

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>1973-93</u>			
All Ages			
Percent Change (PC)	175.9	168.9	148.0
Est. Annual PC (EAPC)	4.8★	4.8★	3.9★
Under 65			
Percent Change (PC)	301.8	310.1	216.8
Est. Annual PC (EAPC)	6.2★	6.4★	4.6★
65 and over			
Percent Change (PC)	149.9	141.1	127.8
Est. Annual PC (EAPC)	4.4★	4.4★	3.6★
<u>1975-79 - ALL AGES</u>			
Percent Change (PC)	6.2	6.2	8.0
Est. Annual PC (EAPC)	2.2★	2.3★	2.6
<u>1989-93 - ALL AGES</u>			
Percent Change (PC)	46.5	40.5	60.2
Est. Annual PC (EAPC)	12.4◆	10.8	16.4★◆
<u>MORTALITY TRENDS (expressed in percents)δ:</u>			
<u>1973-93</u>			
All Ages			
Percent Change (PC)	22.5	20.3	41.8
Est. Annual PC (EAPC)	1.1★	1.0★	1.9★
Under 65			
Percent Change (PC)	4.4	3.3	8.6
Est. Annual PC (EAPC)	0.5★	0.6★	0.4★
65 and over			
Percent Change (PC)	24.8	22.2	47.9
Est. Annual PC (EAPC)	1.2★	1.1★	2.1★
<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>1989-93 - ALL AGES</u>			
Percent Change (PC)	2.5	1.9	6.0
Est. Annual PC (EAPC)	0.9	0.7	2.2★

The Est. Annual PC is the Estimated Annual Percent Change (EAPC) over the time interval.

§ SEER Program.

δ NCHS public use tape.

★ The EAPC is significantly different from zero ($p < .05$).

◆ The EAPC for 1989-93 is significantly different from the EAPC for 1975-79 ($p < .05$).

◇ The EAPC for 1989-93 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^S, BY RACE

	All Races, Males	White Males	Black Males
<u>AGE-ADJUSTED RATES</u>			
YEAR OF DIAGNOSIS:			
1973	64.2	62.5	106.3
1974	65.6	64.8	100.7
1975	70.6	68.9	111.5
1976	73.5	72.6	110.2
1977	76.1	74.4	122.2
1978	75.1	73.4	116.5
1979	78.0	77.0	123.1
1980	79.8	78.7	126.6
1981	82.0	80.8	126.9
1982	82.2	81.2	130.6
1983	84.8	83.8	134.1
1984	84.5	82.8	139.8
1985	88.1	87.0	133.1
1986	91.1	90.7	131.6
1987	102.9	102.7	147.2
1988	106.0	105.7	147.8
1989	112.6	112.1	148.4
1990	131.8	131.7	172.1
1991	168.3	166.4	220.3
1992	189.4	184.5	251.4
1993	168.6	158.0	261.9
<u>AGE-ADJUSTED RATES, 1989-93</u>			
AGE AT DIAGNOSIS:			
All ages	154.5	150.7	211.7
Under 65	38.2	37.3	60.3
65 and over	1216.2	1186.5	1593.7
All ages (world std.) ^λ	112.7	110.1	156.7
<u>AGE-SPECIFIC RATES, 1989-93</u>			
AGE AT DIAGNOSIS:			
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	0.1	0.0
20-24	0.0	0.0	0.0
25-29	0.0	0.0	0.3
30-34	0.1	0.1	0.0
35-39	0.2	0.2	0.2
40-44	2.5	2.2	4.6
45-49	13.0	13.0	17.8
50-54	69.1	66.1	117.4
55-59	197.1	191.0	340.0
60-64	471.7	463.8	705.3
65-69	887.0	869.6	1251.9
70-74	1278.2	1262.8	1638.8
75-79	1473.0	1426.1	1889.2
80-84	1510.1	1451.7	1931.6
85+	1420.7	1368.9	1751.6

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

^λ 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^δ, BY RACE

	All Races, Males	White Males	Black Males
<u>AGE-ADJUSTED RATES</u>			
YEAR OF DEATH:			
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	26.5	24.3	54.9
1991	26.8	24.7	55.0
1992	26.7	24.5	55.8
1993	26.5	24.3	56.5
<u>AGE-ADJUSTED RATES, 1989-93</u>			
AGE AT DEATH:			
All ages	26.4	24.3	54.7
Under 65	2.9	2.5	7.3
65 and over	240.6	222.8	487.2
All ages (world std.) ^φ	17.3	15.8	36.5
<u>AGE-SPECIFIC RATES, 1989-93</u>			
AGE AT DEATH:			
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	0.1
35-39	0.0	0.0	0.1
40-44	0.2	0.2	0.4
45-49	0.9	0.7	2.6
50-54	4.3	3.6	11.1
55-59	14.2	12.0	38.1
60-64	38.3	33.8	92.7
65-69	84.6	75.5	201.3
70-74	163.8	148.9	371.5
75-79	282.8	261.7	586.6
80-84	476.7	445.2	939.1
85+	774.4	735.6	1291.8

