

Table XXII-1
PROSTATE CANCER (Invasive)

TRENDS IN SEER INCIDENCE AND U.S. MORTALITY, BY RACE

	All Races, Males	White Males	Black Males
<u>INCIDENCE TRENDS (expressed in percents)§:</u>			
<u>1973-96</u>			
All Ages			
Percent Change (PC)	111.9	104.2	107.6
Est. Annual PC (EAPC)	4.4★	4.3★	3.9★
Under 65			
Percent Change (PC)	306.3	307.9	254.2
Est. Annual PC (EAPC)	6.8★	6.9★	5.8★
65 and over			
Percent Change (PC)	71.7	64.0	64.6
Est. Annual PC (EAPC)	3.6★	3.5★	3.2★
<u>1975-79 - ALL AGES</u>			
Percent Change (PC)	6.2	6.3	8.0
Est. Annual PC (EAPC)	2.2★	2.4★	2.6
<u>1992-96 - ALL AGES</u>			
Percent Change (PC)	-24.0	-26.2	-18.9
Est. Annual PC (EAPC)	-8.5★◆	-9.5★◆	-6.0★◆
<u>MORTALITY TRENDS (expressed in percents)*:</u>			
<u>1973-96</u>			
All Ages			
Percent Change (PC)	13.0	10.6	35.3
Est. Annual PC (EAPC)	0.9★	0.8★	1.6★
Under 65			
Percent Change (PC)	-4.7	-5.9	-1.1
Est. Annual PC (EAPC)	0.2	0.2	0.2
65 and over			
Percent Change (PC)	15.3	12.5	42.1
Est. Annual PC (EAPC)	1.0★	0.9★	1.9★
<u>1975-79 - ALL AGES</u>			
Percent Change (PC)	3.5	3.3	5.0
Est. Annual PC (EAPC)	1.2★	1.1★	1.6★
<u>1992-96 - ALL AGES</u>			
Percent Change (PC)	-7.5	-8.0	-4.1
Est. Annual PC (EAPC)	-2.5★◆	-2.7★◆	-1.2◆

The Est. Annual PC is the Estimated Annual Percent Change (EAPC) over the time interval.
 SEER Program.
 NCHS public use tape.
 ★ The EAPC is significantly different from zero (p<.05).
 ◆ The EAPC for 1992-96 is significantly different from the EAPC for 1975-79 (p<.05).
 ◇ The EAPC for 1992-96 is significantly different from the EAPC for 1975-79 (p<.10).
 - Statistic could not be calculated.

Table XXII-2
PROSTATE CANCER (Invasive)SEER INCIDENCE RATES, AGE-ADJUSTED AND AGE-SPECIFIC RATES[§], BY RACE

	All Races, Males	White Males	Black Males
<u>AGE-ADJUSTED RATES</u>			
<u>YEAR OF DIAGNOSIS:</u>			
1973	64.2	62.6	106.3
1974	65.6	64.8	100.7
1975	70.6	69.0	111.5
1976	73.5	72.7	110.4
1977	76.1	74.5	122.2
1978	75.1	73.6	116.6
1979	78.0	77.1	123.1
1980	79.8	78.8	126.6
1981	82.1	81.0	127.0
1982	82.2	81.3	130.7
1983	84.8	83.9	134.6
1984	84.6	83.0	139.6
1985	88.3	87.2	133.8
1986	91.4	91.1	132.6
1987	103.0	103.1	148.2
1988	106.2	106.5	148.7
1989	113.0	113.1	150.2
1990	132.5	133.4	168.4
1991	169.2	169.3	222.9
1992	190.8	188.7	258.0
1993	171.1	163.9	271.6
1994	148.4	141.0	246.9
1995	139.3	132.3	218.3
1996	135.7	127.8	211.3
<u>AGE-ADJUSTED RATES, 1992-96</u>			
<u>AGE AT DIAGNOSIS:</u>			
All ages	156.5	150.2	240.4
Under 65	49.6	47.5	89.1
65 and over	1131.9	1087.2	1622.1
All ages (world std.) [§]	118.2	113.5	184.7
<u>AGE-SPECIFIC RATES, 1992-96</u>			
<u>AGE AT DIAGNOSIS:</u>			
0-4	0.0	0.1	0.0
5-9	0.0	0.0	0.0
10-14	0.0	0.0	0.0
15-19	0.0	0.1	0.0
20-24	0.0	0.0	0.2
25-29	0.0	0.0	0.2
30-34	0.1	0.1	0.0
35-39	0.4	0.3	0.3
40-44	3.8	3.3	7.9
45-49	23.0	21.0	49.1
50-54	103.0	96.6	197.6
55-59	272.7	260.8	507.6
60-64	568.2	548.9	969.8
65-69	951.1	920.9	1397.8
70-74	1255.1	1212.1	1878.6
75-79	1277.4	1211.5	1804.2
80-84	1182.4	1123.1	1551.2
85+	1079.0	1036.6	1380.1

[§] SEER Program. Rates are per 100,000 and are age-adjusted to the 1970 U.S. standard population, except where noted.
[§] SEER Program. Rates are per 100,000 and are age-adjusted to the world standard population.

