200	370
Digestive system	253,500	134,370	119,130	136,060	75,020	61,040
Esophagus	14,520	11,220	3,300	13,570	10,530	3,040
Stomach	21,860	13,510	8,350	11,550	6,770	4,780
Small intestine	5,420	2,840	2,580	1,070	580	490
Colon	104,950	48,290	56,660	56,290†	28,540	27,750
Rectum	40,340	23,530	16,810			
Anus, anal canal, & anorectum	3,990	1,750	2,240	620	230	390
Liver & intrahepatic bile duct	17,550	12,130	5,420	15,420	10,330	5,090
Gallbladder & other biliary	7,480	3,330	4,150	3,340	1,270	2,070
Pancreas	32,180	16,100	16,080	31,800	15,820	15,980
Other digestive organs	5,210	1,670	3,540	2,400	950	1,450
Respiratory system	184,800	102,420	82,380	168,140	93,990	74,150
Larynx	9,880	7,920	1,960	3,770	2,960	810
Lung & bronchus	172,570	93,010	79,560	163,510	90,490	73,020
Other respiratory organs	2,350	1,490	860	860	540	320
Bones & joints	2,570	1,480	1,090	1,210	670	540
Soft tissue (including heart)	9,420	5,530	3,890	3,490	1,910	1,580
Skin (excluding basal & squamous)	66,000	37,580	28,420	10,590	6,920	3,670
Melanoma-skin	59,580	33,580	26,000	7,770	4,910	2,860
Other nonepithelial skin	6,420	4,000	2,420	2,820	2,010	810
Breast	212,930	1,690	211,240	40,870	460	40,410
Genital system	321,050	241,570	79,480	59,920	31,010	28,910
Uterine cervix	10,370		10,370	3,710		3,710
Uterine corpus	40,880		40,880	7,310		7,310
Ovary	22,220		22,220	16,210		16,210
Vulva	3,870		3,870	870		870
Vagina & other genital, female	2,140		2,140	810		810
Prostate	232,090	232,090		30,350	30,350	
Testis	8,010	8,010		390	390	
Penis & other genital, male	1,470	1,470		270	270	
Urinary system	101,880	71,090	30,790	26,590	17,420	9,170
Urinary bladder	63,210	47,010	16,200	13,180	8,970	4,210
Kidney & renal pelvis	36,160	22,490	13,670	12,660	8,020	4,640
Ureter & other urinary organs	2,510	1,590	920	750	430	320
Eye & orbit	2,120	1,090	1,030	230	110	120
Brain & other nervous system	18,500	10,620	7,880	12,760	7,280	5,480
Endocrine system	27,650	7,550	20,100	2,370	1,080	1,290
Thyroid	25,690	6,500	19,190	1,490	630	860
Other endocrine	1,960	1,050	910	880	450	430
Lymphoma	63,740	33,050	30,690	20,610	10,930	9,680
Hodgkin disease	7,350	3,980	3,370	1,410	780	630
Non-Hodgkin lymphoma	56,390	29,070	27,320	19,200	10,150	9,050
Multiple myeloma	15,980	8,600	7,380	11,300	5,660	5,640
Leukemia	34,810	19,640	15,170	22,570	12,540	10,030
Acute lymphocytic leukemia	3,970	2,180	1,790	1,490	850	640
Chronic lymphocytic leukemia	9,730	5,780	3,950	4,600	2,520	2,080
Acute myeloid leukemia	11,960	6,530	5,430	9,000	5,040	3,960
Chronic myeloid leukemia	4,600	2,640	1,960	850	430	420
Other leukemia‡	4,550	2,510	2,040	6,630	3,700	2,930
Other & unspecified primary sites‡	28,590	14,660	13,930	46,250	25,370	20,880

*Rounded to the nearest 10; excludes basal and squamous cell skin cancers and in situ carcinomas except urinary bladder.

About 58,490 carcinoma in situ of the breast and 46,170 melanoma in situ will be newly diagnosed in 2005.

†Estimated deaths for colon and rectum cancers are combined.

‡More deaths than cases suggests lack of specificity in recording underlying causes of death on death certificates.

Source: Estimates of new cases are based on incidence rates from 1979 to 2001, National Cancer Institute's Surveillance, Epidemiology and End Results program, nine oldest registries. Estimates of deaths are based on data from US Mortality Public Use Data Tapes, 1969 to 2002, National Center for Health Statistics, Center for Disease Control and Prevention, 2004.


TABLE 2 Estimated New Cancer Cases for Selected Cancers by State, United States, 2005*

State	All Cases	Female Breast	Uterine Cervix	Colon & Rectum	Uterine Corpus	Leukemia	Lung & Bronchus	Melanoma of the Skin	Non-Hodgkin Lymphoma	Prostate	Urinary Bladder
AL	24,320	3,820	200	2,300	670	560	3,340	920	940	4,360	860
AK	1,930	260	†	210	60	50	220	80	90	310	100
AZ	23,880	3,760	200	2,500	500	620	2,870	1,300	1,060	3,900	1,200
AR	14,950	2,090	170	1,630	340	400	2,530	540	650	2,060	620
CA	135,030	21,170	1,090	14,070	4,250	3,380	15,150	5,440	5,700	25,010	6,380
CO	16,080	2,560	80	1,650	450	460	1,750	920	880	2,680	720
CT	16,920	2,720	220	1,680	500	400	1,950	690	730	3,360	860
DE	3,800	630	†	410	110	120	490	230	210	610	190
DC	2,820	520	†	340	170	50	310	80	90	610	190
FL	96,200	13,430	730	9,860	2,520	2,620	13,130	4,600	3,470	19,650	4,890
GA	35,650	5,850	360	3,480	890	820	4,800	1,610	1,380	5,660	1,530
HI	4,790	680	60	540	170	120	510	150	260	920	190
ID	5,490	940	60	540	170	150	630	380	210	1,150	340
IL	59,730	9,300	500	6,610	2,010	1,620	7,220	2,300	2,200	9,410	2,640
IN	31,900	4,600	170	3,410	1,010	820	4,410	1,460	1,410	4,890	1,390
IA	15,910	2,300	110	1,700	500	480	1,790	540	760	3,060	670
KS	12,930	1,990	80	1,570	390	350	1,630	540	650	2,060	720
KY	23,020	3,290	220	2,350	500	480	3,680	1,150	970	2,520	910
LA	23,280	3,870	220	2,580	500	540	3,090	770	1,060	3,440	770
ME	7,750	890	†	800	220	150	990	380	260	1,300	430
MD	25,450	4,390	220	2,760	780	680	3,210	1,070	1,030	4,210	1,150
MA	33,030	4,910	110	3,560	1,010	770	4,010	1,530	1,260	5,350	1,870
MI	50,220	7,210	340	4,830	1,450	1,250	6,110	1,840	2,140	7,650	2,350
MN	22,890	3,240	110	2,220	670	660	2,620	1,000	1,380	4,360	1,150
MS	14,970	2,350	140	1,630	340	370	2,180	460	530	3,210	480
MO	30,210	4,550	170	3,230	840	830	4,070	1,460	1,530	3,060	1,150
MT	4,910	680	†	460	170	140	620	230	210	990	240
NE	8,330	1,200	60	1,030	280	250	1,000	380	380	1,380	340
NV	11,120	1,620	80	1,240	220	260	1,530	540	440	1,990	530
NH	6,310	890	†	620	170	170	790	310	320	1,150	380
NJ	43,000	7,740	340	4,670	1,790	1,100	4,830	1,920	1,760	6,420	2,060
NM	7,780	990	60	880	280	170	760	310	320	1,680	340
NY	87,050	14,430	840	9,700	3,240	2,170	9,870	3,220	2,940	14,220	4,320
NC	40,520	6,330	310	4,100	1,170	990	5,520	1,920	1,760	6,810	1,580
ND	3,080	520	†	360	110	110	330	80	180	610	140
OH	59,680	9,670	390	6,500	1,850	1,510	7,790	2,450	1,970	10,860	3,070
OK	18,460	2,820	140	2,010	450	460	2,580	1,000	680	2,450	820
OR	17,720	2,610	140	1,760	450	420	2,160	1,000	1,000	2,980	1,010
PA	71,840	11,340	390	8,130	2,570	1,630	8,470	2,990	2,880	13,150	3,600
RI	5,870	780	60	650	110	120	720	310	290	840	340
SC	21,860	3,290	170	2,300	500	510	2,880	770	940	4,210	860
SD	3,900	520	†	460	110	110	430	150	230	920	190
TN	31,080	4,230	280	3,150	730	760	4,630	1,300	1,350	4,280	1,150
TX	86,880	12,860	1,030	9,270	2,400	2,250	11,210	3,830	3,050	13,380	3,410
UT	6,380	1,150	†	670	220	220	460	460	380	1,150	290
VT	3,030	470	†	340	110	90	390	150	180	460	190
VA	33,680	6,010	200	3,560	1,010	830	4,400	1,610	1,170	5,740	1,390
WA	27,350	3,920	110	2,660	890	720	3,440	1,380	1,410	5,510	1,250
WV	11,190	1,410	110	1,260	280	220	1,700	460	500	1,450	580
WI	26,340	4,130	80	2,760	840	770	3,060	1,230	1,120	4,050	1,340
WY	2,380	260	†	280	60	60	280	150	90	610	100
US	1,372,910	211,240	10,370	145,290	40,880	34,810	172,570	59,580	56,390	232,090	63,210

*Rounded to the nearest 10. Excludes basal and squamous cell skin cancers and in situ carcinomas except urinary bladder.

†Estimate is fewer than 50 cases. Note: These estimates are offered as a rough guide and should be interpreted with caution. State estimates are calculated according to the distribution of estimated cancer deaths in 2005 by state. State estimates may not add to US total due to rounding and exclusion of state estimates fewer than 50 cases.

Estimated New Cases*

		Males		Females		
Prostate	232,090	33%		Breast	211,240	32%
Lung and Bronchus	93,010	13%		Lung and Bronchus	79,560	12%
Colon and Rectum	71,820	10%		Colon and Rectum	73,470	11%
Urinary Bladder	47,010	7%		Uterine Corpus	40,880	6%
Melanoma of the Skin	33,580	5%		Non-Hodgkin Lymphoma	27,320	4%
Non-Hodgkin Lymphoma	29,070	4%		Melanoma of the Skin	26,000	4%
Kidney and Renal Pelvis	22,490	3%		Ovary	22,220	3%
Leukemia	19,640	3%		Thyroid	19,190	3%
Oral Cavity and Pharynx	19,100	3%		Urinary Bladder	16,200	2%
Pancreas	16,100	2%		Pancreas	16,080	2%
All Sites	710,040	100%	All Sites	662,870	100%	

Estimated Deaths


		Males		Females		
Lung and Bronchus	90,490	31%		Lung and Bronchus	73,020	27%
Prostate	30,350	10%		Breast	40,410	15%
Colon and Rectum	28,540	10%		Colon and Rectum	25,750	10%
Pancreas	15,820	5%		Ovary	16,210	6%
Leukemia	12,540	4%		Pancreas	15,980	6%
Esophagus	10,530	4%		Leukemia	10,030	4%
Liver and Intrahepatic Bile Duct	10,330	3%		Non-Hodgkin Lymphoma	9,050	3%
Non-Hodgkin Lymphoma	10,150	3%		Uterine Corpus	7,310	3%
Urinary Bladder	8,970	3%		Multiple Myeloma	5,640	2%
Kidney and Renal Pelvis	8,020	3%		Brain and Other Nervous System	5,480	2%
All Sites	295,280	100%	All Sites	275,000	100%	

FIGURE 1 Ten Leading Cancer Types for the Estimated New Cancer Cases and Deaths, by Sex, US, 2005.