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

^φ 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	66.8	67.7	58.1
1977-79 ^b	71.0	72.1	62.4
1980-82 ^b	73.4	74.5	64.6
1983-85 ^b	75.8	77.5	63.9
1986-92 ^b	86.7Ω	88.6Ω	73.2Ω
1986-92 ^b			
ALL STAGES	86.7	88.6	73.2
LOCALIZED	99.1	100.0	90.7
REGIONAL	92.7	94.1	80.2
DISTANT	30.3	31.0	25.4
UNSTAGED	80.8	81.8	73.3

STAGE DISTRIBUTION (%) 1986-92^b

ALL STAGES			
Number of cases	86,281	74,806	8,348
Percent	100%	100%	100%
LOCALIZED	58	59	53
REGIONAL	18	18	13
DISTANT	12	11	20
UNSTAGED	12	12	13

5-YR RELATIVE SURVIVAL RATES, 1986-92^b

AGE AT DIAGNOSIS:			
<45	65.7↑	67.0↑	-
45-54	82.3	84.1	72.1
55-64	86.8	88.4	75.6
65-74	90.3	91.9	78.2
75+	83.1	85.5	63.7
Under 65	86.0	87.6	75.0
65 and over	87.2	89.1	72.7

^a Rates are based on End Results data from a series of hospital registries and one population-based registry.

^b 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 1993.

Ω The difference in rates between 1974-76 and 1986-92 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

	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
Incidence																					
SEER	64.2	65.6	70.6	73.5	76.1	75.1	78.0	79.8	82.0	82.2	84.8	84.5	88.1	91.1	102.9	106.0	112.6	131.8	168.3	189.4	168.6
Mortality																					
U.S.	21.7	21.7	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	26.5	26.8	26.7	26.5
SEER	21.7	21.2	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	25.6	26.5	26.4	25.6
Relative Survival Rates (SEER)																					
1-year	87.2	89.7	90.2	91.2	92.1	92.2	93.2	93.3	94.0	94.2	94.5	94.7	95.2	95.5	96.0	96.9	97.3	98.0	99.2	100.0	
2-year	78.3	81.7	83.4	84.4	85.4	85.1	86.8	87.6	88.2	88.0	89.0	89.0	89.2	90.3	92.4	93.7	94.6	95.6	98.2		
3-year	71.9	74.2	76.7	78.3	78.9	79.7	80.7	81.4	82.5	83.0	83.5	83.6	84.7	85.5	88.4	90.2	91.6	93.6			
4-year	65.5	68.0	71.9	73.3	74.0	74.5	76.3	76.7	77.4	77.8	78.5	79.6	80.6	82.1	85.4	87.8	89.4				
5-year	61.0	63.8	66.7	69.2	69.9	70.6	72.5	72.2	73.8	74.0	74.6	75.3	77.3	79.7	83.0	85.8					
6-year	55.9	59.8	63.0	65.4	66.5	68.1	69.9	68.4	71.1	70.2	71.6	73.1	74.8	76.9	80.9						
7-year	52.6	56.8	59.9	63.2	63.6	64.5	66.4	65.1	67.3	66.8	68.0	71.7	72.8	75.1							
8-year	49.2	53.0	56.7	60.2	60.8	61.7	64.0	61.9	65.2	64.5	65.1	69.4	70.6								
9-year	46.8	50.8	53.9	57.7	59.0	59.1	62.0	59.8	63.2	62.3	63.8	67.5									
10-year	44.6	48.1	51.3	55.3	57.6	56.9	59.9	57.5	61.0	61.4	62.8										
11-year	42.6	46.1	50.1	52.5	54.8	55.0	57.9	56.3	58.7	59.6											
12-year	41.4	44.2	48.2	50.9	53.0	53.6	55.8	54.3	57.0												
13-year	39.6	43.2	46.6	49.1	52.5	52.5	53.3	53.1													
14-year	37.9	41.8	45.9	48.5	50.3	51.7	51.3														
15-year	36.8	40.2	45.6	48.0	49.4	50.7															
16-year	35.8	39.6	43.9	46.0	48.0																
17-year	35.8	39.0	43.4	44.7																	
18-year	35.4	39.0	42.4																		
19-year	35.0	38.5																			
20-year	33.5																				