Table XXII-3
PROSTATE CANCER (Invasive)

U.S. MORTALITY RATES, AGE-ADJUSTED AND AGE-SPECIFIC RATES*, BY RACE

	All Races, Males	White Males	Black Males
<u>AGE-ADJUSTED RATES</u>			
<u>YEAR OF DEATH:</u>			
1973	21.7	20.3	39.5
1974	21.7	20.2	39.7
1975	21.6	20.1	40.6
1976	22.1	20.6	40.8
1977	22.1	20.6	41.2
1978	22.6	21.0	42.5
1979	22.7	21.1	43.0
1980	22.8	21.1	44.6
1981	22.9	21.0	45.8
1982	23.0	21.3	44.7
1983	23.4	21.6	46.6
1984	23.4	21.5	47.1
1985	23.4	21.5	48.1
1986	24.1	22.2	48.3
1987	24.1	22.2	49.1
1988	24.7	22.8	49.5
1989	25.4	23.5	51.1
1990	26.4	24.3	54.8
1991	26.7	24.7	54.9
1992	26.6	24.5	55.6
1993	26.4	24.3	56.2
1994	25.9	23.8	55.1
1995	24.9	22.9	53.5
1996	24.1	22.0	53.7
<u>AGE-ADJUSTED RATES, 1992-96</u>			
<u>AGE AT DEATH:</u>			
All ages	25.6	23.4	54.8
Under 65	2.7	2.3	7.1
65 and over	234.3	216.3	490.4
All ages (world std.)N	16.7	15.2	36.4
<u>AGE-SPECIFIC RATES, 1992-96</u>			
<u>AGE AT DEATH:</u>			
0-4	0.0	0.0	0.0
5-9	0.0	0.0	0.0
10-14	0.0	0.0	0.0
15-19	0.0	0.0	0.0
20-24	0.0	0.0	0.0
25-29	0.0	0.0	0.0
30-34	0.0	0.0	0.0
35-39	0.1	0.0	0.1
40-44	0.2	0.2	0.6
45-49	1.0	0.8	3.0
50-54	4.1	3.5	10.6
55-59	13.0	11.0	34.0
60-64	35.2	30.4	91.8
65-69	78.5	69.4	188.2
70-74	155.4	139.5	379.2
75-79	269.7	249.2	576.3
80-84	464.2	431.9	967.4
85+	801.8	763.9	1349.9

* NCHS public use tape. Rates are per 100,000 and are age-adjusted to the 1970 U.S. standard population, except where noted.

N NCHS public use tape. Rates are per 100,000 and are age-adjusted to the world standard population.

Table XXII-4
PROSTATE CANCER (Invasive)SURVIVAL RATES, BY RACE, DIAGNOSIS YEAR, STAGE AND AGE

	All Races, Males	White Males	Black Males
<u>5-YR RELATIVE SURVIVAL RATES</u>			
YEAR OF DIAGNOSIS:			
1960-63 ^a	-	50	35
1970-73 ^a	-	63	55
1974-76 ^b	67.1	68.1	58.3
1977-79 ^b	71.1	72.2	62.5
1980-82 ^b	73.4	74.5	64.7
1983-85 ^b	74.7	76.2	64.1
1986-88 ^b	81.0	82.6	69.0
1989-95 ^b	91.9S	93.1S	83.6S
1989-95 ^b			
ALL STAGES	91.9	93.1	83.6
LOCAL/REGIONAL	99.6	100.0	94.9
DISTANT	32.3	31.9	29.5
UNSTAGED	85.4	86.2	81.7
<u>STAGE DISTRIBUTION (%) 1989-95^b</u>			
ALL STAGES			
Number of cases	107,208	90,879	11,426
Percent	100%	100%	100%
LOCAL/REGIONAL	79	80	72
DISTANT	9	8	13
UNSTAGED	13	13	15
<u>5-YR RELATIVE SURVIVAL RATES, 1989-95^b</u>			
AGE AT DIAGNOSIS:			
<45	81.6	80.6	81.9†
45-54	89.8	90.3	88.7
55-64	93.4	94.6	85.9
65-74	95.0	95.9	88.3
75+	88.7	90.2	74.2
Under 65	92.7	93.8	86.1
65 and over	92.3	93.5	83.4

^a
^b

Rates are based on End Results data from a series of hospital registries and one population-based registry. Rates are from the SEER Program. They are based on data from population-based registries in Connecticut, New Mexico, Utah, Iowa, Hawaii, Atlanta, Detroit, Seattle-Puget Sound and San Francisco-Oakland. Rates are based on follow-up of patients through 1996.

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The difference in rates between 1974-76 and 1989-95 is statistically significant ($p < .05$).
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.
Statistic could not be calculated.

Table XXII-5
PROSTATE CANCER (Invasive)