*Excludes basal and squamous cell skin cancers and in situ carcinoma except urinary bladder. Estimates are rounded to the nearest 10.

Note: Percentage may not total 100% due to rounding.

American Cancer Society, Surveillance Research, 2005

were obtained from the Surveillance, Epidemiology, and End Results (SEER) program of the National Cancer Institute (NCI), covering about 10% to 14% of the US population.²⁻⁵ Population data were obtained from the US Census Bureau.⁶ Causes of death were coded and classified according to the *International Classification of Diseases* (ICD-8, ICD-9, and ICD-10).⁷⁻⁹ Cancer cases were classified according to the International Classification of Diseases for Oncology.¹⁰

Estimated New Cancer Cases

The precise number of cancer cases diagnosed each year in the nation and in every state is unknown because complete cancer registration has not yet been achieved in many states. Consequently, for the national estimate we first estimated the number of new cancer cases occurring annually in the United States from 1979 through 2001 using age-specific cancer incidence rates collected by the SEER program² and population data reported by

TABLE 3 Age-standardized Death Rates from All Cancers Combined and Estimated Cancer Deaths from All Causes and Selected Sites by State, United States, 2005*

STATE	Death Rate† per 100,000	All Sites	Brain/Other Nervous System	Female Breast	Colon & Rectum	Leukemia	Liver	Lung & Bronchus	Non-Hodgkin Lymphoma	Ovary	Pancreas	Prostate
AL	214.4	10,100	210	730	890	360	290	3,160	320	300	530	570
AK	199.2	800	‡	50	80	‡	‡	210	‡	‡	50	‡
AZ	176.5	9,920	240	720	970	400	290	2,720	360	290	550	510
AR	211.5	6,210	160	400	630	260	200	2,400	220	160	310	270
CA	183.7	56,090	1,460	4,050	5,450	2,190	2,070	14,350	1,940	1,720	3,150	3,270
CO	172.2	6,680	180	490	640	300	170	1,660	300	220	400	350
CT	191.5	7,030	140	520	650	260	170	1,850	250	200	430	440
DE	217.4	1,580	‡	120	160	80	‡	460	70	50	100	80
DC	241.2	1,170	‡	100	130	‡	‡	290	‡	‡	60	80
FL	191.0	39,960	930	2,570	3,820	1,700	1,110	12,440	1,180	1,120	2,250	2,570
GA	205.1	14,810	300	1,120	1,350	530	340	4,550	470	420	770	740
HI	158.0	1,990	‡	130	210	80	100	480	90	50	150	120
ID	179.8	2,280	70	180	210	100	50	600	70	80	130	150
IL	208.9	24,810	480	1,780	2,560	1,050	680	6,840	750	650	1,470	1,230
IN	214.1	13,250	320	880	1,320	530	250	4,180	480	380	690	640
IA	189.7	6,610	160	440	660	310	120	1,700	260	210	390	400
KS	189.4	5,370	130	380	610	230	120	1,540	220	160	290	270
KY	227.0	9,560	160	630	910	320	200	3,490	330	230	420	330
LA	230.4	9,670	190	740	1,000	350	310	2,930	360	220	520	450
ME	212.2	3,220	80	170	310	100	70	940	90	100	180	170
MD	211.1	10,570	200	840	1,070	440	260	3,040	350	310	590	550
MA	205.4	13,720	280	940	1,380	500	370	3,800	430	380	850	700
MI	203.9	20,860	450	1,380	1,870	810	530	5,790	730	590	1,140	1,000
MN	187.5	9,510	250	620	860	430	210	2,480	470	270	550	570
MS	222.3	6,220	170	450	630	240	150	2,070	180	160	330	420
MO	207.9	12,550	260	870	1,250	540	290	3,860	520	340	670	400
MT	195.0	2,040	50	130	180	90	50	590	70	70	100	130
NE	184.8	3,460	90	230	400	160	60	950	130	100	180	180
NV	209.5	4,620	90	310	480	170	120	1,450	150	120	230	260
NH	205.2	2,620	70	170	240	110	70	750	110	60	140	150
NJ	208.3	17,860	320	1,480	1,810	710	410	4,580	600	540	1,050	840
NM	171.9	3,230	70	190	340	110	130	720	110	90	180	220
NY	194.1	36,160	720	2,760	3,760	1,410	1,010	9,350	1,000	1,080	2,270	1,860
NC	204.9	16,830	340	1,210	1,590	640	380	5,230	600	470	910	890
ND	184.7	1,280	‡	100	140	70	‡	310	60	‡	80	80
OH	212.4	24,790	530	1,850	2,520	980	570	7,380	670	660	1,300	1,420
OK	206.2	7,670	170	540	780	300	170	2,440	230	180	360	320
OR	198.9	7,360	190	500	680	270	160	2,050	340	240	410	390
PA	207.1	29,840	520	2,170	3,150	1,060	730	8,030	980	880	1,670	1,720
RI	208.4	2,440	50	150	250	80	60	680	100	60	140	110
SC	209.5	9,080	180	630	890	330	220	2,730	320	190	510	550
SD	191.0	1,620	50	100	180	70	‡	410	80	60	90	120
TN	216.3	12,910	320	810	1,220	490	300	4,390	460	350	680	560
TX	196.8	36,090	910	2,460	3,590	1,460	1,280	10,620	1,040	960	1,950	1,750
UT	151.0	2,650	90	220	260	140	60	440	130	90	170	150
VT	200.8	1,260	‡	90	130	60	‡	370	60	‡	70	60
VA	207.1	13,990	270	1,150	1,380	540	340	4,170	400	400	750	750
WA	195.3	11,360	350	750	1,030	470	340	3,260	480	390	690	720
WV	223.3	4,650	90	270	490	140	110	1,610	170	140	200	190
WI	194.3	10,940	260	790	1,070	500	290	2,900	380	320	650	530
WY	190.8	990	‡	50	110	‡	‡	270	‡	‡	50	80
US	199.8	570,280	12,760	40,410	56,290	22,570	15,420	163,510	19,200	16,210	31,800	30,350

*Rounded to the nearest 10; excludes in situ carcinomas except urinary bladder.

†Average annual rates for 1997-2001 and age-adjusted to the 2000 US standard population.

‡Estimate is fewer than 50 deaths.

Note: State estimates may not add to US total due to rounding and exclusion of state estimates for fewer than 50 deaths.

Source: US Mortality Public Use Data Tapes, 1969 to 2002, National Center for Health Statistics, Centers for Disease Control and Prevention, 2004.

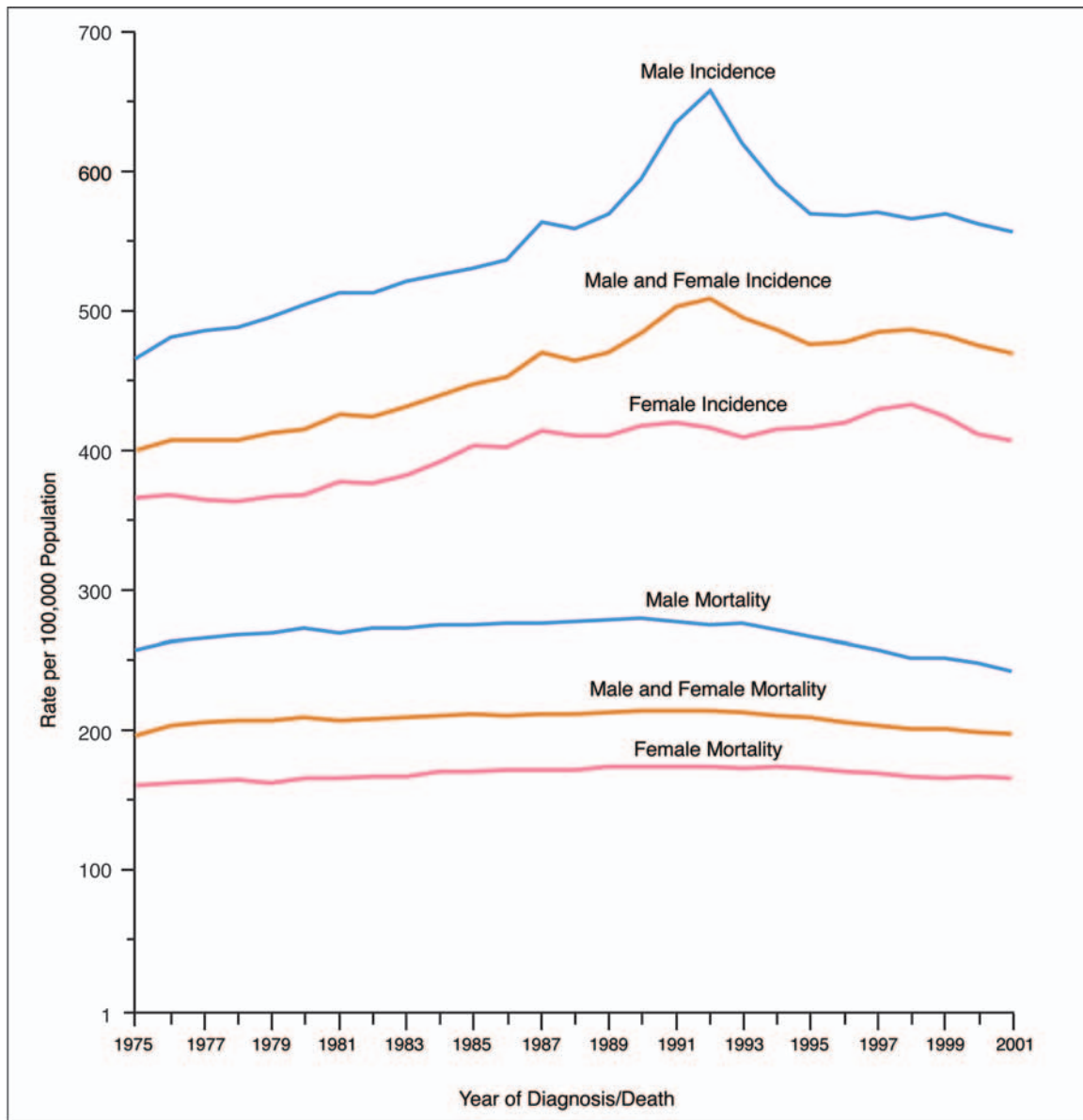


FIGURE 2 Annual Age-adjusted Cancer Incidence and Death Rates* for All Sites, by Sex, US, 1975 to 2001.