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, 1991-93

All Races				
Current Age	+10 yrs	+20 yrs	+30 yrs	Eventually
0	0.00	0.00	0.00	19.84
10	0.00	0.00	0.00	20.08
20	0.00	0.00	0.09	20.23
30	0.00	0.09	1.54	20.57
40	0.09	1.58	7.77	21.12
50	1.55	8.01	16.96	21.94
60	7.14	17.04	21.82	22.55

Lifetime Risk of Being Diagnosed = 19.84%
 Lifetime Risk of Dying = 3.62%

Whites				
Current Age	+10 yrs	+20 yrs	+30 yrs	Eventually
0	0.00	0.00	0.00	19.63
10	0.00	0.00	0.00	19.82
20	0.00	0.00	0.09	19.94
30	0.00	0.09	1.50	20.22
40	0.09	1.53	7.66	20.69
50	1.49	7.86	16.65	21.39
60	6.99	16.64	21.18	21.84

Lifetime Risk of Being Diagnosed = 19.63%
 Lifetime Risk of Dying = 3.56%

Blacks				
Current Age	+10 yrs	+20 yrs	+30 yrs	Eventually
0	0.00	0.00	0.00	18.62
10	0.00	0.00	0.00	19.11
20	0.00	0.00	0.11	19.42
30	0.00	0.11	2.33	20.20
40	0.12	2.47	9.54	21.42
50	2.60	10.42	19.15	23.57
60	9.61	20.33	24.69	25.76

Lifetime Risk of Being Diagnosed = 18.62%
 Lifetime Risk of Dying = 4.62%

Table XXII-7
PROSTATE CANCER (Invasive)

AVERAGE ANNUAL AGE-ADJUSTED CANCER MORTALITY^δ RATES BY STATE, 1989-93

All Races, Males

State	Rate	SE	Rank	PD	State	Rate	SE	Rank	PD
TOTAL U.S.	26.4	0.07			Montana	29.0	1.11	(12)	9.8
High Five States					Nebraska	23.5 [*]	0.71	(47)	-11.0
District of Columbia	43.2 ^{⊕*}	1.76	(01)	63.6	Nevada	25.5	1.03	(34)	-3.4
South Carolina	33.5 ^{⊕*}	0.69	(02)	26.9	New Hampshire	25.8	1.01	(30)	-2.3
North Dakota	32.0 [*]	1.25	(03)	21.2	New Jersey	27.9	0.38	(14)	5.7
Georgia	31.8 ^{⊕*}	0.51	(04)	20.5	New Mexico	23.2 [*]	0.81	(49)	-12.1
Mississippi	31.7 ^{⊕*}	0.70	(05)	20.1	New York	25.1 [⊕]	0.23	(37)	-4.9
Low Five States					North Carolina	31.7 ^{⊕*}	0.46	(06)	20.1
Nebraska	23.5 [*]	0.71	(47)	-11.0	North Dakota	32.0 [*]	1.25	(03)	21.2
West Virginia	23.3 [*]	0.66	(48)	-11.7	Ohio	26.6	0.31	(26)	0.8
New Mexico	23.2 [*]	0.81	(49)	-12.1	Oklahoma	25.5	0.54	(35)	-3.4
Alaska	22.2 [*]	2.26	(50)	-15.9	Oregon	25.7	0.56	(31)	-2.7
Hawaii	17.0 ^{⊕*}	0.76	(51)	-35.6	Pennsylvania	26.5	0.28	(27)	0.4
					Rhode Island	24.0	0.93	(44)	-9.1
Alabama	27.9	0.53	(16)	5.7	South Carolina	33.5 ^{⊕*}	0.69	(02)	26.9
Alaska	22.2 [*]	2.26	(50)	-15.9	South Dakota	26.6	1.10	(25)	0.8
Arizona	23.8 [⊕]	0.48	(46)	-9.8	Tennessee	27.0	0.47	(21)	2.3
Arkansas	26.9	0.61	(23)	1.9	Texas	25.4	0.27	(36)	-3.8
California	24.6 [⊕]	0.20	(40)	-6.8	Utah	27.7	0.92	(17)	4.9
Colorado	26.8	0.63	(24)	1.5	Vermont	29.8 [*]	1.48	(10)	12.9
Connecticut	24.3	0.53	(42)	-8.0	Virginia	29.8 ^{⊕*}	0.49	(09)	12.9
Delaware	29.2 [*]	1.38	(11)	10.6	Washington	25.6	0.46	(32)	-3.0
District of Columbia	43.2 ^{⊕*}	1.76	(01)	63.6	West Virginia	23.3 [*]	0.66	(48)	-11.7
Florida	24.1 [⊕]	0.22	(43)	-8.7	Wisconsin	27.9	0.45	(15)	5.7
Georgia	31.8 ^{⊕*}	0.51	(04)	20.5	Wyoming	28.6	1.69	(13)	8.3
Hawaii	17.0 ^{⊕*}	0.76	(51)	-35.6					
Idaho	27.0	1.00	(22)	2.3					
Illinois	27.0	0.31	(20)	2.3					
Indiana	25.6	0.43	(33)	-3.0					
Iowa	24.9	0.53	(39)	-5.7					
Kansas	23.9	0.58	(45)	-9.5					
Kentucky	24.9	0.52	(38)	-5.7					
Louisiana	30.6 ^{⊕*}	0.58	(08)	15.9					
Maine	27.4	0.91	(19)	3.8					
Maryland	31.5 ^{⊕*}	0.57	(07)	19.3					
Massachusetts	26.2	0.41	(29)	-0.8					
Michigan	27.6	0.35	(18)	4.5					
Minnesota	26.3	0.47	(28)	-0.4					
Mississippi	31.7 ^{⊕*}	0.70	(05)	20.1					
Missouri	24.6	0.41	(41)	-6.8					