INCIDENCE, MORTALITY, AND SURVIVAL RATES

By Year of Diagnosis/Death

All Races, Males

Year of Diagnosis/Death

	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Incidence																						
SEER	70.6	73.5	76.1	75.1	78.0	79.8	82.1	82.2	84.8	84.6	88.3	91.4	103.0	106.2	113.0	132.5	169.2	190.8	171.1	148.4	139.3	135.7
Mortality																						
U.S.	21.6	22.1	22.1	22.6	22.7	22.8	22.9	23.0	23.4	23.4	23.4	24.1	24.1	24.7	25.4	26.4	26.7	26.6	26.4	25.9	24.9	24.1
SEER	22.0	23.4	22.3	23.3	23.1	23.3	22.9	23.4	23.8	22.9	23.6	24.2	24.7	24.3	25.4	25.5	26.4	26.3	25.5	25.5	23.9	23.3
Relative Survival Rates (SEER)																						
1-year	90.7	91.2	92.0	92.2	93.3	93.4	94.1	94.2	94.6	94.8	95.2	95.0	95.5	96.4	96.9	97.6	98.9	99.7	99.5	99.3	98.9	
2-year	83.8	84.4	85.5	85.1	86.9	87.7	88.3	88.1	89.1	89.2	88.8	89.3	91.5	92.7	93.8	94.7	97.5	98.5	98.4	98.2		
3-year	77.2	78.2	78.9	79.7	80.9	81.5	82.7	83.1	83.7	83.3	83.9	84.2	87.1	88.9	90.4	92.4	96.1	97.9	97.2			
4-year	72.4	73.2	74.0	74.5	76.4	76.9	77.6	77.9	78.3	78.9	79.4	80.4	83.8	86.1	87.9	90.6	94.9	97.4				
5-year	67.2	69.2	70.0	70.7	72.6	72.4	74.1	73.6	74.1	74.3	75.8	77.7	81.0	83.7	85.5	89.4	93.6					
6-year	63.5	65.4	66.5	68.3	69.9	68.6	71.0	69.4	70.7	71.8	73.0	74.7	78.7	81.5	83.5	88.0						
7-year	60.3	63.2	63.7	64.7	66.5	64.9	66.9	65.7	66.8	70.0	70.8	72.6	76.2	78.6	81.9							
8-year	57.2	60.2	60.9	62.0	63.8	61.3	64.4	63.0	63.6	67.5	68.4	71.1	74.3	76.9								
9-year	54.4	57.7	59.2	59.1	61.3	59.1	62.1	60.7	62.0	65.4	66.4	68.7	72.6									
10-year	51.8	55.4	57.4	56.6	58.9	56.6	59.7	59.5	60.7	64.2	64.3	66.8										
11-year	50.6	52.1	54.3	54.4	56.6	55.1	57.2	57.5	59.0	61.9	61.7											
12-year	48.4	50.3	52.2	52.8	54.2	52.9	55.3	56.1	57.6	60.0												
13-year	46.7	48.3	51.5	51.5	51.6	51.5	54.3	53.9	56.2													
14-year	45.5	47.4	49.0	50.5	49.5	50.6	53.0	52.5														
15-year	45.1	46.8	47.8	49.5	48.0	49.9	51.8															
16-year	43.3	44.6	46.3	47.6	47.2	48.9																
17-year	42.6	43.1	44.4	45.9	46.0																	
18-year	41.6	40.7	43.4	44.7																		
19-year	41.6	40.7	42.6																			
20-year	41.1	40.6																				
21-year	37.3																					

Note: Incidence and mortality rates are per 100,000 and are age-adjusted to the 1970 U.S. standard population.
Survival rates are relative rates expressed as percents.

Table XXII-6
PROSTATE CANCER (Invasive)

Percent Diagnosed With Cancer In 10, 20 and 30 Years and In Remaining Lifetime,
 Given Cancer Free At Current Age By Race

Lifetime Risk (Percent) of Being Diagnosed With Cancer and
 Lifetime Risk (Percent) of Dying From Cancer

SEER Areas, 1994-96

All Races

Current Age	+10 yrs	+20 yrs	+30 yrs	Eventually
0	0.00	0.00	0.00	15.91
10	0.00	0.00	0.00	16.08
20	0.00	0.00	0.14	16.19
30	0.00	0.15	1.86	16.45
40	0.15	1.90	7.44	16.87
50	1.83	7.61	14.21	17.46
60	6.39	13.69	16.72	17.28

Lifetime Risk of Being Diagnosed = 15.91%
 Lifetime Risk of Dying = 3.53%

Whites

Current Age	+10 yrs	+20 yrs	+30 yrs	Eventually
0	0.00	0.00	0.00	15.44
10	0.00	0.00	0.00	15.58
20	0.00	0.00	0.13	15.67
30	0.00	0.13	1.77	15.88
40	0.13	1.81	7.21	16.23
50	1.74	7.35	13.65	16.71
60	6.15	13.06	15.89	16.42

Lifetime Risk of Being Diagnosed = 15.44%
 Lifetime Risk of Dying = 3.49%

Blacks

Current Age	+10 yrs	+20 yrs	+30 yrs	Eventually
0	0.00	0.00	0.00	17.26
10	0.00	0.00	0.00	17.66
20	0.00	0.00	0.31	17.90
30	0.00	0.32	3.12	18.57
40	0.33	3.29	10.38	19.63
50	3.29	11.15	18.60	21.42
60	9.74	18.96	21.94	22.45

Lifetime Risk of Being Diagnosed = 17.26%
 Lifetime Risk of Dying = 4.28%

Table XXII-7
PROSTATE CANCER (Invasive)

AGE-ADJUSTED SEER INCIDENCE AND U.S. MORTALITY RATES

By Race/Ethnicity and Sex

Incidenceⁱ

RACE/ETHNICITY	Rate 1990-1996	Trend 1990-1996
	Rate per 100,000 persons	EAPC (%)
	Males	Males
All Races	151.9	-2.0
White	147.3	-3.2
White Hispanic	107.4	-0.2
White Non-Hispanic	150.7	-3.3
Black	222.9	1.8
Asian/Pacific Islander [‡]	81.5	0.6
American Indian	46.5	-4.3
Hispanic [⊙]	102.8	-0.3

Mortality[❖]

RACE/ETHNICITY	Rate 1990-1996	Trend 1990-1996
	Rate per 100,000 persons	EAPC (%)
	Males	Males
All Races	25.9	-1.6★
White	23.7	-1.7★
White Hispanic	17.2	0.4
White Non-Hispanic	23.9	-1.6★
Black	54.8	-0.4
Asian/Pacific Islander [‡]	10.7	-1.2
American Indian	14.3	1.2
Hispanic [⊙]	16.7	0.4

