

Table VIII-1
ESOPHAGUS CANCER (Invasive)

TRENDS IN SEER INCIDENCE AND U.S. MORTALITY USING THE JOINTPOINT REGRESSION PROGRAM, 1973-1998
WITH UP TO THREE JOINTPOINTS BY RACE AND SEX

	<u>All Races</u>		<u>Whites</u>		<u>Blacks</u>	
	<u>Year</u>	<u>APC</u>	<u>Year</u>	<u>APC</u>	<u>Year</u>	<u>APC</u>
<u>SEER Cancer Incidence</u>						
Sex - Male and Female	1973-98	0.5★	1973-81 1981-98	-0.4 1.5★	1973-86 1986-98	1.2 -4.4★
Sex - Male	1973-98	0.7★	1973-81 1981-98	-0.4 1.8★	1973-86 1986-98	1.5 -4.9★
Sex - Female	1973-98	-0.2	1973-98	0.0	1973-81 1981-98	4.3 -2.3★
<u>U.S. Cancer Mortality</u>						
Sex - Male and Female	1973-98	0.7★	1973-84 1984-98	0.6★ 1.7★	1973-82 1982-93 1993-98	1.5★ -1.7★ -4.8★
Sex - Male	1973-75 1975-83 1983-94 1994-98	2.9 0.6★ 1.1★ 0.2	1973-82 1982-98	0.6★ 1.9★	1973-79 1979-89 1989-98	2.7★ -0.6 -3.8★
Sex - Female	1973-80 1980-98	1.0★ -0.2★	1973-98	0.3★	1973-84 1984-98	1.1★ -2.1★

The APC is the Annual Percent Change based on rates age-adjusted to the 1970 U.S. standard population using the Joinpoint Regression Program.

* The APC is significantly different from zero (p<.05).

Table VIII-2
ESOPHAGUS CANCER (Invasive)

SEER INCIDENCE RATES, AGE-ADJUSTED AND AGE-SPECIFIC RATES, BY RACE AND SEX

	All Races			Whites			Blacks		
	Total	Males	Females	Total	Males	Females	Total	Males	Females
<u>AGE-ADJUSTED RATES</u>									
YEAR OF DIAGNOSIS:									
1973	3.4	5.5	1.8	3.0	4.8	1.6	9.0	13.3	5.2
1974	3.6	5.9	1.8	3.0	4.9	1.6	11.3	19.0	4.7
1975	3.5	5.8	1.8	3.0	4.8	1.7	9.6	17.6	3.2
1976	3.7	5.8	2.0	3.1	5.0	1.8	9.5	15.2	4.8
1977	3.5	5.5	1.9	2.8	4.4	1.6	10.5	17.7	4.9
1978	3.6	6.1	1.6	2.9	4.9	1.4	11.5	21.3	3.8
1979	3.7	6.2	1.9	3.1	5.1	1.7	11.4	20.1	4.5
1980	3.7	5.9	1.9	3.0	4.9	1.6	11.0	16.4	6.8
1981	3.5	5.5	2.0	2.8	4.3	1.6	12.3	19.4	6.8
1982	3.7	5.9	1.9	2.9	4.6	1.6	12.1	20.3	5.6
1983	3.7	6.2	1.7	3.0	5.0	1.5	11.1	20.2	3.9
1984	3.6	5.7	1.9	3.0	4.8	1.6	10.8	17.8	5.4
1985	3.8	6.3	1.9	3.2	5.3	1.6	11.3	19.4	5.2
1986	4.0	6.3	2.1	3.3	5.2	1.8	12.8	21.6	5.8
1987	3.9	6.4	1.9	3.3	5.4	1.6	10.3	17.9	4.4
1988	3.8	6.2	1.9	3.3	5.3	1.7	9.9	17.0	4.6
1989	3.7	6.1	1.8	3.1	5.1	1.6	9.5	15.7	4.8
1990	4.2	7.1	1.9	3.6	6.1	1.6	11.4	19.6	5.1
1991	3.9	6.3	2.0	3.5	5.7	1.8	9.1	15.3	4.5
1992	3.9	6.7	1.6	3.5	6.2	1.4	9.3	15.7	4.6
1993	4.0	6.5	1.9	3.6	5.9	1.7	8.9	15.3	4.2
1994	3.8	6.5	1.7	3.5	6.0	1.5	8.2	13.1	4.5
1995	3.7	6.0	1.8	3.4	5.5	1.6	7.7	12.5	3.9
1996	4.0	6.8	1.8	3.7	6.2	1.6	8.7	14.4	4.3
1997	4.0	6.6	1.8	3.9	6.5	1.6	6.4	9.3	4.1
1998	3.9	6.7	1.6	3.7	6.4	1.5	6.7	10.8	3.5
<u>AGE-ADJUSTED RATES, 1994-98</u>									
AGE AT DIAGNOSIS:									
All ages	3.9	6.5	1.7	3.6	6.1	1.6	7.5	12.0	4.1
Under 65	1.9	3.1	0.7	1.6	2.8	0.6	4.7	7.8	2.3
65 and over	22.3	37.5	11.2	21.8	36.9	10.8	32.6	50.6	20.2
All ages (world std.) ^λ	3.1	5.1	1.3	2.8	4.8	1.2	6.2	9.9	3.3
<u>AGE-SPECIFIC RATES, 1994-98</u>									
AGE AT DIAGNOSIS:									
0-4	-	-	-	-	-	-	-	-	-
5-9	-	-	-	-	-	-	-	-	-
10-14	-	-	-	-	-	-	-	-	-
15-19	-	-	-	-	-	-	-	-	-
20-24	-	-	-	-	-	-	-	-	-
25-29	-	-	-	-	-	-	-	-	-
30-34	-	-	-	-	-	-	-	-	-
35-39	0.4	0.5	-	0.3	0.6	-	-	-	-
40-44	1.1	1.9	-	0.9	1.6	-	3.1	4.9	-
45-49	2.9	4.9	0.9	2.5	4.3	-	7.5	12.3	-
50-54	5.5	9.5	1.7	4.6	7.9	1.3	16.7	28.9	-
55-59	9.7	15.9	3.8	8.4	13.8	3.3	24.7	43.7	-
60-64	15.0	24.7	6.3	13.7	23.0	5.0	34.6	51.7	21.4
65-69	18.9	31.9	8.0	18.2	30.7	7.4	32.7	50.3	18.9
70-74	24.4	40.7	11.8	23.6	39.5	11.2	39.8	59.9	25.5
75-79	23.8	38.7	13.3	23.3	38.4	12.7	33.5	48.2	23.8
80-84	25.0	44.9	13.3	25.2	46.0	13.2	26.9	-	-
85+	22.3	38.3	15.7	22.6	38.4	16.3	-	-	-

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

λ SEER Program. Rates are per 100,000 and are age-adjusted to the world standard population.