^δ 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).

Table XXII-8
PROSTATE CANCER (Invasive)AGE-ADJUSTED SEER INCIDENCE RATES \S , SEER MORTALITY RATES δ , AND 5-YEAR RELATIVE SURVIVAL RATES ϕ
By Registry and Race

	All Races, Males	White Males	Black Males
<u>SEER INCIDENCE RATES\S, 1989-93</u>			
REGISTRY			
Standard 9 registries	154.5	150.7	211.7
San Francisco-Oakland	138.6	141.0	189.5
Connecticut	128.5	124.4	188.8
Metropolitan Detroit	188.7	171.3	222.5
Hawaii	117.2	162.8	-
Iowa	134.3	132.0	-
New Mexico	146.6	151.2	-
Seattle-Puget Sound	176.3	171.2	231.6
Utah	172.8	172.2	-
Metropolitan Atlanta	185.7	168.1	224.6
San Jose-Monterey	137.6	139.0	207.7
Los Angeles	142.0	138.0	198.2
<u>SEER MORTALITY RATESδ, 1989-93</u>			
REGISTRY			
Standard 9 registries	26.0	24.9	52.8
San Francisco-Oakland	26.0	25.3	55.4
Connecticut	24.3	23.3	54.2
Metropolitan Detroit	29.4	25.0	48.1
Hawaii	17.0	26.3	-
Iowa	24.9	24.7	-
New Mexico	23.2	23.4	-
Seattle-Puget Sound	25.7	25.6	44.0
Utah	27.7	27.7	-
Metropolitan Atlanta	33.6	26.1	66.3
San Jose-Monterey	24.2	25.4	48.3
Los Angeles	23.4	22.5	45.8
<u>SURVIVAL RATESϕ, 1986-92</u>			
REGISTRY			
Standard 9 registries	86.7	88.6	73.2
San Francisco-Oakland	84.4	86.4	75.5
Connecticut	80.7	81.5	67.4
Metropolitan Detroit	83.7	87.0	74.0
Hawaii	86.0	93.2	-
Iowa	85.4	85.5	-
New Mexico	88.8	89.6	-
Seattle-Puget Sound	95.3	95.7	88.0
Utah	91.3	91.4	-
Metropolitan Atlanta	82.7	88.4	65.2

Note: San Jose-Monterey and Los Angeles are new SEER areas as of 1992 and their data are only used in this table and not other tables in this section.

\S SEER Program. Incidence rates are per 100,000 and are age-adjusted to the 1970 U.S. standard population.

δ NCHS public use tape. Mortality rates are per 100,000 and are age-adjusted to the 1970 U.S. standard population.

ϕ Survival rates are relative rates expressed as percents and are based on follow-up of patients through 1993.