- The EAPC is the Estimated Annual Percent Change over the time interval.
 - Statistic not shown. Rate based on less than 25 cases for the time interval. Trend based on less than 10 cases for at least one year within the time interval.
 i Incidence data are from the 11 SEER areas (San Francisco, Connecticut, Detroit, Iowa, New Mexico, Seattle, Utah, Atlanta, San Jose-Monterey, and Los Angeles). Unless specified, other tables use data from 9 SEER areas (San Francisco, Connecticut, Detroit, Iowa, New Mexico, Seattle, Utah, and Atlanta).
 ⊙ Hispanic is not mutually exclusive from whites, blacks, Asian Pacific Islanders, and American Indians. For incidence, all 11 SEER areas are included. For mortality, information is included for all states except Connecticut, Oklahoma, Louisiana, and New Hampshire.
 ❖ Mortality data are analyzed from a public-use file provided by the National Center for Health Statistics (NCHS).
 ‡ Population estimates for the Asian Pacific Islanders rates are adjusted Census Bureau estimates. The population estimates used in Wingo PA, Ries LAG, Rosenberg HM, Miller DS, Edwards BK. Cancer Incidence and mortality, 1973-1996. Cancer 82:1197-207, 1998 were unadjusted.
 ★ The EAPC is significantly different from zero (p<.05).

Table XXII-8
PROSTATE CANCER (Invasive)AGE-ADJUSTED SEER INCIDENCE RATES§ AND SEER MORTALITY RATES*
By Registry and Race

	All Races, Males	White Males	Black Males
<u>SEER INCIDENCE RATES§, 1992-96</u>			
REGISTRY			
11 registries	153.8	147.4	234.7
9 registries	156.5	150.2	240.4
San Francisco-Oakland	146.4	146.5	198.7
Connecticut	147.9	142.2	236.6
Metropolitan Detroit	195.6	169.0	256.1
Hawaii	114.1	147.3	-
Iowa	142.3	139.6	-
New Mexico	138.1	141.6	-
Seattle-Puget Sound	146.3	144.8	215.2
Utah	164.4	161.6	-
Metropolitan Atlanta	196.2	171.5	274.5
San Jose-Monterey	140.6	137.1	242.1
Los Angeles	148.3	140.2	220.5
<u>SEER MORTALITY RATES*, 1992-96</u>			
REGISTRY			
11 registries	24.3	23.5	49.6
9 registries	24.9	24.0	50.3
San Francisco-Oakland	24.2	24.3	48.5
Connecticut	23.1	21.9	53.9
Metropolitan Detroit	27.9	23.8	45.8
Hawaii	16.8	26.8	-
Iowa	24.2	24.0	-
New Mexico	24.8	24.9	-
Seattle-Puget Sound	24.2	24.1	43.5
Utah	26.2	26.1	-
Metropolitan Atlanta	33.1	25.3	67.4
San Jose-Monterey	21.5	22.7	49.9
Los Angeles	23.1	22.0	48.1

Note: San Jose-Monterey and Los Angeles are new SEER areas as of 1992 and their data are only used in tables where indicated.
 § SEER Program. Incidence rates are per 100,000 and are age-adjusted to the 1970 U.S. standard population.
 * NCHS public use tape. Mortality rates are per 100,000 and are age-adjusted to the 1970 U.S. standard population.
 - Statistic could not be calculated or populations are inadequate.

Table XXII-9
PROSTATE CANCER (Invasive)