- Statistic not shown. Rate based on less than 25 cases for the time interval.

Table VIII-3
ESOPHAGUS CANCER (Invasive)U.S. MORTALITY RATES, AGE-ADJUSTED AND AGE-SPECIFIC RATES⁰, BY RACE AND SEX

	All Races			Whites			Blacks		
	Total	Males	Females	Total	Males	Females	Total	Males	Females
<u>AGE-ADJUSTED RATES</u>									
YEAR OF DEATH:									
1973	3.0	5.0	1.4	2.5	4.2	1.2	8.3	13.9	3.7
1974	3.0	5.1	1.4	2.5	4.3	1.2	8.3	14.0	3.7
1975	3.1	5.4	1.4	2.6	4.5	1.2	8.6	15.0	3.6
1976	3.2	5.4	1.5	2.6	4.4	1.2	9.1	15.8	3.8
1977	3.2	5.3	1.5	2.6	4.3	1.2	8.9	15.5	3.8
1978	3.2	5.4	1.5	2.7	4.5	1.3	8.9	15.6	3.8
1979	3.2	5.4	1.5	2.6	4.4	1.2	9.2	16.4	3.7
1980	3.3	5.5	1.5	2.7	4.6	1.2	9.4	16.1	4.3
1981	3.3	5.6	1.5	2.7	4.5	1.2	9.3	16.5	3.9
1982	3.3	5.5	1.5	2.7	4.5	1.3	9.3	16.4	4.0
1983	3.3	5.6	1.5	2.7	4.7	1.2	9.1	15.9	4.0
1984	3.3	5.7	1.5	2.7	4.7	1.3	9.4	16.6	4.2
1985	3.3	5.7	1.4	2.7	4.8	1.2	8.9	15.8	3.8
1986	3.4	5.7	1.5	2.8	4.8	1.3	9.1	16.0	4.0
1987	3.4	5.8	1.5	2.9	5.0	1.2	8.6	15.0	3.9
1988	3.4	5.9	1.5	2.9	5.0	1.3	8.8	16.2	3.4
1989	3.5	6.0	1.5	3.0	5.2	1.2	8.7	15.4	3.7
1990	3.5	6.0	1.5	3.0	5.2	1.2	8.3	14.3	3.8
1991	3.5	6.1	1.5	3.1	5.4	1.3	8.2	14.5	3.7
1992	3.5	6.1	1.5	3.1	5.5	1.2	7.7	13.3	3.6
1993	3.6	6.2	1.5	3.1	5.5	1.3	8.0	14.0	3.6
1994	3.6	6.4	1.4	3.2	5.8	1.2	7.6	13.3	3.4
1995	3.6	6.3	1.4	3.3	5.8	1.3	7.1	12.7	3.0
1996	3.6	6.3	1.5	3.4	5.9	1.3	6.9	11.9	3.2
1997	3.6	6.3	1.4	3.4	5.9	1.3	6.4	11.2	2.9
1998	3.7	6.4	1.5	3.4	6.1	1.3	6.2	10.6	3.0
<u>AGE-ADJUSTED RATES, 1994-98</u>									
AGE AT DEATH:									
All ages	3.6	6.3	1.5	3.3	5.9	1.3	6.8	11.9	3.1
Under 65	1.7	2.9	0.6	1.5	2.6	0.4	3.9	6.9	1.6
65 and over	21.3	37.6	9.7	20.4	36.3	9.1	33.1	58.1	16.7
All ages (world std.) ⁰	2.8	5.0	1.1	2.6	4.6	0.9	5.5	9.7	2.5
<u>AGE-SPECIFIC RATES, 1994-98</u>									
AGE AT DEATH:									
0-4	-	-	-	-	-	-	-	-	-
5-9	-	-	-	-	-	-	-	-	-
10-14	-	-	-	-	-	-	-	-	-
15-19	-	-	-	-	-	-	-	-	-
20-24	-	-	-	-	-	-	-	-	-
25-29	0.0	0.1	-	0.0	-	-	-	-	-
30-34	0.1	0.2	-	0.1	0.2	-	-	-	-
35-39	0.3	0.5	0.1	0.3	0.5	0.1	0.3	0.6	-
40-44	0.9	1.6	0.2	0.8	1.4	0.2	1.9	3.3	0.7
45-49	2.5	4.4	0.7	2.2	3.9	0.5	5.7	9.6	2.5
50-54	5.0	8.7	1.5	4.2	7.4	1.1	13.8	23.9	5.6
55-59	8.8	15.2	2.9	7.5	13.1	2.2	21.8	38.6	8.7
60-64	13.8	23.7	4.9	12.3	21.3	4.1	29.1	51.2	12.6
65-69	18.0	31.3	6.8	16.7	29.2	6.0	32.6	56.2	14.9
70-74	22.0	38.8	9.0	20.9	37.3	8.2	37.2	63.0	19.6
75-79	23.4	41.3	10.9	22.8	40.3	10.6	32.5	59.5	15.7
80-84	24.8	44.2	13.7	24.4	43.4	13.4	32.3	60.2	17.9
85+	24.0	43.5	16.1	24.1	43.9	16.3	23.3	41.9	15.7

⁰ NCHS public use tape. Rates are per 100,000 and are age-adjusted to the 1970 U.S. standard population, unless noted.
¹ NCHS public use tape. Rates are per 100,000 and are age-adjusted to the world standard population.
 - Statistic not shown. Rate based on less than 25 cases for the time interval.