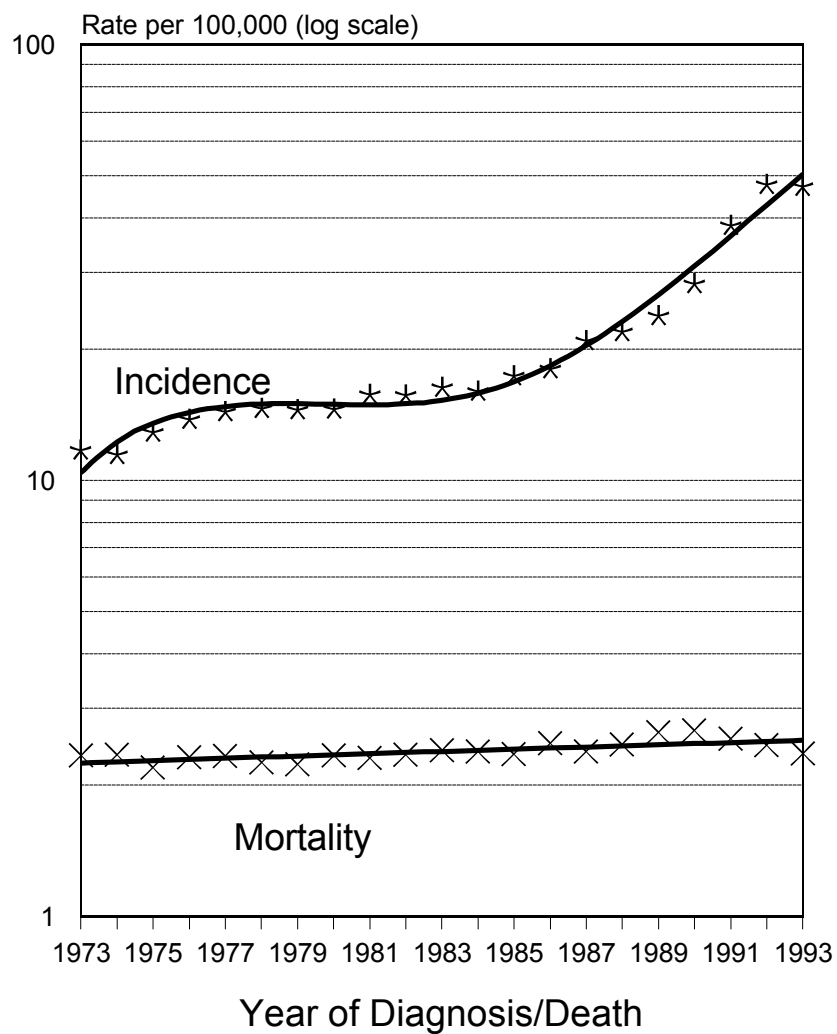
\uparrow The standard error of the survival rate is between 5 and 10 percentage points.

$\uparrow\uparrow$ The standard error of the survival rate is greater than 10 percentage points.

- Statistic could not be calculated or populations are inadequate.