AVERAGE ANNUAL AGE-ADJUSTED CANCER MORTALITY* RATES BY STATE, 1992-96

All Races, Males

State	Rate	SE	Rank	PD	State	Rate	SE	Rank	PD
TOTAL U.S.	25.6	0.06							
High Five States									
District of Columbia	45.4⊕*	1.80	(01)	77.3					
South Carolina	32.8⊕*	0.64	(02)	28.1					
Mississippi	32.6⊕*	0.70	(03)	27.3					
Georgia	31.7⊕*	0.49	(04)	23.8					
Louisiana	30.8⊕*	0.57	(05)	20.3					
Low Five States									
Florida	23.1⊕	0.21	(47)	-9.8					
California	23.0⊕*	0.18	(48)	-10.2					
Nebraska	21.5⊕*	0.66	(49)	-16.0					
Alaska	20.8*	1.98	(50)	-18.8					
Hawaii	16.8⊕*	0.71	(51)	-34.4					
Alabama	28.7⊕*	0.52	(11)	12.1	Montana	26.9	1.03	(17)	5.1
Alaska	20.8*	1.98	(50)	-18.8	Nebraska	21.5⊕*	0.66	(49)	-16.0
Arizona	23.2⊕	0.45	(45)	-9.4	Nevada	24.9	0.89	(31)	-2.7
Arkansas	27.1	0.60	(15)	5.9	New Hampshire	24.6	0.95	(36)	-3.9
California	23.0⊕*	0.18	(48)	-10.2	New Jersey	26.3	0.35	(21)	2.7
Colorado	23.9	0.56	(42)	-6.6	New Mexico	24.8	0.80	(33)	-3.1
Connecticut	23.1⊕	0.50	(46)	-9.8	New York	24.6	0.23	(35)	-3.9
Delaware	30.0*	1.33	(07)	17.2	North Carolina	30.4⊕*	0.43	(06)	18.8
District of Columbia	45.4⊕*	1.80	(01)	77.3	North Dakota	28.8*	1.18	(10)	12.5
Florida	23.1⊕	0.21	(47)	-9.8	Ohio	26.1	0.30	(24)	2.0
Georgia	31.7⊕*	0.49	(04)	23.8	Oklahoma	23.5	0.51	(44)	-8.2
Hawaii	16.8⊕*	0.71	(51)	-34.4	Oregon	24.8	0.52	(32)	-3.1
Idaho	26.7	0.95	(18)	4.3	Pennsylvania	25.8	0.26	(28)	0.8
Illinois	25.8	0.30	(27)	0.8	Rhode Island	23.7	0.89	(43)	-7.4
Indiana	25.4	0.42	(29)	-0.8	South Carolina	32.8⊕*	0.64	(02)	28.1
Iowa	24.2	0.52	(39)	-5.5	South Dakota	27.0	1.08	(16)	5.5
Kansas	24.1	0.57	(40)	-5.9	Tennessee	26.4	0.45	(19)	3.1
Kentucky	25.2	0.51	(30)	-1.6	Texas	25.8	0.26	(26)	0.8
Louisiana	30.8⊕*	0.57	(05)	20.3	Utah	26.2	0.84	(23)	2.3
Maine	26.4	0.87	(20)	3.1	Vermont	27.9	1.39	(12)	9.0
Maryland	29.3⊕*	0.52	(08)	14.5	Virginia	29.1⊕*	0.46	(09)	13.7
Massachusetts	24.8	0.39	(34)	-3.1	Washington	23.9	0.42	(41)	-6.6
Michigan	26.2	0.33	(22)	2.3	West Virginia	24.4	0.67	(38)	-4.7
Minnesota	25.9	0.46	(25)	1.2	Wisconsin	27.3	0.44	(14)	6.6
Mississippi	32.6⊕*	0.70	(03)	27.3	Wyoming	27.7	1.58	(13)	8.2
Missouri	24.5	0.40	(37)	-4.3					

* NCHS public use tape. Rates are per 100,000 and are age-adjusted to the 1970 U.S. standard population.
SE Standard error of the rate.
PD Percent difference between state rate and total U.S. rate.
* Absolute difference between state rate and total U.S. rate is 10% or more.
⊕ Difference between state rate and total U.S. rate is statistically significant (p<=.0002).