Table VIII-4
ESOPHAGUS CANCER (Invasive)

SURVIVAL RATES, BY RACE, SEX, DIAGNOSIS YEAR, STAGE AND AGE

	All Races			Whites			Blacks		
	Total	Males	Females	Total	Males	Females	Total	Males	Females
<u>5-YR RELATIVE SURVIVAL RATES</u>									
YEAR OF DIAGNOSIS:									
1960-63 ^a	-	-	-	4	4	6	1	0	2
1970-73 ^a	-	-	-	4	4	4	4	4	3
1974-76 ^b	4.8	3.8	7.2	5.2	4.5	6.8	4.0	2.1	9.0
1977-79 ^b	5.1	4.9	5.8	5.7	5.8	5.6	2.8	2.4	4.3
1980-82 ^b	6.7	6.0	8.5	7.3	6.5	9.2	5.4	4.6	7.2
1983-85 ^b	8.3	6.9	11.8	9.3	7.8	13.0	6.2	5.0	9.5
1986-88 ^b	9.8	9.9	9.6	10.8	11.3	9.6	7.2	7.0	7.6
1989-91 ^b	10.8	10.6	11.3	11.6	11.7	11.3	8.8	7.8	10.5
1992-97 ^b	13.7 Ω	13.6 Ω	14.0 Ω	15.1 Ω	14.7 Ω	16.2 Ω	9.0 Ω	10.0 Ω	6.6
1992-97 ^b									
ALL STAGES	13.7	13.6	14.0	15.1	14.7	16.2	9.0	10.0	6.6
LOCALIZED	27.0	28.4	23.1	31.2	32.6	27.1	12.0	11.2	13.2 \uparrow
REGIONAL	13.3	13.2	13.6	14.0	13.8	14.6	10.9	11.8	8.2 \uparrow
DISTANT	2.2	2.2	2.3	2.0	1.8	2.9	3.1	3.9	0.0
UNSTAGED	12.6	11.3	14.6	14.3	12.3	17.5	9.4	12.4	0.0
<u>STAGE DISTRIBUTION (%) 1992-97^b</u>									
ALL STAGES									
Number of cases	5,103	3,808	1,295	3,979	2,976	1,003	843	601	242
Percent	100%	100%	100%	100%	100%	100%	100%	100%	100%
LOCALIZED	25	25	25	25	24	25	27	28	25
REGIONAL	27	27	25	27	27	25	25	26	24
DISTANT	25	26	20	25	27	19	25	26	23
UNSTAGED	24	22	29	24	22	30	23	20	29
<u>5-YR RELATIVE SURVIVAL RATES, 1992-97^b</u>									
AGE AT DIAGNOSIS:									
<45	19.9	18.6	26.7 \uparrow	23.3	21.3	-	15.8	15.9 \uparrow	-
45-54	18.2	19.3	13.9	20.4	20.7	20.5 \uparrow	12.1	14.5	4.2
55-64	14.5	13.9	16.5	17.5	16.1	23.2	6.4	8.0	3.6
65-74	12.6	11.4	16.2	13.3	12.1	17.0	8.9	7.3	13.6 \uparrow
75+	9.6	10.0	8.7	10.2	10.6	9.4	2.5	2.6	0.0
Under 65	16.3	16.3	16.4	19.0	18.1	23.0	10.2	12.2	5.0
65 and over	11.5	10.9	12.7	12.1	11.6	13.4	7.3	6.5	8.9

^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 1997.

Ω The difference in rates between 1974-76 and 1992-97 is statistically significant ($p < .05$).
 \uparrow The standard error of the survival rate is between 5 and 10 percentage points.
 \uparrow The standard error of the survival rate is greater than 10 percentage points.
 - Statistic could not be calculated.

Table VIII-5
ESOPHAGUS CANCER (Invasive)

INCIDENCE, MORTALITY, AND SURVIVAL RATES

By Year of Diagnosis/Death

All Races, Males and Females

Year of Diagnosis/Death

	1975	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Incidence																				
SEER	3.5	3.7	3.5	3.7	3.7	3.6	3.8	4.0	3.9	3.8	3.7	4.2	3.9	3.9	4.0	3.8	3.7	4.0	4.0	3.9
Mortality																				
U.S.	3.1	3.3	3.3	3.3	3.3	3.3	3.3	3.4	3.4	3.4	3.5	3.5	3.5	3.5	3.6	3.6	3.6	3.6	3.6	3.7
SEER	3.3	3.3	3.5	3.2	3.3	3.2	3.2	3.4	3.5	3.5	3.5	3.5	3.3	3.5	3.3	3.6	3.4	3.4	3.4	3.5
Relative Survival Rates (SEER)																				
1-year	28.2	30.0	25.7	32.6	31.3	37.6	36.6	35.1	35.7	36.1	38.9	39.5	42.1	41.7	38.5	39.2	41.6	43.5	41.8	
2-year	10.4	14.0	12.4	15.4	14.9	16.9	21.2	19.4	18.0	20.3	20.1	20.5	21.6	24.5	22.9	23.8	24.0	24.4		
3-year	7.1	8.8	9.1	11.1	10.4	12.2	13.7	14.7	11.9	13.8	14.4	14.7	15.4	19.4	16.8	18.8	17.8			
4-year	5.3	7.3	7.5	9.4	8.0	10.9	10.3	12.0	9.4	12.0	11.4	11.7	13.0	16.7	14.3	15.7				
5-year	4.1	5.8	6.9	7.5	6.3	9.4	9.1	10.7	8.9	9.9	9.9	10.4	12.1	14.9	12.9					
6-year	3.5	5.3	6.0	6.6	5.9	8.4	7.5	9.6	7.8	9.1	8.8	9.7	10.6	14.0						
7-year	3.5	4.8	5.6	6.5	5.4	7.0	7.1	8.9	7.0	8.6	8.0	8.7	10.1							
8-year	3.2	4.0	4.8	6.2	4.8	6.6	6.2	8.1	6.0	8.1	8.0	8.4								
9-year	3.2	4.0	4.4	5.4	4.2	6.3	5.7	8.1	5.4	6.8	7.2									
10-year	3.0	3.5	4.1	5.2	4.2	6.3	5.5	7.0	5.4	6.3										
11-year	2.9	2.6	4.1	5.0	3.9	6.0	5.1	6.6	5.4											
12-year	2.9	2.4	4.1	5.0	3.9	6.0	4.3	6.3												
13-year	2.9	2.4	3.4	4.2	3.9	6.0	4.3													
14-year	2.5	2.4	3.3	4.2	3.8	6.0														
15-year	2.4	2.4	3.3	4.2	3.8															
16-year	1.8	2.4	2.8	3.8																
17-year	1.8	2.4	2.8																	
18-year	1.8	2.4																		
19-year	1.8																			
20-year	1.4																			
21-year	1.4																			
22-year	1.1																			
23-year	1.1																			

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 VIII-6
ESOPHAGUS CANCER (Invasive)