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

White



Black

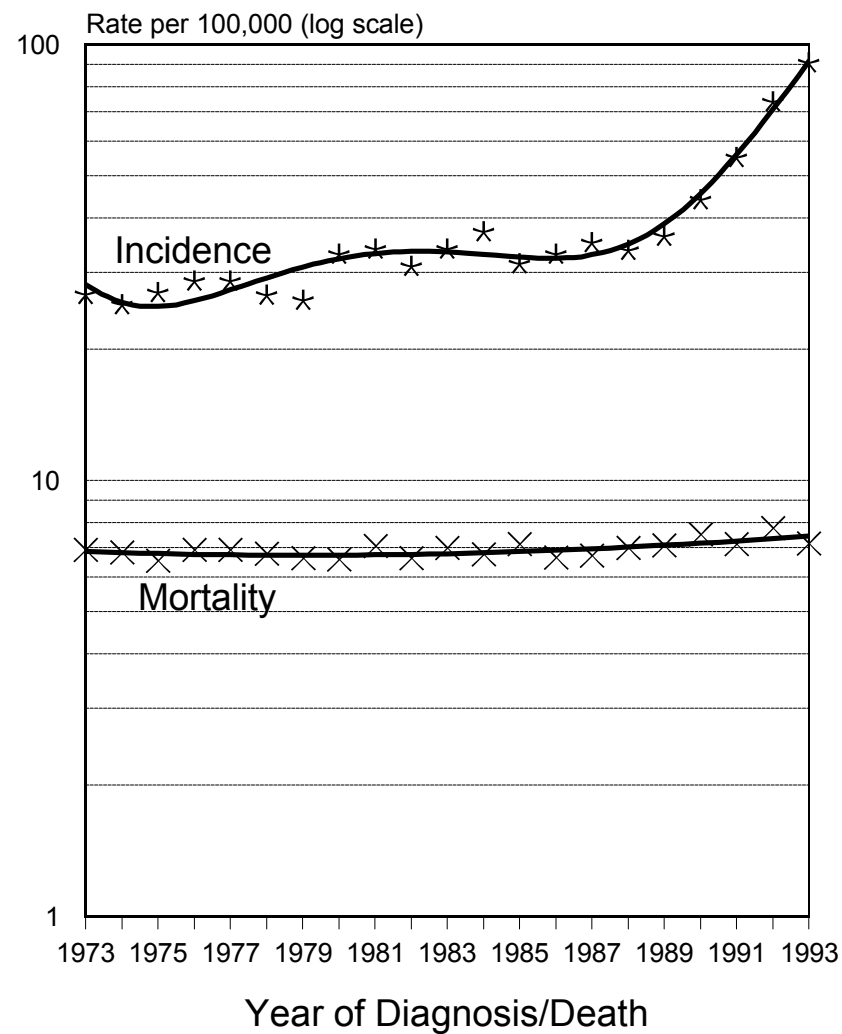
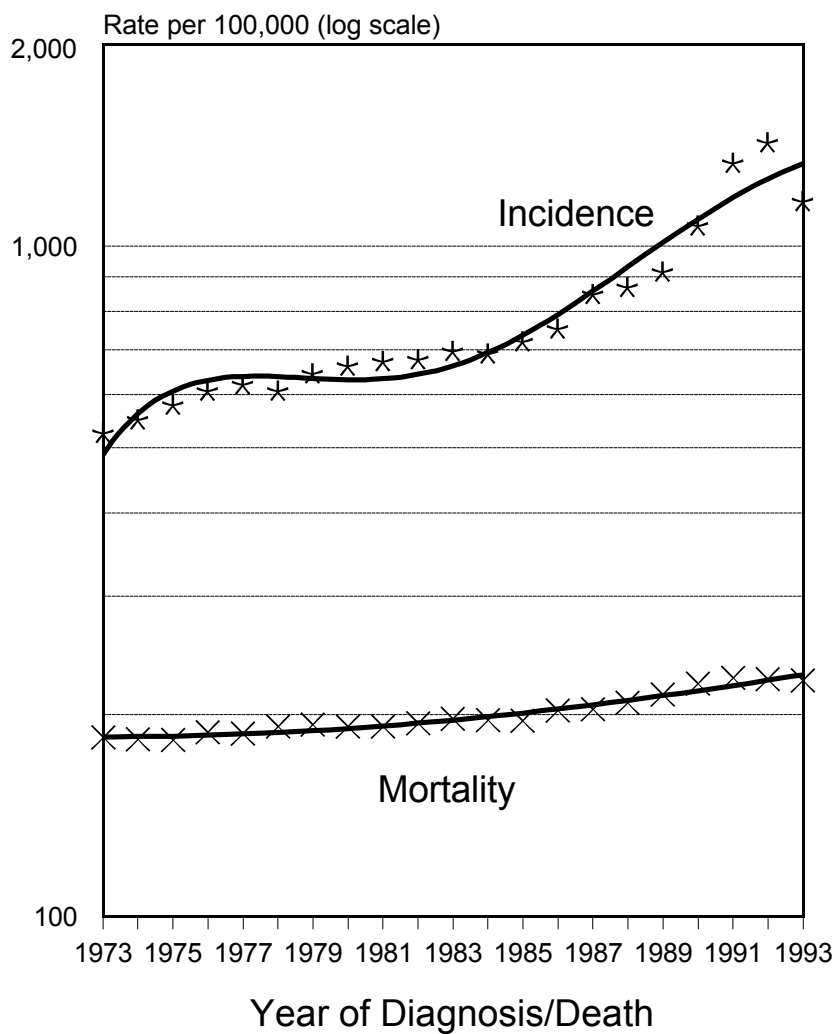