SEER Incidence and U.S. Mortality Prostate, Under 65 Years of Age By Race

White

Black

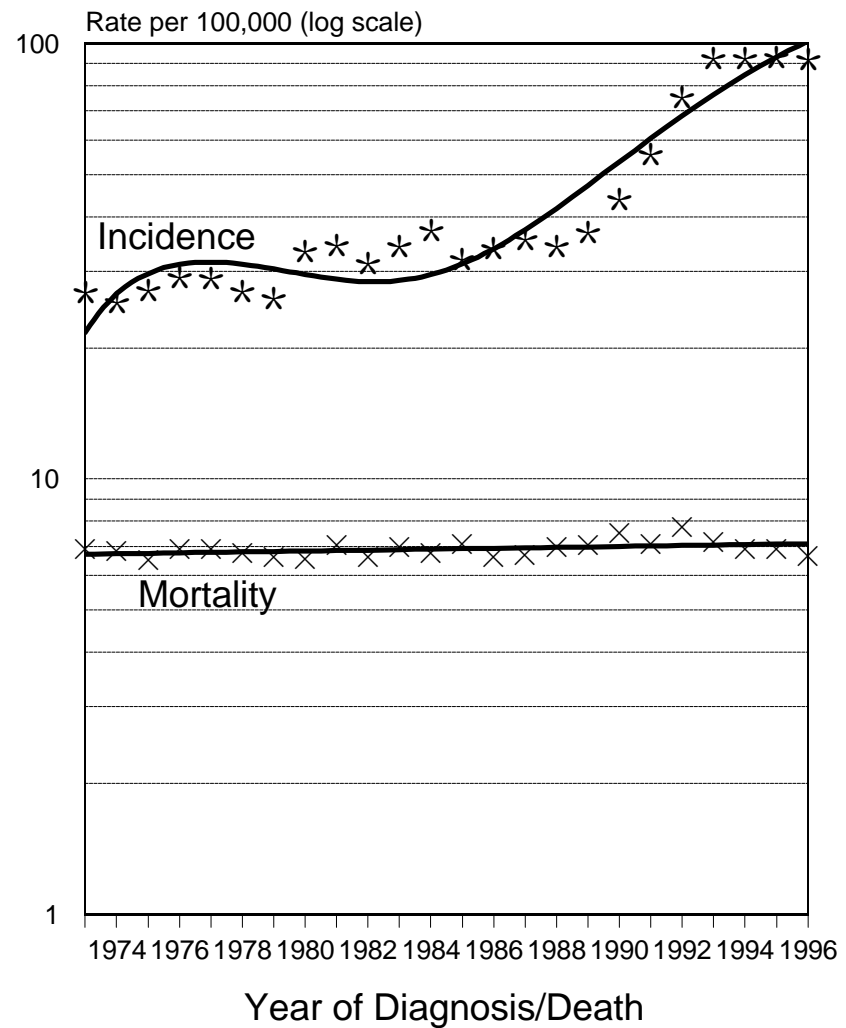
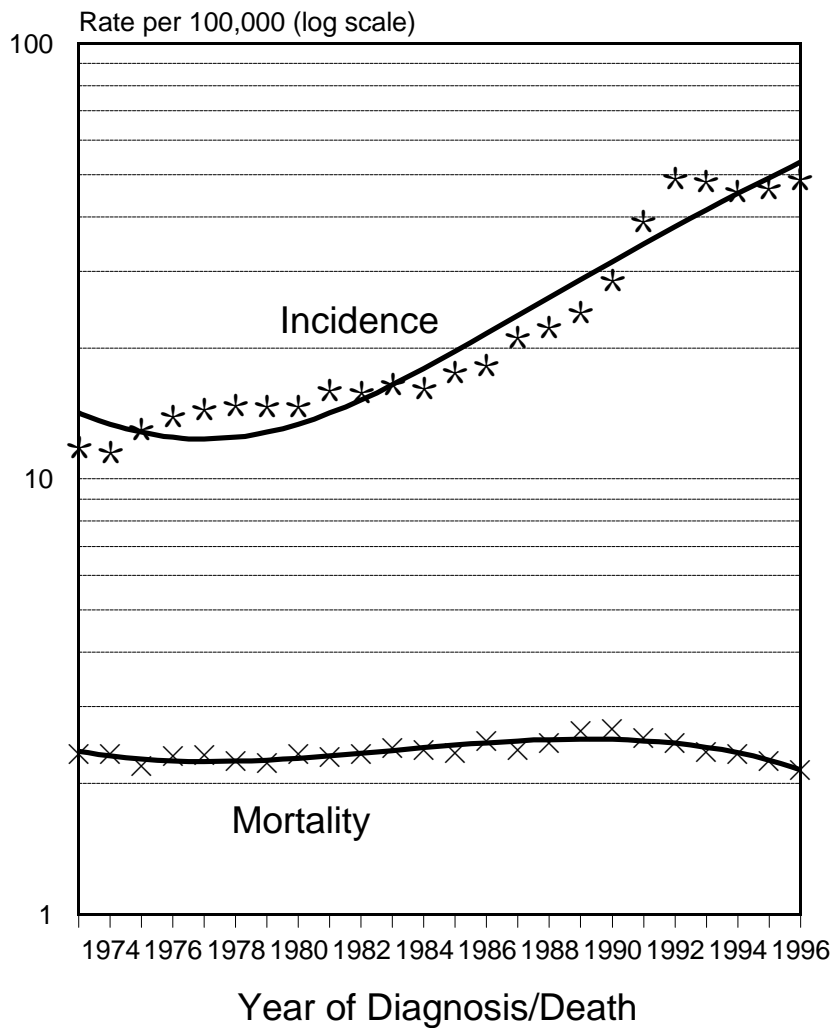
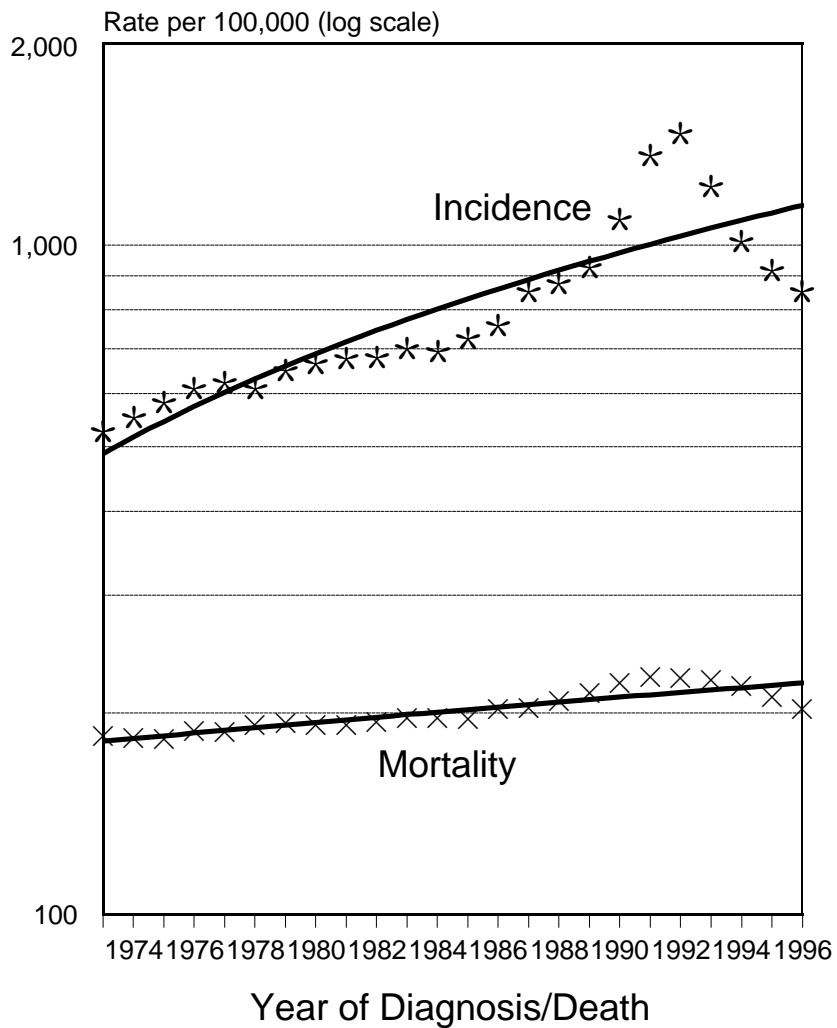