* Rates are age-adjusted to the 2000 US standard population.

Source: Incidence data from Surveillance, Epidemiology, and End Results (SEER) program, nine oldest registries, 1975 to 2001, Division of Cancer Control and Population Sciences, National Cancer Institute, 2004. Mortality data from US Mortality Public Use Data Tapes, 1960 to 2001, National Center for Health Statistics, Centers for Disease Control and Prevention, 2004.

the US Census Bureau.⁶ We then forecasted the number of cancer cases expected to be diagnosed in the United States in the year 2005 using an autoregressive quadratic time-trend model fitted to the annual cancer case estimates.¹¹ For estimates of new cancer cases in individual states, we projected the number of deaths from cancer in each state in 2005 and assumed that the ratio of estimated cancer deaths to cases in each state equaled that in the United States.

Estimated Cancer Deaths

We used the state-space prediction method¹² to estimate the number of cancer deaths expected to occur in the United States and in each state in the year 2005. Projections are based on underlying cause of death from death certificates as reported to the NCHS.¹ This model projects the number of cancer deaths expected to occur in 2005 based on the number that occurred each

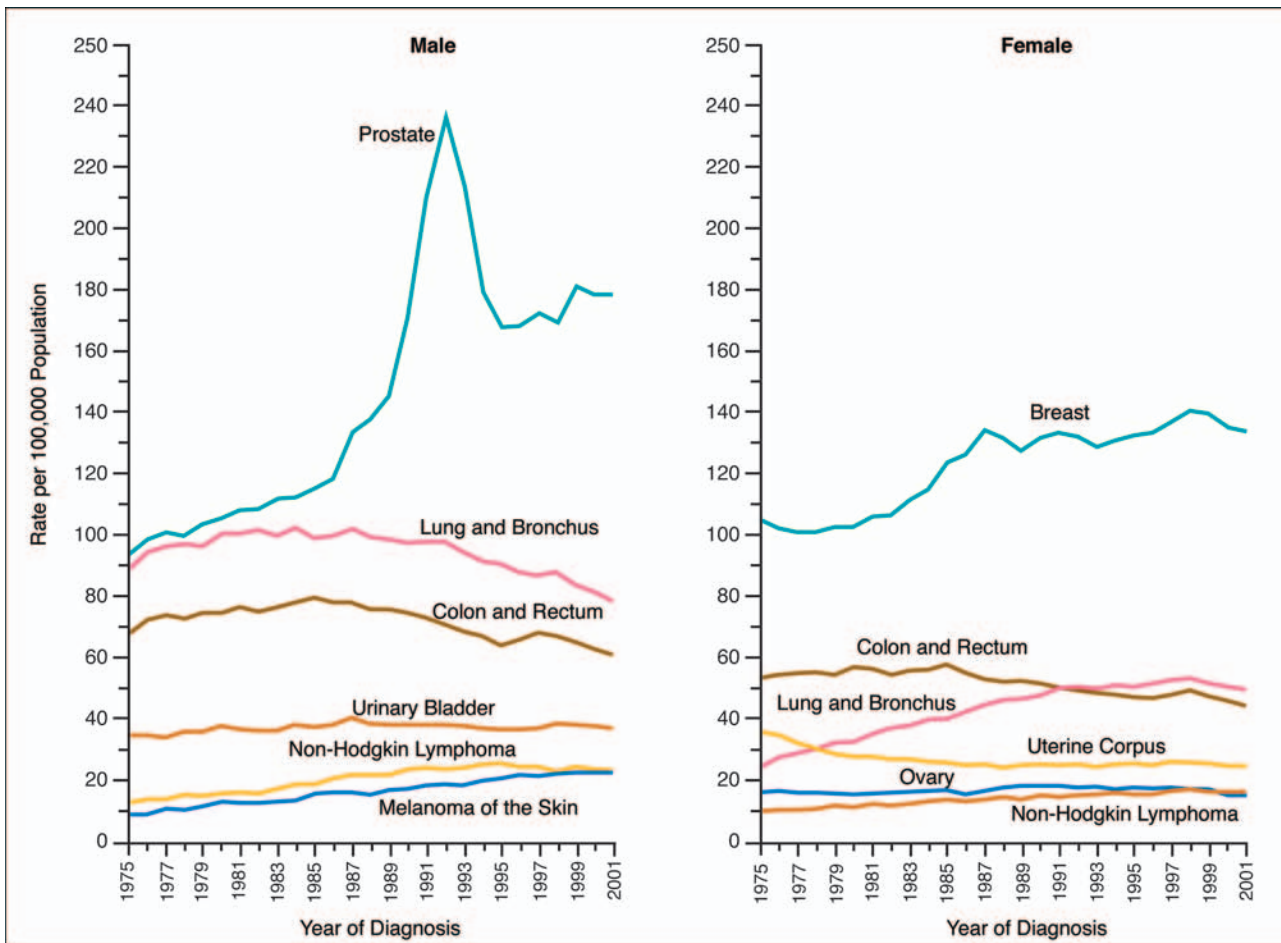


FIGURE 3 Annual Age-adjusted Cancer Incidence Rates* Among Males and Female for Selected Cancer Types, US, 1975 to 2001. *Rates are age-adjusted to the 2000 US standard population. Source: Surveillance, Epidemiology, and End Results (SEER) program, nine oldest registries, 1975 to 2001, Division of Cancer Control and Population Sciences, National Cancer Institute, 2004.

year from 1969 to 2002 in the United States and in each state separately.

Other Statistics

We provide mortality statistics for the leading causes of death as well as deaths from cancer in the year 2002. Causes of death for 2002 were coded and classified according to ICD-10.⁷ This report also provides updated statistics on trends in cancer incidence and mortality rates, the probability of developing cancer, and 5-year relative survival rates for selected cancer sites based on data from 1973 through 2001.³ All age-adjusted incidence and death rates are

standardized to the 2000 US standard population and expressed per 100,000 population.

The long-term incidence trends (1975 to 2001) presented in Table 4 are adjusted for delays in reporting. Delayed reporting affects the most recent 1 to 3 years of incidence data (in this case, 1999 to 2001), especially for cancers such as melanoma and prostate cancer that are frequently diagnosed in outpatient settings. The NCI has developed a method to account for expected reporting delays in SEER registries for all cancer sites combined and several specific cancer sites when long-term incidence trends are analyzed.¹³ Delay-adjusted trends provide a more accurate assessment of trends in the most recent years for which data are available.

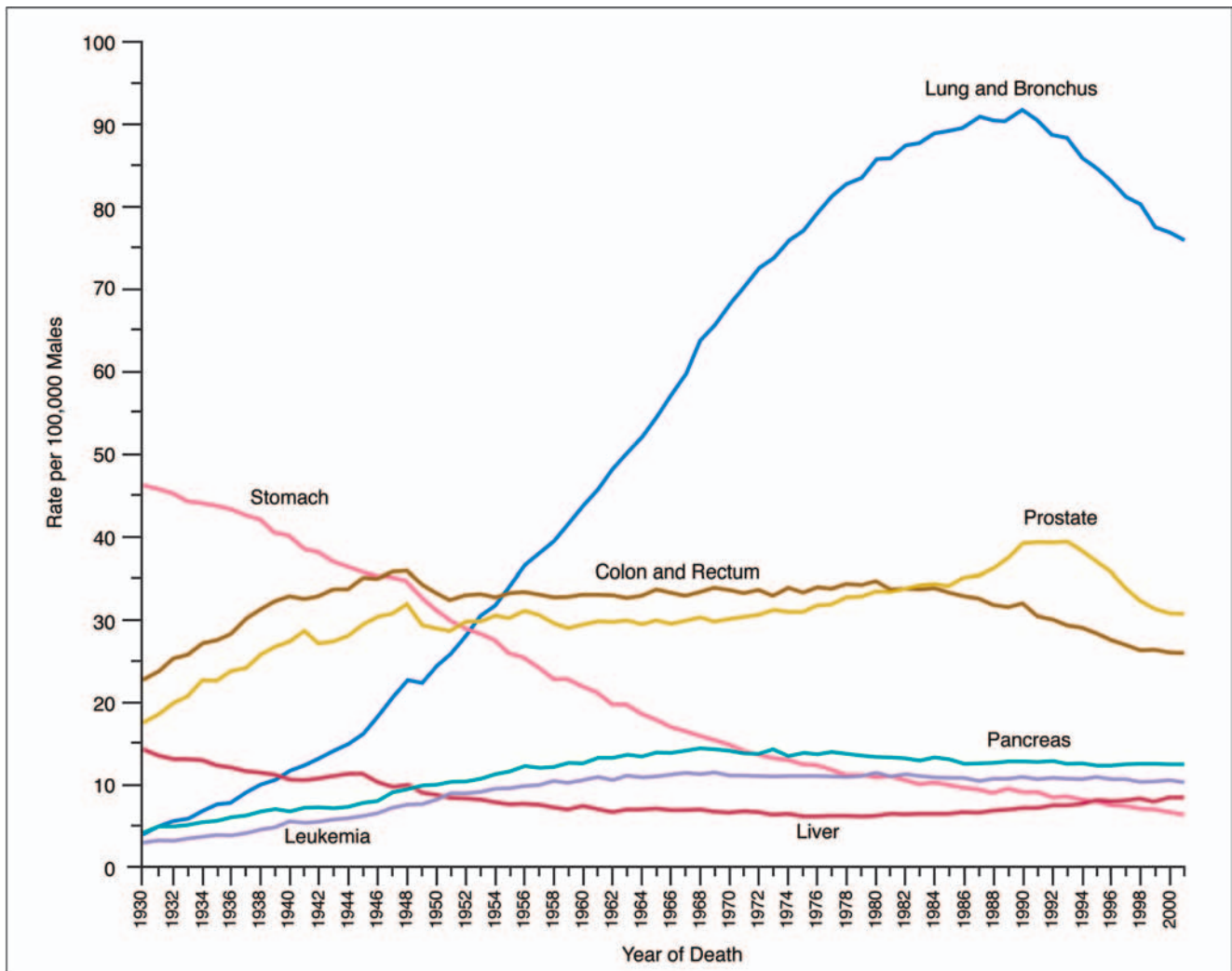


FIGURE 4 Annual Age-adjusted Cancer Death Rates* Among Males for Selected Cancer Types, US, 1930 to 2001.

*Rates are age-adjusted to the 2000 US standard population.