Figure XXII-1

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

White



Black

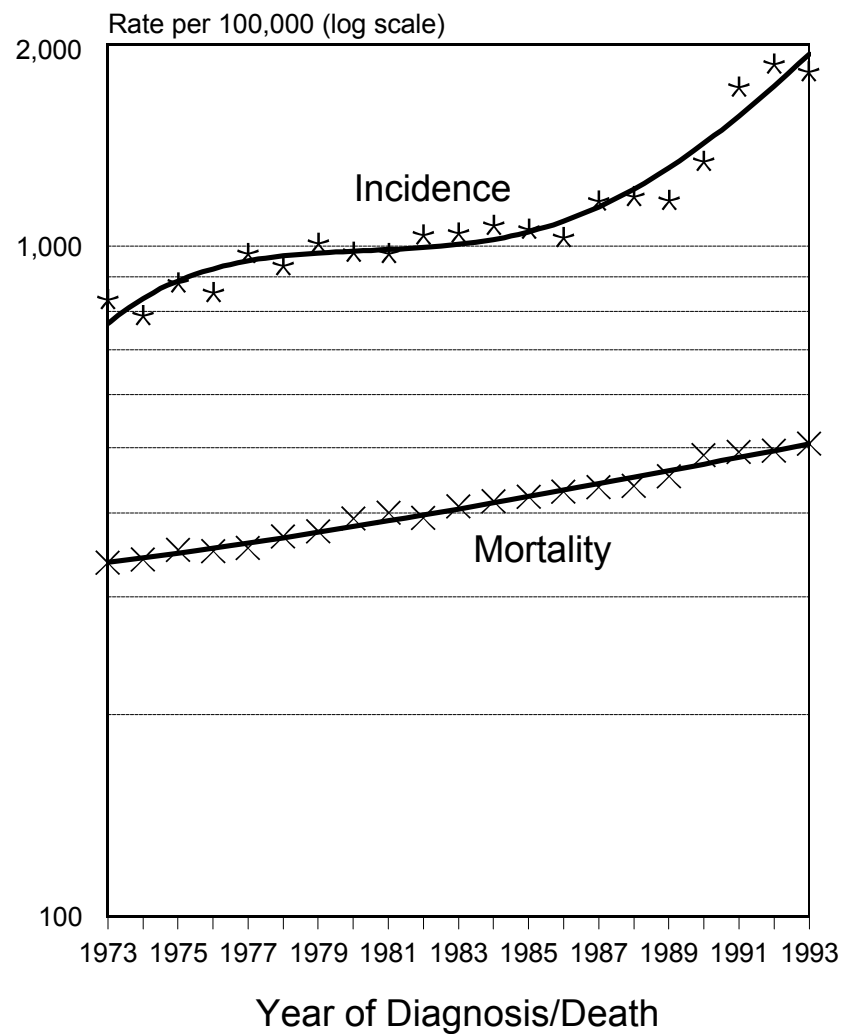
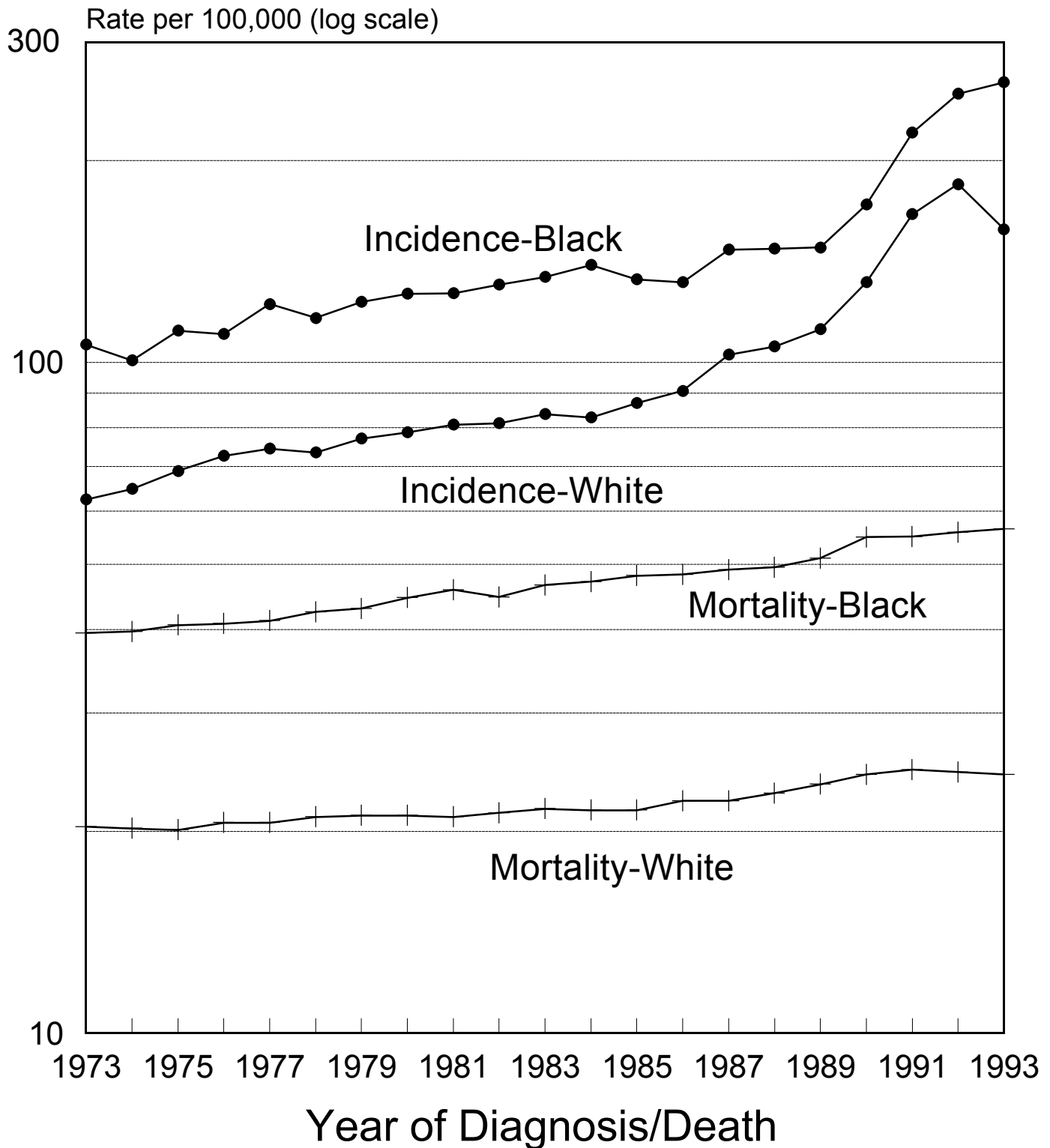