Figure XXII-1

SEER Incidence and U.S. Mortality Prostate, Ages 65 and Over By Race

White



Black

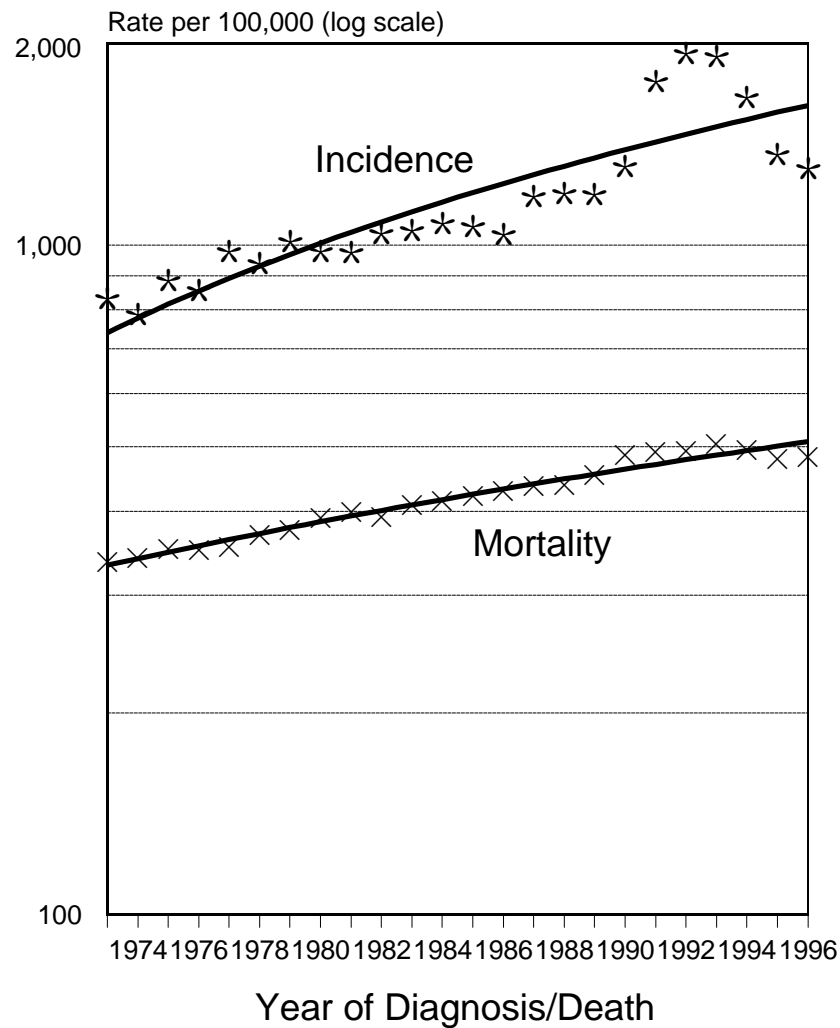
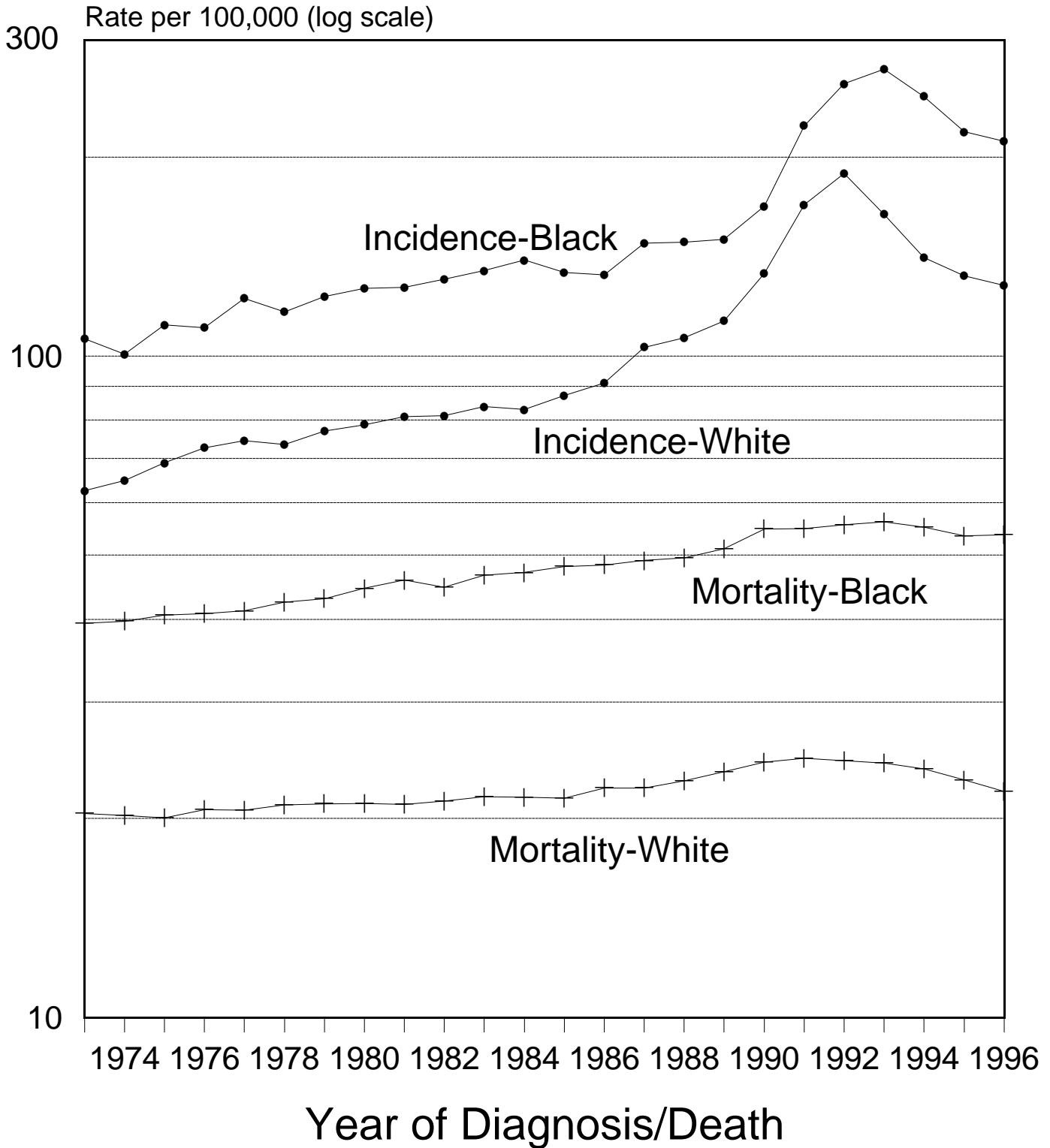