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

Source: US Mortality Public Use Data Tapes, 1960 to 2001, US Mortality Volumes, 1930 to 1959, National Center for Health Statistics, Centers for Disease Control and Prevention.

SELECTED FINDINGS

Expected Numbers of New Cancer Cases

Table 1 presents the estimated number of new cancer cases expected among men and women in the United States in 2005. The estimate of about 1.4 million new cases of invasive cancer does not include carcinoma in situ of any site except urinary bladder, nor does it include basal and squamous cell

cancers of the skin. More than 1 million cases of basal and squamous cell skin cancer, approximately 58,490 cases of breast carcinoma in situ, and 46,170 cases of in situ melanoma are expected to be newly diagnosed in 2005. The estimated numbers of new cancer cases for each state and selected cancer sites are shown in Table 2.

Figure 1 indicates the most common cancers expected to occur in men and women in 2005. Among men, cancers of the prostate, lung and bronchus, and colon and rectum account for

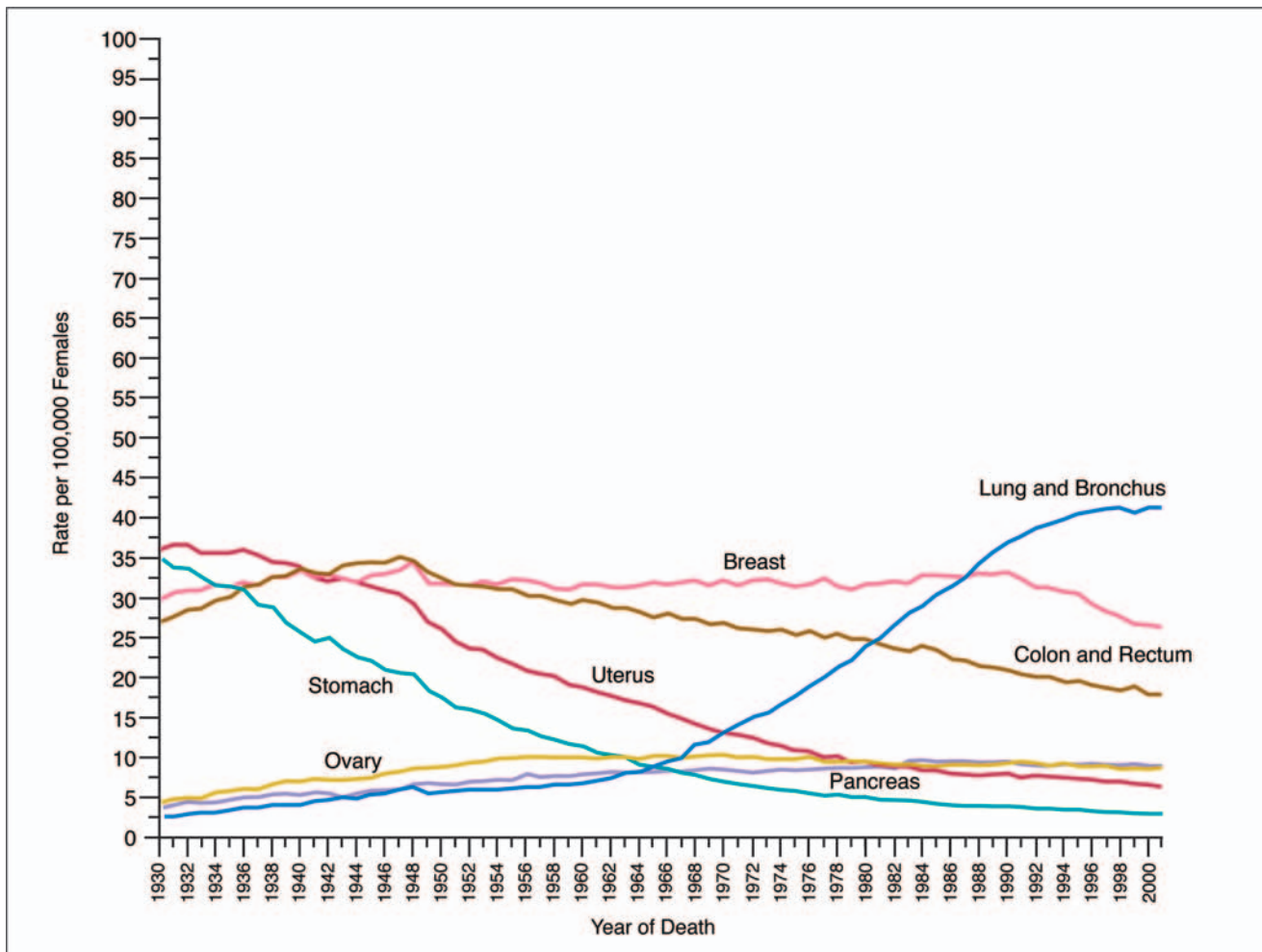


FIGURE 5 Annual Age-adjusted Cancer Death Rates* Among Females for Selected Cancer Types, US, 1930 to 2001.

*Rates are age-adjusted to the 2000 US standard population.

Note: Due to ICD coding, numerator information has changed over time. Rates for cancers of the uterus, ovary, lung and bronchus, and colon and rectum are affected by these changes. Uterus cancers are for uterine cervix and uterine corpus combined.

Source: US Mortality Public Use Data Tapes, 1960 to 2001, US Mortality Volumes 1930 to 1959, National Center for Health Statistics, Centers for Disease Control and Prevention.

more than 56% of all newly diagnosed cancers. Prostate cancer alone accounts for approximately 33% (232,090) of incident cases in men. Based on cases diagnosed between 1995 and 2000, about 90% of these estimated new cases of prostate cancer are expected to be diagnosed at local or regional stages, for which 5-year relative survival approaches 100%.

The three most commonly diagnosed cancers among women in 2005 will be cancers of the breast, lung and bronchus, and colon and rectum, accounting for approximately 55% of

estimated cancer cases in women. Breast cancer alone is expected to account for 32% (211,240) of all new cancer cases among women.

Expected Number of New Cancer Deaths

Table 1 also shows the expected number of cancer deaths in 2005 for men, women, and both sexes combined. It is estimated that approximately 570,280 Americans will die from cancer, corresponding to more than 1,500 deaths per day. Cancers of the lung and

TABLE 4 Trends in Cancer Incidence and Death Rates for Selected Cancers by Sex, All Races, 1975 to 2001

	Line Segment 1		Line Segment 2		Line Segment 3		Line Segment 4	
	Year	APC*	Year	APC*	Year	APC*	Year	APC*
All Cancers								
Incidence								
Male and female	1975-1989	1.2†	1989-1992	2.8	1992-1995	-2.1	1995-2001	0.4
Male	1975-1989	1.3†	1989-1992	5.2†	1992-1995	-4.7†	1995-2001	0.2
Female	1975-1979	-0.2	1979-1987	1.5†	1987-2001	0.3†		
Death								
Male and female	1975-1990	0.5†	1990-1993	-0.3	1993-2001	-1.1†		
Male	1975-1979	1.0†	1979-1990	0.3†	1990-1993	-0.4	1993-2001	-1.5†
Female	1975-1992	0.5†	1992-2001	-0.8†				
Lung & bronchus								
Incidence								
Male and female	1975-1982	2.5†	1982-1991	1.0†	1991-2001	-0.8†		
Male	1975-1982	1.4†	1982-1991	-0.4	1991-2001	-1.9†		
Female	1975-1982	5.5†	1982-1990	3.5†	1990-1998	1.1†	1998-2001	-1.3
Death								
Male and female	1975-1980	3.0†	1980-1990	1.8†	1990-1995	-0.2	1995-2001	-1.0†
Male	1975-1982	1.8†	1982-1991	0.4†	1991-2001	-1.9†		
Female	1975-1982	6.0†	1982-1990	4.2†	1990-1995	1.7†	1995-2001	0.2
Colon & rectum								
Incidence								
Male and female	1975-1985	0.8†	1985-1995	-1.8†	1995-1998	1.3	1998-2001	-2.4†
Male	1975-1986	1.1†	1986-1995	-2.1†	1995-1998	1.1	1998-2001	-2.9†
Female	1975-1985	0.3†	1985-1995	-1.9†	1995-1998	1.8	1998-2001	-2.3†
Death								
Male and female	1975-1984	-0.5†	1984-2001	-1.8†				
Male	1975-1984	-0.1	1984-1990	-1.4†	1990-2001	-2.0†		
Female	1975-1984	-1.0†	1984-2001	-1.8†				
Female breast								
Incidence	1975-1980	-0.4	1980-1987	3.7†	1987-2001	0.5†		
Death	1975-1990	0.4†	1990-2001	-2.3†				
Prostate								
Incidence	1975-1988	2.6†	1988-1992	16.5†	1992-1995	-11.5†	1995-2001	2.0†
Death	1975-1987	0.9†	1987-1991	3.0†	1991-1994	-0.6	1994-2001	-4.1†

*APC, annual percent change based on rates age-adjusted to the 2000 standard population.

†The APC is significantly different from zero.

Note: Trends were analyzed by Joinpoint Regression Program, version 2.7, with a maximum of three joinpoints (ie, four line segments). Trends in incidence are based on rates adjusted for delay in reporting.

Source: Ries LAG, Eisner MP, Kosary CL, et al.³

bronchus, prostate, and colon and rectum in men and cancers of the lung and bronchus, breast, and colon and rectum in women continue to be the most common fatal cancers. These four cancers account for one-half of the total cancer deaths among men and women (Figure 1). Lung cancer surpassed breast cancer as the leading cause of cancer death in women in 1987. Lung cancer is expected to account for 27% of all female cancer deaths in 2005. Table 3 provides the estimated number of cancer deaths in 2005 by state for selected cancer sites.

Trends in Cancer Incidence and Mortality

Figures 2 through 5 depict long-term trends in cancer incidence and death rates for all cancers combined and for selected cancer sites by sex. Table 4 shows incidence and mortality patterns for all cancer sites and for the four most common cancer sites based on joinpoint analysis. Trends in incidence were adjusted for delayed reporting in the table (joinpoint analysis) but not in the figures (Figures 2 and 3). Death rates from all cancers combined decreased by 1.5% per year from 1993 to 2001 in

TABLE 5 Fifteen Leading Causes of Death, United States, 2002

Rank	Causes of Death	Number of Deaths	Percent (%) of Total Deaths	Death Rate*
	All causes	2,443,387		843.6
1	Heart diseases	696,947	28.5	240.1
2	Cancer	557,271	22.8	193.4
3	Cerebrovascular diseases	162,672	6.7	56.0
4	Chronic lower respiratory diseases	124,816	5.1	43.4
5	Accidents (unintentional injuries)	106,742	4.4	36.8
6	Diabetes mellitus	73,249	3.0	25.4
7	Influenza & pneumonia	65,681	2.7	22.5
8	Alzheimer disease	58,866	2.4	20.1
9	Nephritis, nephrotic syndrome, & nephrosis	40,974	1.7	14.2
10	Septicemia	33,865	1.4	11.7
11	Intentional self-harm (suicide)	31,655	1.3	10.9
12	Chronic liver disease & cirrhosis	27,257	1.1	9.4
13	Hypertension and hypertensive renal disease	20,261	0.8	7.0
14	Assault (homicide)	17,638	0.7	6.1
15	Parkinson disease	16,959	0.7	5.9
	All other & ill-defined causes	408,534		

*Rates are per 100,000 population and age-adjusted to the 2000 US standard population.