INCIDENCE, MORTALITY, AND SURVIVAL RATES

By Year of Diagnosis/Death

All Races, Males

Year of Diagnosis/Death

	1975	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Incidence																				
SEER	5.8	5.9	5.5	5.9	6.2	5.7	6.3	6.3	6.4	6.2	6.1	7.1	6.3	6.7	6.5	6.5	6.0	6.8	6.6	6.7
Mortality																				
U.S.	5.4	5.5	5.6	5.5	5.6	5.7	5.7	5.7	5.8	5.9	6.0	6.0	6.1	6.1	6.2	6.4	6.3	6.3	6.3	6.4
SEER	5.7	5.5	5.7	5.1	5.7	5.3	5.5	5.7	5.7	6.1	5.8	5.8	5.8	6.2	5.7	6.5	6.0	5.8	5.5	6.1
Relative Survival Rates (SEER)																				
1-year	25.5	30.7	26.0	30.4	30.6	36.7	35.6	34.4	34.3	34.2	38.4	41.4	41.7	41.2	39.9	38.6	41.3	44.6	42.0	
2-year	8.7	14.2	12.8	14.4	14.7	15.3	20.2	19.9	17.1	19.1	19.7	21.3	21.5	24.3	22.7	22.5	24.5	24.9		
3-year	5.8	8.9	9.5	9.6	10.1	10.0	11.8	15.8	12.3	12.0	14.4	14.6	15.5	19.3	17.5	18.9	18.2			
4-year	4.5	7.4	7.2	7.7	8.2	8.5	7.7	12.6	9.7	10.6	11.3	11.7	12.7	15.8	14.9	15.6				
5-year	3.0	5.5	6.8	5.9	6.4	7.1	7.4	11.2	9.3	9.3	9.7	10.1	12.1	13.8	13.2					
6-year	2.3	5.2	5.9	5.1	5.7	5.8	6.4	10.4	8.3	8.6	8.3	9.4	10.4	12.8						
7-year	2.3	4.4	5.6	4.8	5.2	4.4	5.9	9.5	7.0	8.3	7.4	8.4	10.4							
8-year	2.3	4.0	4.6	4.7	4.9	3.8	5.4	8.2	6.3	8.0	7.4	7.8								
9-year	2.3	3.9	4.1	4.3	4.3	3.8	5.1	8.2	5.9	6.5	7.1									
10-year	2.2	3.5	3.6	4.2	4.2	3.8	5.1	7.8	5.9	6.0										
11-year	1.9	3.3	3.6	4.2	3.8	3.8	5.0	7.0	5.9											
12-year	1.9	3.2	3.6	4.2	3.6	3.8	3.8	6.5												
13-year	1.9	3.2	3.5	3.4	3.6	3.8	3.8													
14-year	1.4	3.2	3.5	3.4	3.6	3.8														
15-year	1.4	3.2	3.5	3.3	3.6															
16-year	1.4	3.2	3.2	3.3																
17-year	1.4	3.2	3.2																	
18-year	1.4	3.2																		
19-year	1.3																			
20-year	1.3																			
21-year	1.3																			
22-year	1.3																			
23-year	1.3																			

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 VIII-7
ESOPHAGUS CANCER (Invasive)

INCIDENCE, MORTALITY, AND SURVIVAL RATES

By Year of Diagnosis/Death

All Races, Females

Year of Diagnosis/Death

	1975	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Incidence																				
SEER	1.8	1.9	2.0	1.9	1.7	1.9	1.9	2.1	1.9	1.9	1.8	1.9	2.0	1.6	1.9	1.7	1.8	1.8	1.8	1.6
Mortality																				
U.S.	1.4	1.5	1.5	1.5	1.5	1.5	1.4	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.4	1.4	1.5	1.4	1.5
SEER	1.5	1.7	1.8	1.6	1.5	1.6	1.4	1.6	1.6	1.4	1.6	1.8	1.5	1.5	1.5	1.4	1.3	1.5	1.7	1.5
Relative Survival Rates (SEER)																				
1-year	35.2	28.3	25.1	38.4	33.6	39.8	39.2	36.8	39.4	41.3	40.2	33.8	43.1	43.4	34.8	40.9	42.4	40.3	41.4	
2-year	14.8	13.5	11.6	18.1	15.5	20.7	24.0	18.1	20.3	23.7	21.3	18.0	22.0	24.9	23.3	27.7	22.4	22.8		
3-year	10.2	8.5	8.2	14.8	11.5	17.4	18.7	12.0	10.8	18.7	14.3	15.1	14.9	19.6	14.9	18.8	16.7			
4-year	7.3	7.0	8.0	13.7	7.3	16.4	17.1	10.5	8.6	15.5	11.5	11.9	13.6	19.6	12.9	16.0				
5-year	6.9	6.7	7.1	11.8	6.2	14.8	13.5	9.4	7.9	11.5	10.3	11.2	12.2	18.2	11.9					
6-year	6.5	5.7	6.2	10.4	6.2	14.3	10.2	7.6	6.5	10.2	10.2	10.5	11.2	17.7						
7-year	6.0	5.7	5.8	10.4	5.9	13.0	10.0	7.4	6.5	9.4	9.4	9.7	9.5							
8-year	5.5	4.1	5.3	10.0	4.6	12.9	8.3	7.4	5.2	8.5	9.2	9.7								
9-year	5.5	4.1	4.9	8.2	4.0	11.4	7.2	7.4	4.1	7.6	7.6									
10-year	5.1	3.7	4.9	7.8	4.0	11.4	6.7	5.2	3.7	7.2										
11-year	5.1	0.8	4.6	6.6	4.0	11.0	5.3	5.2	3.7											
12-year	5.1	0.8	4.0	6.6	4.0	10.8	5.3	5.2												
13-year	4.9	0.8	3.4	6.4	3.9	9.5	5.3													
14-year	4.9	0.8	2.7	5.8	3.9	9.5														
15-year	4.3	0.8	2.7	5.8	3.9															
16-year	2.3	0.8	2.0	4.4																
17-year	2.3	0.8	2.0																	
18-year	2.3	0.8																		
19-year	2.3																			
20-year	1.4																			
21-year	1.4																			
22-year	0.0																			
23-year	0.0																			

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 VIII-8
ESOPHAGUS CANCER (Invasive)

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

Lifetime Risk (Percent) of Being Diagnosed (11 SEER Areas) With Cancer and
 Lifetime Risk (Percent) of Dying (Total U.S.) From Cancer