Figure XIII-2

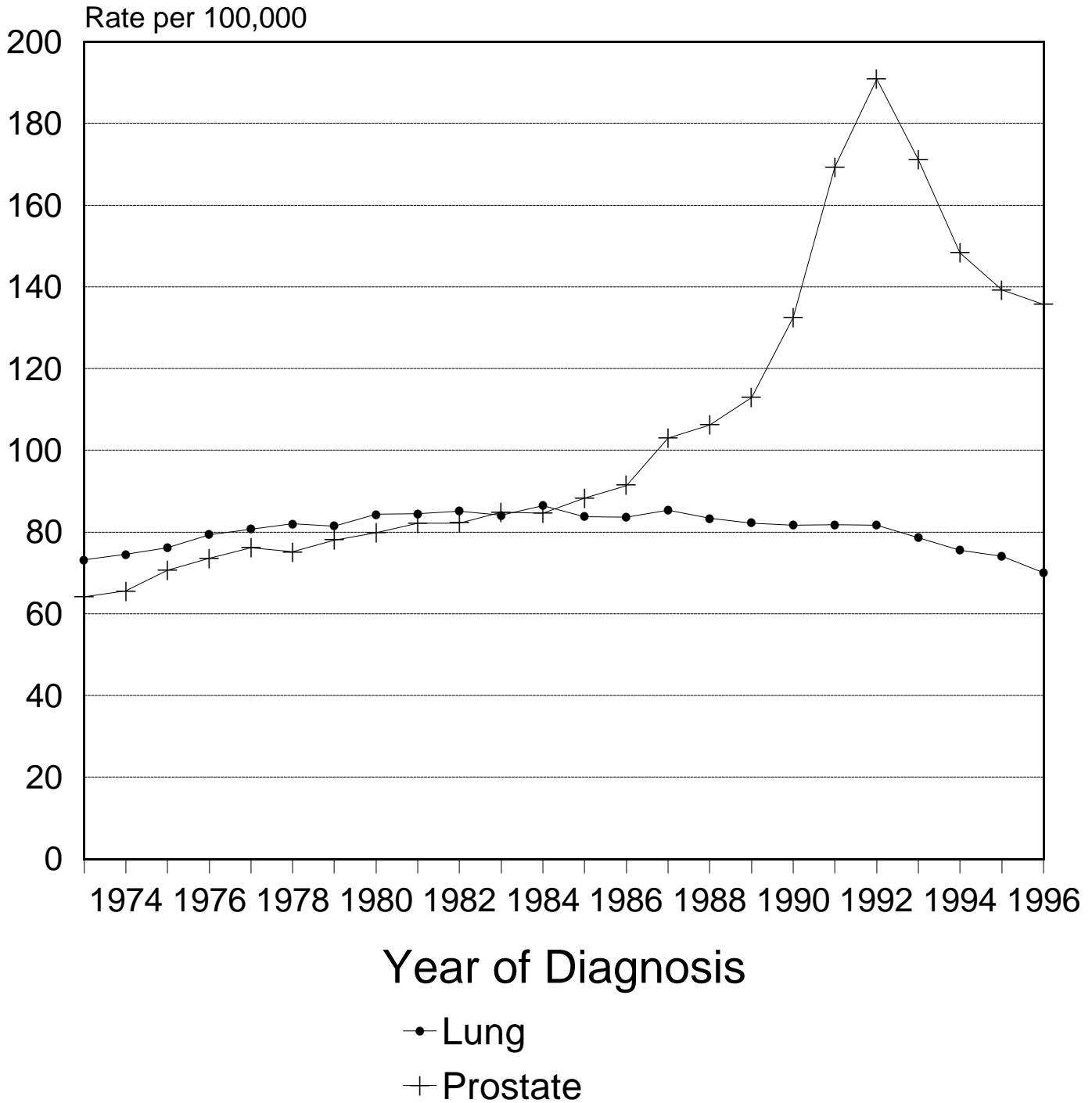
Cancer of the Prostate

U.S. Mortality & SEER Incidence, 1973-1996



Age-adjusted to 1970 Standard

Prostate vs. Lung Cancer Incidence All Races, Males 1973-1996



Age-adjusted to 1970 Standard