Note: Percentages may not total 100 due to rounding. Symptoms, signs, and abnormalities and pneumonitis due to solids and liquids were excluded from the cause of death ranking order.

Source: US Mortality Public Use Data Tape, 2002, National Center for Health Statistics, Centers for Disease Control and Prevention, 2004.

males and by 0.8% per year in females from 1992 to 2001 (Table 4). Delay-adjusted cancer incidence rates stabilized in men from 1995 to 2001 and increased by 0.3% per year from 1987 to 2001 in women (Table 4).

Mortality rates have continued to decrease across all four major cancer sites in men and in women except for female lung cancer in which rates have leveled off for the first time after increasing for many decades (Table 4). The incidence trends are mixed, however. Lung cancer incidence rates are declining in men and leveled off for the first time in women after increasing for many decades. Colorectal cancer incidence rates have decreased from 1998 through 2001 both in males and in females. The incidence rates of prostate cancer and female breast cancer have continued to increase, although at a slower rate than in previous years. The continuing increase may be attributable to increased screening through prostate-specific antigen testing (for prostate cancer) and mammography (for breast cancer). The increase in female breast cancer incidence may also reflect increased use of hormone replacement therapy and/or increased prevalence of obesity.¹⁴

Changes in the Recorded Number of Deaths From Cancer From 2001 to 2002

A total of 557,271 cancer deaths were recorded in the United States in 2002, the most recent year for which actual data are available. More than 3,500 additional cancer deaths were recorded in 2002 than in 2001, predominantly because of growth and aging of the population. Cancer accounted for approximately 23% of all deaths, ranking second only to heart disease (Table 5). When age-adjusted death rates are considered (Figure 6), cancer is the leading cause of death among men and women under age 85. A total of 476,009 people under age 85 died from cancer in the United States in 2002 compared with 450,637 deaths from heart disease. When cause of death is ranked within each age group, categorized in 20-year age intervals, cancer is one of the five leading causes of death in each age group among both males and females. Cancer is the leading cause of death among women aged 40 to 79 and among men aged 60 to 79 (Table 6).

TABLE 6 Ten Leading Causes of Death, by Age and Sex, United States, 2002

	All Ages		Ages 1 to 19		Ages 20 to 39		Ages 40 to 59		Ages 60 to 79		Ages 80+	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
	All Causes 1,199,264	All Causes 1,244,123	All Causes 16,848	All Causes 8,972	All Causes 65,934	All Causes 30,002	All Causes 212,519	All Causes 131,100	All Causes 488,179	All Causes 402,852	All Causes 399,785	All Causes 658,805
1	Heart diseases 340,933	Heart diseases 356,014	Accidents (unintentional injuries) 7,718	Accidents (unintentional injuries) 3,778	Accidents (unintentional injuries) 21,627	Accidents (unintentional injuries) 6,859	Heart diseases 54,028	Cancer 49,570	Cancer 156,527	Cancer 129,699	Heart diseases 136,941	Heart diseases 231,969
2	Cancer 288,768	Cancer 268,503	Assault (homicide) 2,035	Cancer 957	Intentional self-harm (suicide) 8,771	Cancer 5,403	Cancer 52,489	Heart diseases 21,677	Heart diseases 143,570	Heart diseases 99,160	Cancer 73,839	Cancer 82,840
3	Accidents (unintentional injuries) 69,257	Cerebro- vascular disease 100,050	Intentional self-harm (suicide) 1,479	Assault (homicide) 636	Assault (homicide) 7,827	Heart diseases 2,640	Accidents (unintentional injuries) 20,224	Accidents (unintentional injuries) 8,076	Chronic lower respiratory diseases 31,438	Chronic lower respiratory diseases 29,905	Cerebro- vascular diseases 30,688	Cerebro- vascular diseases 67,702
4	Cerebro- vascular disease 62,622	Chronic lower respiratory diseases 64,103	Cancer 1,240	Congenital anomalies 552	Heart diseases 5,590	Intentional self-harm (suicide) 1,913	Intentional self-harm (suicide) 9,325	Cerebro- vascular diseases 5,536	Cerebro- vascular disease 24,573	Cerebro- vascular diseases 25,934	Chronic lower respiratory diseases 24,411	Alzheimer disease 35,225
5	Chronic lower respiratory diseases 60,713	Alzheimer disease 41,877	Congenital anomalies 643	Heart diseases 322	Cancer 4,626	Assault (homicide) 1,723	Chronic liver disease & cirrhosis 9,082	Diabetes mellitus 4,675	Diabetes mellitus 16,886	Diabetes mellitus 17,038	Influenza & pneumonia 16,980	Chronic lower respiratory diseases 29,619
6	Diabetes mellitus 34,301	Diabetes mellitus 38,948	Heart disease 503	Intentional self-harm (suicide) 298	HIV disease 3,206	HIV disease 1,391	Diabetes mellitus 6,719	Chronic lower respiratory diseases 4,089	Accidents (unintentional injuries) 10,825	Influenza & pneumonia 7,508	Alzheimer disease 12,384	Influenza & pneumonia 27,094
7	Influenza & pneumonia 28,918	Accidents (unintentional injuries) 37,485	Chronic lower respiratory diseases 186	Influenza & pneumonia 134	Diabetes mellitus 905	Cerebro- vascular disease 740	HIV disease 6,450	Chronic liver disease & cirrhosis 3,617	Influenza & pneumonia 8,960	Nephritis, nephrotic syndrome & nephrosis 7,375	Diabetes mellitus 9,737	Diabetes mellitus 16,566
8	Intentional self-harm (suicide) 25,409	Influenza & pneumonia 36,763	Influenza & pneumonia 142	Chronic lower respiratory diseases 108	Chronic liver disease & cirrhosis 852	Diabetes mellitus 629	Cerebro- vascular diseases 6,440	Intentional self-harm (suicide) 2,879	Nephritis, nephrotic syndrome & nephrosis 8,077	Accidents (unintentional injuries) 6,987	Nephritis, nephrotic syndrome & nephrosis 9,030	Nephritis, nephrotic syndrome & nephrosis 11,784
9	Nephritis, nephrotic syndrome & nephrosis 19,695	Nephritis, nephrotic syndrome & nephrosis 21,279	Septicemia 115	Septicemia 108	Cerebro- vascular disease 742	Chronic liver disease & cirrhosis 475	Chronic lower respiratory diseases 4,274	HIV disease 1,998	Septicemia 6,611	Septicemia 6,781	Accidents (unintentional injuries) 8,236	Accidents (unintentional injuries) 11,381
10	Chronic liver disease & cirrhosis 17,401	Septicemia 18,918	Cerebro- vascular disease 111	In Situ/Benign unknown neoplasms 90	Congenital anomalies 552	Congenital anomalies 431	Assault (homicide) 2,875	Septicemia 1,938	Chronic Liver disease & cirrhosis 6,313	Alzheimer disease 6,542	Parkinson disease 5,805	Septicemia 9,614

Note: Symptoms, signs, and abnormalities and events of undetermined intent were excluded from the cause of death ranking order.

Source: US Mortality Public Use Data Tapes, 2002, National Center for Health Statistics, Centers for Disease Control and Prevention, 2004.

Table 7 presents the number of deaths from all cancers combined and the five most common cancer sites for males and females at various ages. Among men under age 40, leukemia is the most common fatal cancer, while cancer of the lung and bronchus predominates in men

aged 40 years and older. Colorectal cancer is the second most common cause of cancer death among men 40 to 79 years old, and prostate cancer is the second most common among men aged 80 and older. Among women, leukemia is the leading cause of cancer death before age 20,

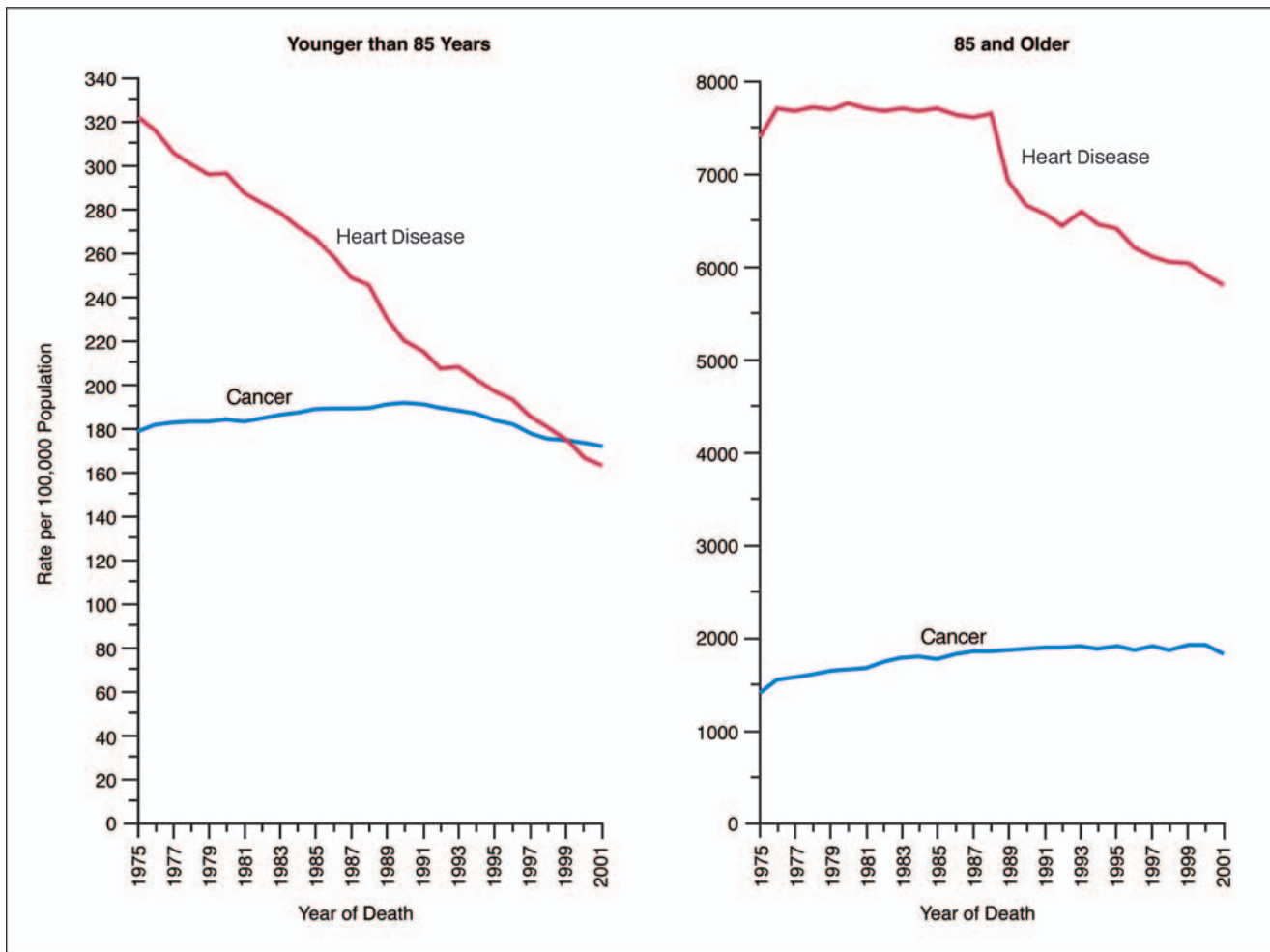


FIGURE 6 Death Rates* From Cancer and Heart Disease for Ages Younger than 85 and 85 and Older.