1996-1998

All Races

Current Age	Males				Females				
	+10 yrs	+20 yrs	+30 yrs	Eventually	+10 yrs	+20 yrs	+30 yrs	Eventually	
0	0.00	0.00	0.00	0.72	0.00	0.00	0.00	0.26	
10	0.00	0.00	0.01	0.73	0.00	0.00	0.00	0.26	
20	0.00	0.01	0.04	0.74	0.00	0.00	0.01	0.26	
30	0.00	0.04	0.15	0.75	0.00	0.01	0.03	0.27	
40	0.03	0.14	0.37	0.75	0.01	0.03	0.09	0.27	
50	0.12	0.35	0.59	0.75	0.03	0.08	0.18	0.27	
60	0.25	0.51	0.66	0.69	0.06	0.16	0.23	0.25	
Lifetime Risk of Being Diagnosed =				0.72%	Lifetime Risk of Being Diagnosed =				0.26%
Lifetime Risk of Dying =				0.70%	Lifetime Risk of Dying =				0.23%

Whites

Current Age	Males				Females				
	+10 yrs	+20 yrs	+30 yrs	Eventually	+10 yrs	+20 yrs	+30 yrs	Eventually	
0	0.00	0.00	0.00	0.71	0.00	0.00	0.00	0.25	
10	0.00	0.00	0.01	0.72	0.00	0.00	0.00	0.25	
20	0.00	0.01	0.03	0.72	0.00	0.00	0.00	0.25	
30	0.01	0.03	0.13	0.73	0.00	0.00	0.03	0.25	
40	0.03	0.13	0.35	0.74	0.00	0.03	0.07	0.25	
50	0.10	0.33	0.57	0.73	0.02	0.07	0.16	0.25	
60	0.24	0.50	0.65	0.67	0.05	0.15	0.22	0.24	
Lifetime Risk of Being Diagnosed =				0.71%	Lifetime Risk of Being Diagnosed =				0.25%
Lifetime Risk of Dying =				0.68%	Lifetime Risk of Dying =				0.21%

Blacks

Current Age	Males				Females				
	+10 yrs	+20 yrs	+30 yrs	Eventually	+10 yrs	+20 yrs	+30 yrs	Eventually	
0	0.00	0.00	0.00	0.87	0.00	0.00	0.00	0.41	
10	0.00	0.00	0.00	0.89	0.00	0.00	0.01	0.41	
20	0.00	0.00	0.07	0.89	0.00	0.00	0.03	0.41	
30	0.00	0.07	0.30	0.92	0.00	0.03	0.10	0.42	
40	0.07	0.31	0.63	0.96	0.03	0.10	0.24	0.42	
50	0.26	0.61	0.85	0.96	0.08	0.23	0.36	0.41	
60	0.41	0.70	0.79	0.83	0.16	0.31	0.36	0.36	
Lifetime Risk of Being Diagnosed =				0.87%	Lifetime Risk of Being Diagnosed =				0.41%
Lifetime Risk of Dying =				0.92%	Lifetime Risk of Dying =				0.35%

Table VIII-9
ESOPHAGUS CANCER (Invasive)

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

By Race/Ethnicity and Sex

Incidence^x

RACE/ETHNICITY	Rate 1992-1998 Rate per 100,000 persons			Trend 1992-1998 EAPC (%)		
	Total	Males	Females	Total	Males	Females
All Races	3.7	6.2	1.7	-0.2	-0.2	-0.7
White	3.5	5.9	1.6	0.7	0.9	-0.7
White Hispanic	2.5	4.6	0.8	-5.2★	-5.5★	-
White Non-Hispanic	3.6	6.0	1.6	1.2	1.4	-0.3
Black	7.4	11.8	4.0	-5.6★	-6.7★	-3.6
Asian/Pacific Islander	2.5	4.5	0.9	3.3	2.4	-
Amer Ind/Alask Nat	2.6	4.3	-	-	-	-
Hispanic [⊗]	2.3	4.3	0.8	-5.2★	-5.3★	-

Mortality[❖]

RACE/ETHNICITY	Rate 1992-1998 Rate per 100,000 persons			Trend 1992-1998 EAPC (%)		
	Total	Males	Females	Total	Males	Females
All Races	3.6	6.3	1.5	0.5★	0.5★	0.0
White	3.3	5.8	1.3	1.7★	1.6★	0.9
White Hispanic	2.1	3.8	0.7	0.5	-1.0	5.7
White Non-Hispanic	3.3	5.9	1.3	1.9★	1.9★	0.9
Black	7.1	12.4	3.3	-4.1★	-4.3★	-3.4★
Asian/Pacific Islander	1.8	3.2	0.8	0.1	-0.9	4.8
Amer Ind/Alask Nat	2.1	3.7	0.9	3.6	-0.3	-
Hispanic [⊗]	2.0	3.6	0.7	0.2	-1.2	4.9

- 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.
- x Incidence data are from the 11 SEER areas (San Francisco, Connecticut, Detroit, Hawaii, Iowa, New Mexico, Seattle, Utah, Atlanta, San Jose-Monterey, and Los Angeles) and Alaska. Unless specified, other tables use data from 9 SEER areas (San Francisco, Connecticut, Detroit, Hawaii, Iowa, New Mexico, Seattle, Utah, and Atlanta).
- ⊗ Hispanic is not mutually exclusive from whites, blacks, Asian Pacific Islanders, and American Indians/Native Alaskans. 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).
- ★ The EAPC is significantly different from zero (p<.05).