Figure XXII-2

Cancer of the Prostate

U.S. Mortality & SEER Incidence, 1973-93

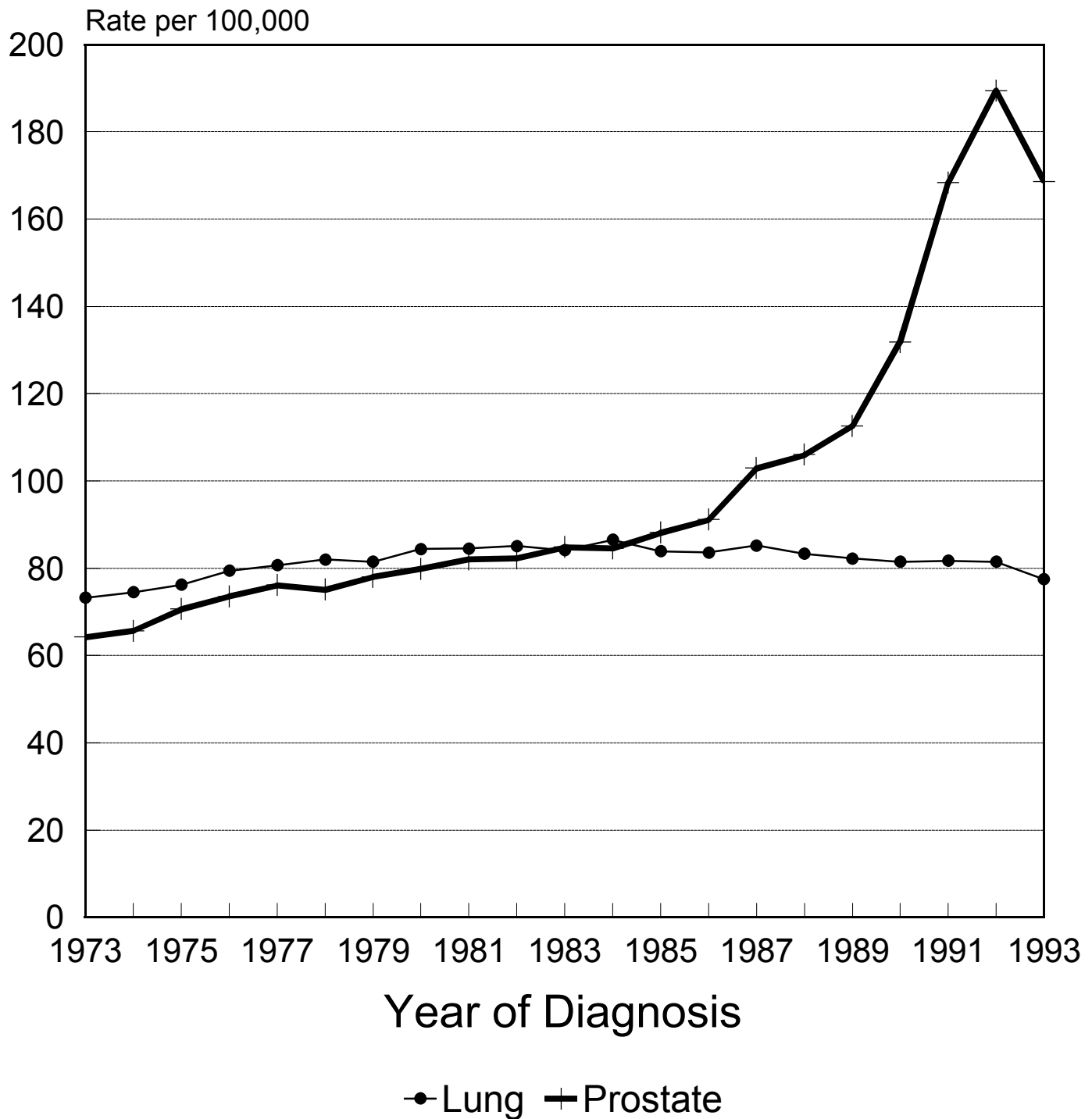


Age-adjusted to 1970 Standard

Prostate vs. Lung Cancer Incidence

All Races, Males

1973-93



Age-adjusted to 1970 Standard