*Rates are age-adjusted to the 2000 US standard population.

Source: US Mortality Public Use Data Tapes, 1960 to 2001, National Center for Health Statistics, Centers for Disease Control and Prevention, 2004.

breast cancer ranks first at ages 20 to 59 years, and lung cancer ranks first at age 60 years and older.

From 2001 to 2002, the number of recorded cancer deaths increased by 1,693 in men and by 1,810 in women (Table 8). The total number of deaths for the major cancers in men and women did not change substantially except for lung cancer (increased by 1,903) and colorectal cancer (decreased by 447) among women.

CANCER OCCURRENCE BY RACE AND ETHNICITY

Cancer incidence and death rates vary considerably among racial and ethnic groups (Ta-

ble 9). For all cancer sites combined, African American men have a 24% higher incidence rate and 40% higher death rate than Whites. African American women have a lower incidence rate but nearly 20% higher death rate than Whites for all cancer sites combined. For the specific cancer sites listed in Table 9, incidence and death rates are consistently higher in African Americans than in Whites, except for breast cancer (incidence) and lung cancer (mortality) among women. Death rates from prostate, stomach, and cervical cancers among African Americans are more than twice the rates in Whites. Factors that contribute to these mortality differences include differences in exposure (eg, *Helicobacter pylori* for stomach

TABLE 7 Reported Deaths for the Five Leading Cancer Sites, by Age and Sex, United States, 2002

All Ages	<20	20 to 39	40 to 59	60 to 79	≥80
Male					
All Sites 288,768	All Sites 1,282	All Sites 4,626	All Sites 52,489	All Sites 156,527	All Sites 73,839
Lung & bronchus 90,121	Leukemia 382	Leukemia 599	Lung & bronchus 16,044	Lung & bronchus 55,996	Lung & bronchus 17,681
Prostate 30,446	Brain & ONS* 327	Brain & ONS* 516	Colon & rectum 5,257	Colon & rectum 14,973	Prostate 15,795
Colon & rectum 28,472	Other endocrine system 104	Colon & rectum 413	Pancreas 3,195	Prostate 13,539	Colon & rectum 7,820
Pancreas 14,877	Bones & joints 96	Non-Hodgkin lymphoma 401	Liver & bile duct 2,733	Pancreas 8,312	Leukemia 3,409
Leukemia 12,058	Soft tissue 82	Lung & bronchus 394	Esophagus 2,470	Leukemia 5,919	Urinary bladder 3,331
Female					
All Sites 268,503	All Sites 989	All Sites 5,403	All Sites 49,570	All Sites 129,699	All Sites 82,840
Lung & bronchus 67,509	Leukemia 296	Breast 1,331	Breast 12,115	Lung & bronchus 39,943	Lung & bronchus 16,064
Breast 41,514	Brain & ONS* 244	Uterine cervix 499	Lung & bronchus 11,129	Breast 17,218	Colon & rectum 12,030
Colon & rectum 28,132	Other endocrine system 88	Leukemia 433	Colon & rectum 3,857	Colon & rectum 11,904	Breast 10,849
Pancreas 15,387	Bones & joints 83	Lung & bronchus 370	Ovary 3,285	Pancreas 7,869	Pancreas 5,436
Ovary 14,682	Soft tissue 71	Brain & ONS* 349	Pancreas 1,999	Ovary 7,349	Non-Hodgkin lymphoma 4,029

*ONS, other nervous system.

Note: Others and Unspecified Primary are excluded from cause of death ranking order.

Source: US Mortality Public Use Data Tapes, 2002, National Center for Health Statistics, Centers for Disease Control and Prevention, 2004.

cancer), access to regular screening (breast, cervical, and colorectal cancers), and timely, high quality treatments (many cancers). The higher breast cancer incidence rates among Whites are thought to reflect a combination of more frequent mammography, which makes diagnosis more likely, delayed age at first birth, and historically greater use of hormone replacement therapy.¹⁴

Among other racial and ethnic groups, cancer incidence and death rates are lower for all cancer sites combined and for the four most common cancer sites than those for Whites and

African Americans. However, incidence and death rates for cancers of the uterine cervix, stomach, and liver are generally higher in minority population than in Whites. Stomach and liver cancer incidence and death rates are more than twice as high in Asian/Pacific Islanders than in Whites, reflecting increased exposure to infectious agents such as *H pylori* and hepatitis C virus.¹⁵

Historical information to adjust for delays in reporting is not available for all racial and ethnic groups. From 1992 to 2001, incidence rates for all cancer sites combined, not adjusted for

TABLE 8 Trends in the Recorded Number of Cancer Deaths for Selected Cancers, by Sex, United States, 1989 to 2002

Year	All Sites		Lung and Bronchus		Colon and Rectum		Prostate	Breast
	Male	Female	Male	Female	Male	Female	Male	Female
1989	263,309	232,843	88,975	48,042	28,123	28,903	30,520	42,837
1990	268,283	237,039	91,014	50,136	28,484	28,674	32,378	43,391
1991	272,380	242,277	91,603	52,022	28,026	28,753	33,564	43,583
1992	274,838	245,740	91,322	54,485	28,280	28,714	34,240	43,068
1993	279,375	250,529	92,493	56,234	28,199	29,206	34,865	43,555
1994	280,465	253,845	91,825	57,535	28,471	28,936	34,902	43,644
1995	281,611	256,844	91,800	59,304	28,409	29,237	34,475	43,844
1996	281,898	257,635	91,559	60,351	27,989	28,766	34,123	43,091
1997	281,110	258,467	91,278	61,922	28,075	28,621	32,891	41,943
1998	282,065	259,467	91,399	63,075	28,024	28,950	32,203	41,737
1999	285,832	264,006	89,401	62,662	28,313	28,909	31,729	41,144
2000	286,082	267,009	90,415	65,016	28,484	28,950	31,078	41,872
2001	287,075	266,693	90,367	65,606	28,229	28,579	30,719	41,394
2002	288,768	268,503	90,121	67,509	28,472	28,132	30,446	41,514

Note: Effective with the mortality data for 1999, causes of death are classified by ICD-10, replacing ICD-9 used for 1979 to 1998 data.

Source: US Mortality Public Use Data Tapes, 1989 to 2002, National Center for Health Statistics, Centers for Disease Control and Prevention, 2004.

delayed reporting, decreased by 2.8% per year among American Indians/Alaskan Natives, by 1.2% per year in African Americans, by 0.7% among Asian/Pacific Islanders, by 0.6% among Hispanic-Latinos, and by 0.5% among Whites (data not shown). Similarly, the death rate from all cancers combined decreased from 1992 through 2001 by 1.6% per year in Asian/Pacific Islanders, by 1.4% among African Americans, by 0.9% among Whites, and by 0.5% among Hispanic-Latinos. The death rate from all cancers combined stabilized during this time period among American Indians/Alaskan Natives.³

Lifetime Probability of Developing Cancer

The lifetime probability of developing cancer is higher for men (46%) than for women (38%) (Table 10). However, because of the relatively early age of onset of breast cancer, women have a slightly higher probability of developing cancer before the age of 60. It is noteworthy that these estimates are based on the average experience of the general population and may overestimate or underestimate individual risk because of differences in exposure and/or genetic susceptibility.

Cancer Survival by Race

African American men and women have poorer probability of survival once a cancer diagnosis is made. As shown in Figure 7, African Americans are less likely than Whites to be diagnosed with cancer at a localized stage, when the disease may be more easily and successfully treated, and are more likely to be diagnosed with cancer at a regional or distant stage of disease. Five-year relative survival is lower in African Americans than in Whites at each stage of diagnosis for nearly every cancer site (Figure 8). These disparities may result from inequalities in access to and receipt of quality health care and/or from differences in comorbidities. The extent to which these factors, individually or collectively, contribute to the overall differential survival is unclear.¹⁶ However, recent findings suggest that when African Americans receive similar cancer treatment and medical care as Whites they tend to have similar disease outcomes.¹⁷

There have been notable improvements over time in the relative 5-year survival rates for the common cancer sites and all cancers combined (Table 11).³ This is true for both Whites and African Americans. Cancer sites for which survival has not improved substan-

TABLE 9 Age-standardized Incidence and Death Rates* for Selected Cancer Sites by Race and Ethnicity, United States, 1997 to 2001

	All Races	White	African American	Asian American/ Pacific Islander	American Indian/Alaskan Native	Hispanic-Latino†
Incidence Rates						
All sites						
Male	554.3	556.5	689.2	385.9	263.2	419.8
Female	414.4	429.8	400.1	302.8	222.5	309.9
Breast (Female)	135.2	141.7	119.9	96.8	54.2	89.6
Colon & rectum						
Male	63.4	63.1	72.9	56.3	38.3	49.6
Female	46.4	45.9	56.5	38.6	32.7	32.5
Lung & bronchus						
Male	79.1	77.9	117.2	60.5	46.0	45.2
Female	49.1	51.3	54.5	28.5	23.4	23.9
Prostate	172.3	167.4	271.3	100.7	51.2	140.0
Stomach						
Male	12.6	10.8	18.8	21.9	15.7	17.8
Female	6.1	5.0	9.9	12.4	8.9	10.0
Liver & bile duct						
Male	9.1	7.2	11.8	21.1	8.3	13.5
Female	3.5	2.9	3.9	7.7	4.8	5.8
Uterine cervix	9.3	8.9	11.8	9.5	6.0	16.2
Death Rates						
All sites						
Male	251.1	245.5	347.3	151.2	167.0	174.0
Female	166.7	165.5	196.5	100.5	113.4	111.6
Breast (female)	27.0	26.4	35.4	12.6	13.6	17.3
Colon & rectum						
Male	25.3	24.8	34.3	15.8	17.1	18.0
Female	17.7	17.1	24.5	10.8	11.7	11.6
Lung & bronchus						
Male	77.9	76.6	104.1	40.2	49.8	39.6
Female	40.8	41.6	39.9	19.2	26.6	14.9
Prostate	31.5	28.8	70.4	13.0	20.2	23.5
Stomach						
Male	6.6	5.8	13.3	11.9	7.3	9.7
Female	3.3	2.8	6.3	7.0	4.1	5.3
Liver & bile duct						
Male	6.7	6.1	9.3	15.6	8.3	10.6
Female	2.9	2.7	3.8	6.6	4.3	5.1
Uterine cervix	2.9	2.6	5.6	2.8	2.8	3.6

*Rates are per 100,000 and age-adjusted to the 2000 US standard population.