Table VIII-10
ESOPHAGUS CANCER (Invasive)AGE-ADJUSTED SEER INCIDENCE RATES§ AND SEER MORTALITY RATES§
By Registry, Race and Sex

	All Races			Whites			Blacks		
	Total	Males	Females	Total	Males	Females	Total	Males	Females
<u>SEER INCIDENCE RATES§, 1994-98</u>									
REGISTRY									
11 registries	3.7	6.2	1.7	3.5	5.9	1.5	6.9	11.0	3.8
9 registries	3.9	6.5	1.7	3.6	6.1	1.6	7.5	12.0	4.1
San Francisco-Oakland	3.7	5.8	2.0	3.8	5.9	2.1	5.0	7.6	3.0
Connecticut	4.5	7.8	1.9	4.1	7.1	1.7	11.3	20.2	5.0
Metropolitan Detroit	4.4	7.5	2.0	3.7	6.5	1.5	7.3	12.0	3.8
Hawaii	3.1	5.5	1.1	3.6	5.3	-	-	-	-
Iowa	3.6	6.2	1.5	3.6	6.2	1.5	-	-	-
New Mexico	3.1	5.2	1.2	3.1	5.3	1.2	-	-	-
Seattle-Puget Sound	4.1	6.9	1.7	4.1	7.0	1.7	6.1	-	-
Utah	2.0	3.5	0.7	2.1	3.5	0.8	-	-	-
Metropolitan Atlanta	4.6	7.3	2.5	3.2	5.3	1.5	9.5	14.6	5.6
San Jose-Monterey	3.2	5.1	1.7	3.4	5.4	1.7	-	-	-
Los Angeles	3.3	5.4	1.6	3.1	5.1	1.4	5.7	8.9	3.4
<u>SEER MORTALITY RATES§, 1994-98</u>									
REGISTRY									
11 registries	3.3	5.7	1.4	3.2	5.5	1.3	6.0	10.0	3.0
9 registries	3.5	6.0	1.5	3.3	5.7	1.3	6.5	10.7	3.2
San Francisco-Oakland	3.3	5.4	1.7	3.5	5.6	1.7	4.9	7.3	3.0
Connecticut	3.9	6.7	1.7	3.7	6.3	1.6	7.2	13.1	-
Metropolitan Detroit	3.9	7.1	1.6	3.4	6.2	1.2	6.3	10.8	3.1
Hawaii	2.6	4.5	0.9	3.2	5.1	-	-	-	-
Iowa	3.4	6.1	1.2	3.4	6.2	1.2	-	-	-
New Mexico	2.8	4.8	1.2	2.9	4.9	1.2	-	-	-
Seattle-Puget Sound	3.5	6.1	1.5	3.6	6.1	1.5	5.4	-	-
Utah	2.1	3.7	0.7	2.1	3.8	0.7	-	-	-
Metropolitan Atlanta	4.1	6.8	2.0	2.8	4.8	1.4	8.7	14.9	4.4
San Jose-Monterey	2.8	4.7	1.4	3.1	5.1	1.4	-	-	-
Los Angeles	3.0	5.2	1.3	2.9	5.0	1.3	5.1	8.4	2.7

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 VIII-11
ESOPHAGUS CANCER (Invasive)AVERAGE ANNUAL AGE-ADJUSTED CANCER MORTALITY^d RATES BY STATE, 1994-98

All Races, Males and Females

State	Rate	SE	Rank	PD
TOTAL U.S.	3.6	0.02		
High Five States				
District of Columbia	8.4 ^{3/4} '	0.52	(01)	133.3
Delaware	5.4 ^{3/4} '	0.36	(02)	50.0
New Hampshire	4.5'	0.27	(03)	25.0
Maryland	4.3 ^{3/4} '	0.13	(04)	19.4
South Carolina	4.3 ^{3/4} '	0.15	(05)	19.4
Low Five States				
Kansas	2.9 ^{3/4} '	0.14	(47)	-19.4
New Mexico	2.8 ^{3/4} '	0.18	(48)	-22.2
Hawaii	2.6 ^{3/4} '	0.19	(49)	-27.8
North Dakota	2.5 ^{3/4} '	0.25	(50)	-30.6
Utah	2.1 ^{3/4} '	0.16	(51)	-41.7

State	Rate	SE	Rank	PD	State	Rate	SE	Rank	PD
Alabama	3.5	0.12	(30)	-2.8	Montana	3.6	0.26	(29)	0.0
Alaska	4.0	0.48	(11)	11.1	Nebraska	3.4	0.19	(35)	-5.6
Arizona	3.4	0.12	(34)	-5.6	Nevada	3.8	0.21	(20)	5.6
Arkansas	2.9 ^{3/4} '	0.14	(46)	-19.4	New Hampshire	4.5'	0.27	(03)	25.0
California	3.2 ^{3/4} '	0.05	(41)	-11.1	New Jersey	3.8	0.09	(19)	5.6
Colorado	3.1 ^{3/4} '	0.13	(43)	-13.9	New Mexico	2.8 ^{3/4} '	0.18	(48)	-22.2
Connecticut	3.9	0.14	(14)	8.3	New York	3.8	0.06	(18)	5.6
Delaware	5.4 ^{3/4} '	0.36	(02)	50.0	North Carolina	3.7	0.09	(24)	2.8
District of Columbia	8.4 ^{3/4} '	0.52	(01)	133.3	North Dakota	2.5 ^{3/4} '	0.25	(50)	-30.6
Florida	3.6	0.06	(28)	0.0	Ohio	3.8	0.08	(21)	5.6
Georgia	3.9	0.11	(15)	8.3	Oklahoma	2.9 ^{3/4} '	0.12	(45)	-19.4
Hawaii	2.6 ^{3/4} '	0.19	(49)	-27.8	Oregon	3.7	0.14	(23)	2.8
Idaho	3.6	0.24	(27)	0.0	Pennsylvania	3.9 ^{3/4} '	0.07	(16)	8.3
Illinois	4.1 ^{3/4} '	0.08	(07)	13.9	Rhode Island	3.9	0.26	(12)	8.3
Indiana	3.6	0.11	(26)	0.0	South Carolina	4.3 ^{3/4} '	0.15	(05)	19.4
Iowa	3.4	0.14	(36)	-5.6	South Dakota	3.0'	0.26	(44)	-16.7
Kansas	2.9 ^{3/4} '	0.14	(47)	-19.4	Tennessee	3.4	0.11	(33)	-5.6
Kentucky	3.5	0.13	(31)	-2.8	Texas	3.2 ^{3/4} '	0.06	(42)	-11.1
Louisiana	3.9	0.13	(17)	8.3	Utah	2.1 ^{3/4} '	0.16	(51)	-41.7
Maine	4.0	0.23	(09)	11.1	Vermont	3.8	0.34	(22)	5.6
Maryland	4.3 ^{3/4} '	0.13	(04)	19.4	Virginia	4.0	0.11	(10)	11.1
Massachusetts	4.2 ^{3/4} '	0.11	(06)	16.7	Washington	3.6	0.11	(25)	0.0
Michigan	3.9	0.09	(13)	8.3	West Virginia	3.3	0.16	(39)	-8.3
Minnesota	3.4	0.12	(37)	-5.6	Wisconsin	4.0 ^{3/4} '	0.12	(08)	11.1
Mississippi	3.4	0.15	(38)	-5.6	Wyoming	3.4	0.37	(32)	-5.6
Missouri	3.3	0.10	(40)	-8.3					

^d 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 15% or more.