†Hispanics-Latinos are not mutually exclusive from Whites, African Americans, Asian Americans/Pacific Islanders, and American Indians/Alaskan Natives.

Source: Ries LAG, Eisner MP, Kosary CL, et al.³

tially over the past 25 years include uterine corpus, uterine cervix, larynx, liver, lung, pancreas, stomach, and esophagus.

Relative survival rate cannot be calculated for other racial and ethnic groups because accurate life expectancies are not available. However, based on cause-specific survival rates of cancer patients diagnosed from 1992 to 2000 in SEER areas of the United States, all minority populations except Asian/Pacific

Islander women have an elevated probability of dying from all cancers combined within 5 years of diagnosis compared with non-Hispanic Whites after accounting for differences in age at diagnosis.^{18,19} For the four major cancer sites (prostate, female breast, lung and bronchus, and colon and rectum), minority populations are more likely to be diagnosed at distant stage compared with non-Hispanic Whites.¹⁹

TABLE 10 Probability of Developing Invasive Cancers Within Selected Age Intervals, by Sex, United States, 1999 to 2001*

		Birth to 39 (%)	40 to 59 (%)	60 to 79 (%)	Birth to Death (%)
All sites†	Male	1.41 (1 in 71)	8.52 (1 in 12)	34.63 (1 in 3)	45.59 (1 in 2)
	Female	1.97 (1 in 51)	9.10 (1 in 11)	22.51 (1 in 4)	38.18 (1 in 3)
Urinary bladder‡	Male	0.02 (1 in 4264)	0.41 (1 in 243)	2.42 (1 in 41)	3.56 (1 in 28)
	Female	0.01 (1 in 8876)	0.12 (1 in 804)	0.65 (1 in 153)	1.13 (1 in 88)
Breast	Female	0.48 (1 in 207)	4.18 (1 in 24)	7.49 (1 in 13)	13.39 (1 in 7)
Colon & rectum	Male	0.07 (1 in 1484)	0.90 (1 in 111)	3.96 (1 in 25)	5.90 (1 in 17)
	Female	0.06 (1 in 1586)	0.69 (1 in 145)	3.04 (1 in 33)	5.54 (1 in 18)
Leukemia	Male	0.15 (1 in 659)	0.22 (1 in 461)	0.85 (1 in 118)	1.47 (1 in 68)
	Female	0.13 (1 in 799)	0.14 (1 in 697)	0.48 (1 in 206)	1.04 (1 in 96)
Lung & bronchus	Male	0.03 (1 in 3164)	1.06 (1 in 95)	5.75 (1 in 17)	7.63 (1 in 13)
	Female	0.03 (1 in 2977)	0.81 (1 in 123)	3.91 (1 in 26)	5.71 (1 in 18)
Melanoma of the skin	Male	0.13 (1 in 795)	0.51 (1 in 195)	1.08 (1 in 93)	1.89 (1 in 53)
	Female	0.21 (1 in 484)	0.40 (1 in 248)	0.53 (1 in 190)	1.28 (1 in 78)
Non-Hodgkin lymphoma	Male	0.14 (1 in 724)	0.46 (1 in 217)	1.32 (1 in 76)	2.18 (1 in 46)
	Female	0.09 (1 in 1147)	0.31 (1 in 328)	1.00 (1 in 100)	1.80 (1 in 56)
Prostate	Male	0.01 (1 in 9879)	2.58 (1 in 39)	14.76 (1 in 7)	17.81 (1 in 6)
Uterine cervix	Female	0.16 (1 in 636)	0.29 (1 in 340)	0.27 (1 in 368)	0.77 (1 in 130)
Uterine corpus	Female	0.06 (1 in 1632)	0.72 (1 in 139)	1.57 (1 in 64)	2.62 (1 in 38)

*For those free of cancer at beginning of age interval. Based on cancer cases diagnosed during 1999 to 2001.

†The "1 in" statistic and the inverse of the percentage may not be equivalent due to rounding.

‡All sites exclude basal and squamous cell skin cancers and in situ cancers except urinary bladder.

Source: DEVCAN Software, Probability of Developing or Dying of Cancer Software, Version 5.2. Statistical Research and Applications Branch, National Cancer Institute, 2005. <http://srab.cancer.gov/devcan>.

CANCER IN CHILDREN

Cancer is the second leading cause of death among children between the ages of 1 and 14 in the United States; accidents are the most frequent cause of death in this age group (Table 12). The most commonly occurring cancers in children (0 to 14 years) are leukemia (particularly acute lymphocytic leukemia), brain and other nervous system cancers, soft tissue sarcomas, non-Hodgkin lymphoma, and renal (Wilms) tumor.³ Over the past 25 years, there have been significant improvements in the 5-year relative survival rate for many childhood cancers, including non-Hodgkin lymphoma, acute lymphocytic leukemia, acute myeloid leukemia, and Wilms tumor (Table 13).³ The 5-year relative survival rate among children for all cancer sites combined improved from 56% for patients diagnosed in 1974 to 1976 to 79% for those diagnosed in 1995 to 2000.³

LIMITATIONS AND FUTURE CHALLENGES

Estimates of the expected numbers of new cancer cases and cancer deaths should be inter-

preted cautiously. These estimates may vary considerably from year to year, particularly for less common cancers and in states with smaller populations. Unanticipated changes may occur that are not captured by our modeling efforts. The estimates of new cancer cases are based on incidence rates for the geographic locations that participate in the SEER program and therefore may not be representative of the entire United States. For these reasons, we discourage the use of these estimates to track year-to-year changes in cancer occurrence and mortality. The recorded number of cancer deaths and cancer death rates from the NCHS and cancer incidence rates from SEER are generally the preferred data sources for tracking cancer trends, even though these data are 3 and 4 years old, respectively, at the time that the estimates are calculated.

Despite these limitations, the American Cancer Society estimates do provide evidence of current patterns of cancer incidence and mortality in the United States. Such estimates will assist in continuing efforts to reduce the public health burden of cancer.

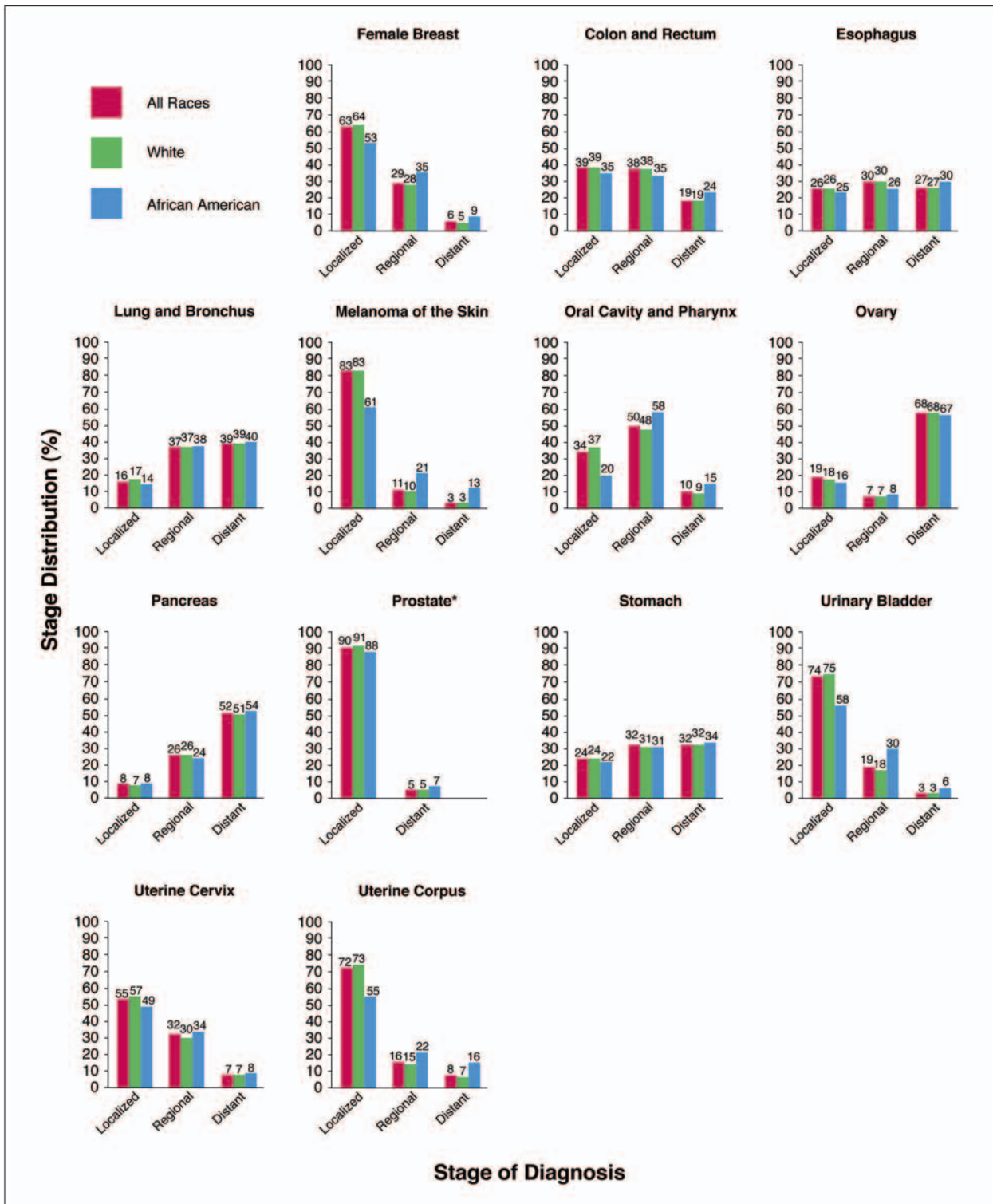


FIGURE 7 Distribution of Cancer Cases for Selected Cancer Types, by Race and Stage at Diagnosis, US, 1995-2000.

*The rate for localized stage represents localized and regional stages combined.

Note: Staging according to Surveillance, Epidemiology, and End Results (SEER) historic stage categories rather than the American Joint Committee on Cancer (AJCC) staging system. For each type and race, stage categories do not total 100% because sufficient information is not available to assign a stage to all cancer cases.

Source: Ries LAG, Eisner MP, Kosary CL, et al.³

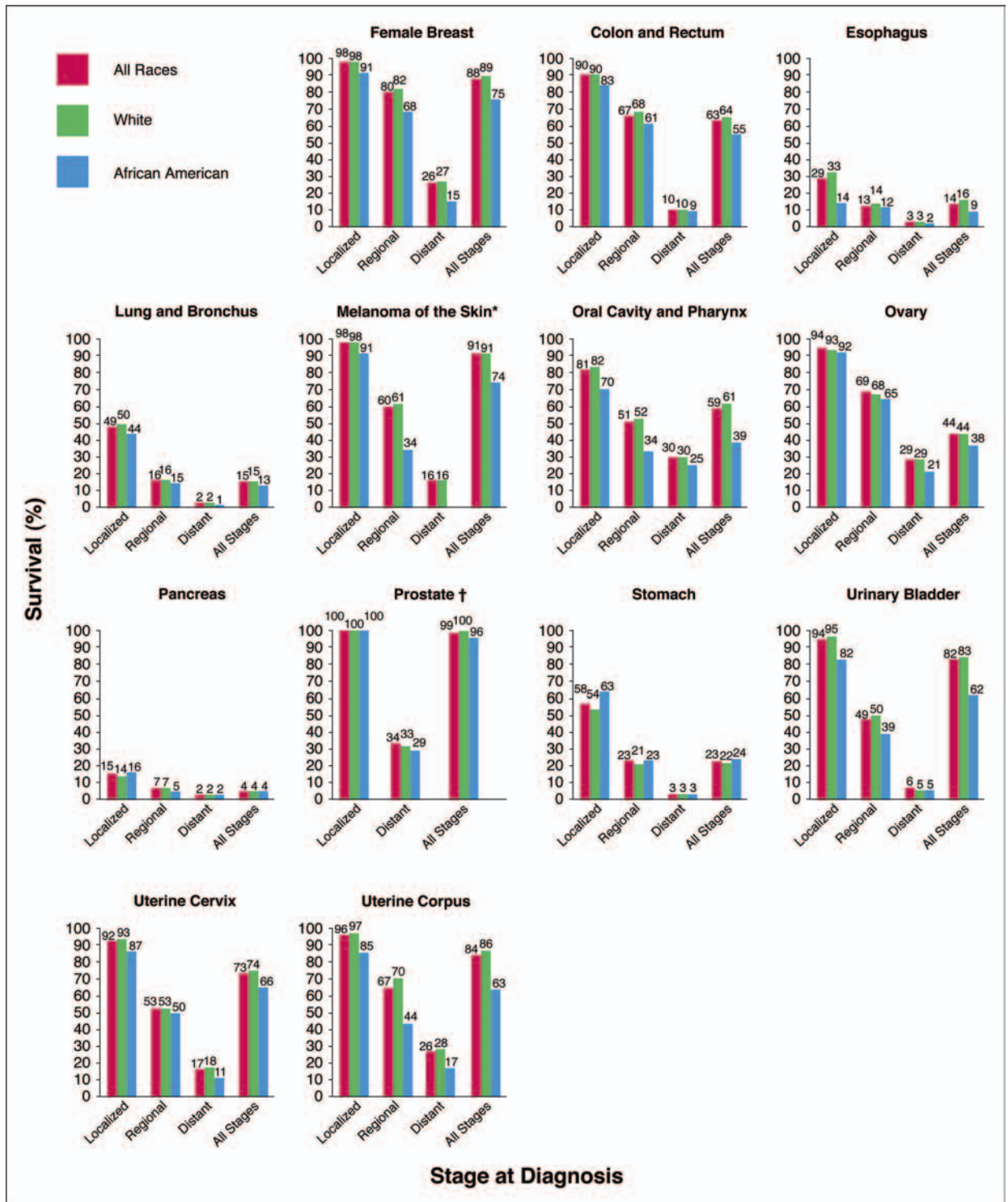


FIGURE 8 Five-year Relative Survival Rates Among Patients Diagnosed with Selected Cancer Types, by Race and Stage at Diagnosis, US, 1995-2000.

*Data for distant stage melanoma of the skin for African American is not shown.

†The rate for localized stage represents localized and regional stages combined.

Note: Staging according to Surveillance, Epidemiology, and End Results (SEER) historic stage categories rather than the American Joint Committee on Cancer (AJCC) staging system.

Source: Ries LAG, Eisner MP, Kosary CL, et al.³

TABLE 11 Trends in Five-year Relative Survival Rates* (%) for Selected Cancer Sites, by Race and Year of Diagnosis, United States, 1974 to 2000

Site	Relative Five-year Survival Rate (%)								
	White			African American			All Races		
	1974 to 1976	1983 to 1985	1995 to 2000	1974 to 1976	1983 to 1985	1995 to 2000	1974 to 1976	1983 to 1985	1995 to 2000
All Cancers	51	54	66†	39	40	55†	50	53	64†
Brain & ONS‡	22	26	32†	27	32	38†	22	27	33†
Breast (female)	75	79	89†	63	64	75†	75	78	88†
Colon	51	59	64†	46	50	54†	50	58	63†
Esophagus	5	9	16†	4	6	9†	5	8	14†
Hodgkin disease	72	79	86†	69	77	80†	71	79	85†
Kidney & renal pelvis	52	56	64†	49	55	64†	52	56	64†
Larynx	66	69	67	60	55	51	66	67	65
Leukemia	35	42	48†	31	34	39	34	41	46†
Liver & bile duct	4	6	8†	1	4	5†	4	6	8†
Lung & bronchus	13	14	15†	12	11	13†	13	14	15†
Melanoma of the skin	81	85	91†	67§	75¶	74§	80	85	91†
Myeloma	24	27	32†	28	31	32	25	28	32†
Non-Hodgkin lymphoma	48	55	60†	49	45	51	47	54	59†
Oral cavity & pharynx	55	55	61†	36	35	39	54	53	59†
Ovary**	37	40	44†	41	42	38	37	41	44†
Pancreas	3	3	4†	3	5	4†	3	3	4†
Prostate	68	76	100†	58	64	96†	67	75	99†
Rectum	49	56	65†	42	44	55†	49	55	64†
Stomach	15	16	22†	16	19	24†	15	17	23†
Testis	79	91	96†	76§	88§	87	79	91	96†
Thyroid	92	93	97†	88	92	95	92	94	97†
Urinary bladder	74	78	83†	48	60	62†	73	78	82†
Uterine cervix	70	71	74†	64	61	66	69	69	73†
Uterine corpus	89	85	86†	62	54	63	88	83	84†

*Survival rates are adjusted for normal life expectancy and are based on cases diagnosed from 1974 to 1976, 1983 to 1985, and 1995 to 2000, and followed through 2001.

†The difference in rates between 1974 to 1976 and 1995 to 2000 is statistically significant ($P < 0.05$).

‡ONS, other nervous system.

§The standard error of the survival rate is between 5 and 10 percentage points.

¶The standard error of the survival rate is greater than 10 percentage points.

**Recent changes in classification of ovarian cancer, namely excluding borderline ovarian tumors, have affected 1995-2000 survival rates. Source: Ries LAG, Eisner MP, Kosary CL, et al.³

TABLE 12 Fifteen Leading Causes of Death Among Children Aged 1 to 14, United States, 2002

Rank	Cause of Death	Number of Deaths	Percent (%) of Total Deaths*	Death Rate†
	All Causes	12,008	100.0	21.2
1	Accidents (unintentional injuries)	4,359	36.3	7.7
2	Cancer	1,474	12.3	2.6
3	Congenital anomalies	947	7.9	1.7
4	Assault (homicide)	779	6.5	1.4
5	Heart diseases	420	3.5	0.7
6	Intentional self-harm (suicide)	264	2.2	0.5
7	Chronic lower respiratory disease	201	1.7	0.4
8	Influenza & pneumonia	201	1.7	0.4
9	Septicemia	174	1.4	0.3
10	In situ & benign neoplasms	149	1.2	0.3
11	Cerebrovascular disease	144	1.2	0.3
12	Anemias	74	0.6	0.1
13	Meningitis	50	0.4	0.1
14	Diabetes mellitus	37	0.3	0.1
15	Nephritis, nephrotic syndrome, & nephrosis	35	0.3	0.1
	All other causes	2,700	22.5	

*Percentages may not total 100 due to rounding. Symptoms, signs, and abnormalities, events of undetermined intent, certain perinatal conditions, and complications from treatment were excluded from ranking order.

†Rates are per 100,000 population and age-adjusted to the 2000 US standard population.

Source: US Mortality Public Use Data Tapes, 2002, National Center for Health Statistics, Centers for Disease Control and Prevention, 2004.

TABLE 13 Trends in Five-year Relative Cancer Survival Rates* (%) for Children Under Age 15, United States, 1974 to 2000

Site	Five-year Relative Survival Rates (%)						
	Year of Diagnosis						
	1974 to 1976	1977 to 1979	1980 to 1982	1983 to 1985	1986 to 1988	1989 to 1991	1995 to 2000
All sites	56	62	65	68	71	73	79†
Acute lymphocytic leukemia	53	67	71	69	78	80	85†
Acute myeloid leukemia	14	26‡	25‡	30‡	33‡	36‡	53†
Bones & joints	55‡	52‡	54‡	57‡	63‡	62	73†
Brain & other nervous system	55	56	56	62	63	62	73†
Hodgkin disease	78	84	91	90	90	94	96†
Neuroblastoma	53	53	53	55	60	68	66†
Non-Hodgkin lymphoma	45	50	61	71	70	75	85†
Soft tissue	60	68	65	70	67	78	75†
Wilms tumor	74	78	86	87	91	93	92†

*Survival rates are adjusted for normal life expectancy and are based on follow-up of patients through 2001.

†The difference in rates between 1974 to 1976 and 1995 to 2000 is statistically significant ($P < 0.05$).

‡The standard error of the survival rate is between 5 and 10 percentage points.

Note: "All sites" excludes basal and squamous cell skin cancers and in situ carcinomas except urinary bladder.

Source: Ries LAG, Eisner MP, Kosary CL, et al.³

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Erratum

In the January/February 2005 issue, in the article “Cancer Statistics, 2005” (Jemal A, Murray T, Ward E, Samuels A, et al. *CA Cancer J Clin* 2005;55:10–30), an error appeared in the text on page 20.

The statement that read, “A total of 476,009 people under age 85 died from cancer in the United States in 2002 compared with 450,637 deaths from heart disease,” was incorrect.

The statement regarding the number of deaths from cancer and heart diseases in 2002 should read: “A total of 478,082 people under age 85 died from cancer in the United States in 2002 compared with 446,727 deaths from heart disease.”

The authors apologize for this error and any confusion it may have caused.