^{3/4} Difference between state rate and total U.S. rate is statistically significant ($p < .0002$).

Table VIII-12
ESOPHAGUS CANCER (Invasive)AVERAGE ANNUAL AGE-ADJUSTED CANCER MORTALITY^d RATES BY STATE, 1994-98

All Races, Males

State	Rate	SE	Rank	PD
TOTAL U.S.	6.3	0.03		
High Five States				
District of Columbia	14.5 ^{3/4} '	1.05	(01)	130.2
Delaware	9.2 ^{3/4} '	0.71	(02)	46.0
New Hampshire	7.7'	0.54	(03)	22.2
South Carolina	7.7 ^{3/4} '	0.29	(04)	22.2
Massachusetts	7.5 ^{3/4} '	0.22	(05)	19.0
Low Five States				
Kansas	5.1 ^{3/4} '	0.28	(47)	-19.0
New Mexico	4.8 ^{3/4} '	0.34	(48)	-23.8
Hawaii	4.5 ^{3/4} '	0.38	(49)	-28.6
North Dakota	4.5 ^{3/4} '	0.50	(50)	-28.6
Utah	3.7 ^{3/4} '	0.31	(51)	-41.3

State	Rate	SE	Rank	PD	State	Rate	SE	Rank	PD
Alabama	6.4	0.24	(24)	1.6	Montana	5.9	0.49	(38)	-6.3
Alaska	5.7	0.84	(40)	-9.5	Nebraska	6.2	0.38	(27)	-1.6
Arizona	6.0	0.23	(32)	-4.8	Nevada	6.0	0.38	(36)	-4.8
Arkansas	5.1 ^{3/4} '	0.27	(46)	-19.0	New Hampshire	7.7'	0.54	(03)	22.2
California	5.4 ^{3/4} '	0.09	(43)	-14.3	New Jersey	6.7	0.18	(17)	6.3
Colorado	5.4 ^{3/4} '	0.25	(42)	-14.3	New Mexico	4.8 ^{3/4} '	0.34	(48)	-23.8
Connecticut	6.7	0.28	(16)	6.3	New York	6.6	0.12	(21)	4.8
Delaware	9.2 ^{3/4} '	0.71	(02)	46.0	North Carolina	6.6	0.19	(20)	4.8
District of Columbia	14.5 ^{3/4} '	1.05	(01)	130.2	North Dakota	4.5 ^{3/4} '	0.50	(50)	-28.6
Florida	6.0	0.12	(35)	-4.8	Ohio	6.8	0.15	(14)	7.9
Georgia	6.7	0.21	(19)	6.3	Oklahoma	5.2 ^{3/4} '	0.24	(45)	-17.5
Hawaii	4.5 ^{3/4} '	0.38	(49)	-28.6	Oregon	6.5	0.28	(23)	3.2
Idaho	6.2	0.46	(25)	-1.6	Pennsylvania	7.1 ^{3/4} '	0.14	(10)	12.7
Illinois	7.2 ^{3/4} '	0.16	(07)	14.3	Rhode Island	7.0	0.52	(12)	11.1
Indiana	6.7	0.22	(18)	6.3	South Carolina	7.7 ^{3/4} '	0.29	(04)	22.2
Iowa	6.1	0.28	(29)	-3.2	South Dakota	5.3'	0.51	(44)	-15.9
Kansas	5.1 ^{3/4} '	0.28	(47)	-19.0	Tennessee	6.1	0.21	(31)	-3.2
Kentucky	6.2	0.25	(28)	-1.6	Texas	5.6 ^{3/4} '	0.12	(41)	-11.1
Louisiana	6.8	0.26	(15)	7.9	Utah	3.7 ^{3/4} '	0.31	(51)	-41.3
Maine	7.2	0.47	(08)	14.3	Vermont	6.5	0.67	(22)	3.2
Maryland	7.4 ^{3/4} '	0.25	(06)	17.5	Virginia	7.0	0.22	(11)	11.1
Massachusetts	7.5 ^{3/4} '	0.22	(05)	19.0	Washington	6.2	0.22	(26)	-1.6
Michigan	6.9	0.17	(13)	9.5	West Virginia	6.0	0.34	(34)	-4.8
Minnesota	6.1	0.23	(30)	-3.2	Wisconsin	7.1	0.23	(09)	12.7
Mississippi	6.0	0.31	(37)	-4.8	Wyoming	6.0	0.71	(33)	-4.8
Missouri	5.9	0.20	(39)	-6.3					

^d 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 15% or more.

^{3/4} Difference between state rate and total U.S. rate is statistically significant ($p < .0002$).

Table VIII-13
ESOPHAGUS CANCER (Invasive)AVERAGE ANNUAL AGE-ADJUSTED CANCER MORTALITY^d RATES BY STATE, 1994-98

All Races, Females

State	Rate	SE	Rank	PD
TOTAL U.S.	1.5	0.01		
High Five States				
District of Columbia	3.9 ^{3/4} '	0.47	(01)	160.0
Alaska	2.3'	0.51	(02)	53.3
Delaware	2.2'	0.31	(03)	46.7
Maryland	1.9 ^{3/4} '	0.11	(04)	26.7
New Hampshire	1.8'	0.23	(05)	20.0
Low Five States				
Kansas	1.1'	0.11	(47)	-26.7
Nebraska	1.1'	0.14	(48)	-26.7
North Dakota	0.9'	0.20	(49)	-40.0
Hawaii	0.9 ^{3/4} '	0.15	(50)	-40.0
Utah	0.7 ^{3/4} '	0.12	(51)	-53.3

State	Rate	SE	Rank	PD	State	Rate	SE	Rank	PD
Alabama	1.3	0.09	(33)	-13.3	Montana	1.4	0.22	(24)	-6.7
Alaska	2.3'	0.51	(02)	53.3	Nebraska	1.1'	0.14	(48)	-26.7
Arizona	1.2'	0.09	(34)	-20.0	Nevada	1.7	0.19	(09)	13.3
Arkansas	1.1'	0.11	(44)	-26.7	New Hampshire	1.8'	0.23	(05)	20.0
California	1.4	0.04	(26)	-6.7	New Jersey	1.6	0.08	(17)	6.7
Colorado	1.2'	0.10	(41)	-20.0	New Mexico	1.2'	0.16	(38)	-20.0
Connecticut	1.7	0.13	(08)	13.3	New York	1.7 ^{3/4}	0.05	(06)	13.3
Delaware	2.2'	0.31	(03)	46.7	North Carolina	1.4	0.08	(28)	-6.7
District of Columbia	3.9 ^{3/4} '	0.47	(01)	160.0	North Dakota	0.9'	0.20	(49)	-40.0
Florida	1.6	0.05	(15)	6.7	Ohio	1.4	0.06	(27)	-6.7
Georgia	1.7	0.09	(07)	13.3	Oklahoma	1.1'	0.10	(45)	-26.7
Hawaii	0.9 ^{3/4} '	0.15	(50)	-40.0	Oregon	1.4	0.11	(25)	-6.7
Idaho	1.3	0.19	(32)	-13.3	Pennsylvania	1.4	0.06	(23)	-6.7
Illinois	1.7 ^{3/4}	0.07	(11)	13.3	Rhode Island	1.7	0.21	(13)	13.3
Indiana	1.2'	0.08	(35)	-20.0	South Carolina	1.5	0.11	(18)	0.0
Iowa	1.2'	0.11	(37)	-20.0	South Dakota	1.1'	0.21	(46)	-26.7
Kansas	1.1'	0.11	(47)	-26.7	Tennessee	1.4	0.09	(29)	-6.7
Kentucky	1.3	0.10	(30)	-13.3	Texas	1.2 ^{3/4} '	0.05	(39)	-20.0
Louisiana	1.7	0.11	(12)	13.3	Utah	0.7 ^{3/4} '	0.12	(51)	-53.3
Maine	1.5	0.18	(20)	0.0	Vermont	1.6	0.29	(14)	6.7
Maryland	1.9 ^{3/4} '	0.11	(04)	26.7	Virginia	1.6	0.09	(16)	6.7
Massachusetts	1.7	0.09	(10)	13.3	Washington	1.5	0.09	(22)	0.0
Michigan	1.5	0.07	(21)	0.0	West Virginia	1.1'	0.12	(43)	-26.7
Minnesota	1.2'	0.09	(40)	-20.0	Wisconsin	1.5	0.10	(19)	0.0
Mississippi	1.3	0.12	(31)	-13.3	Wyoming	1.1'	0.29	(42)	-26.7
Missouri	1.2'	0.08	(36)	-20.0					

^d 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.

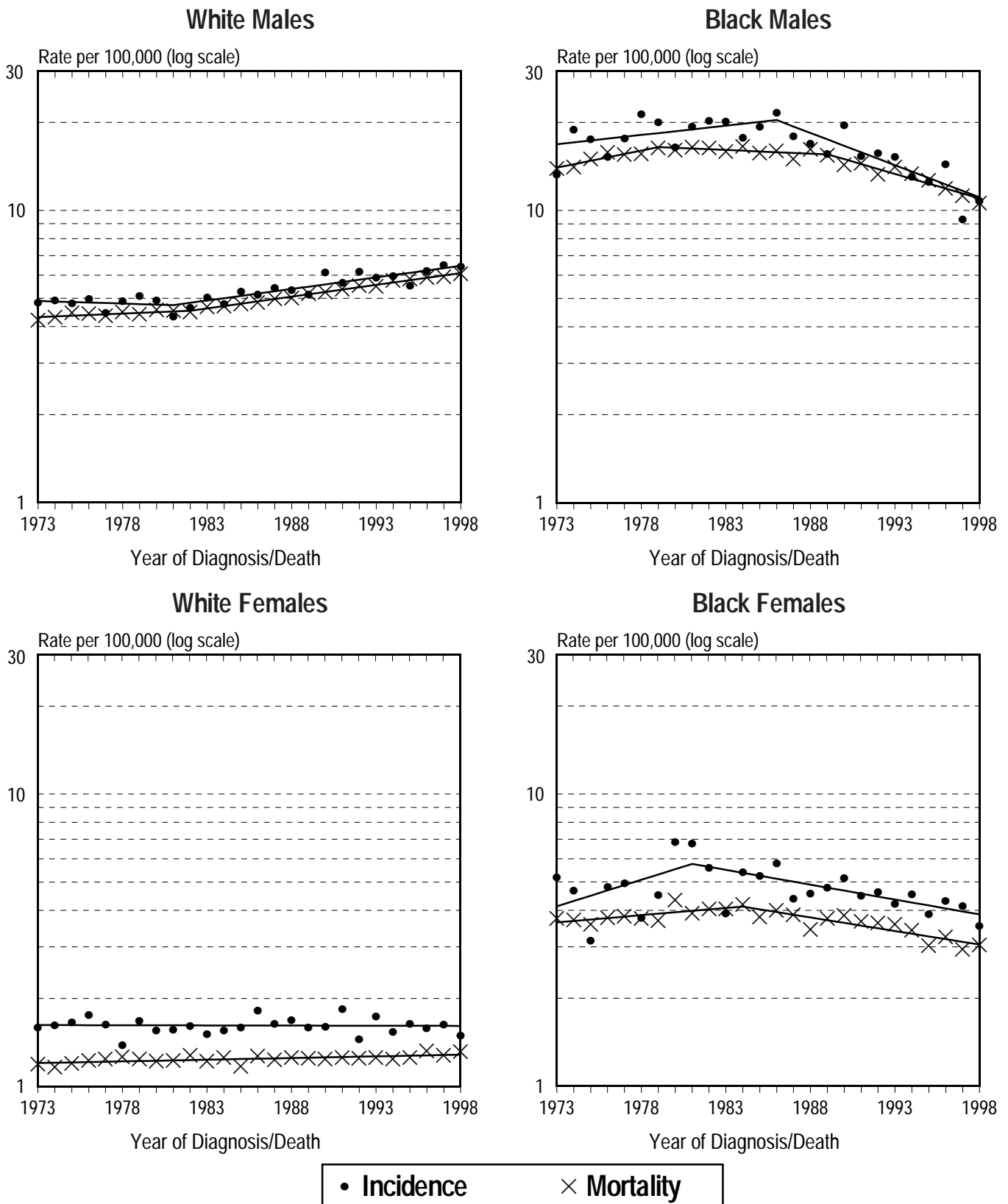
PD Percent difference between state rate and total U.S. rate.

' Absolute difference between state rate and total U.S. rate is 15% or more.

^{3/4} Difference between state rate and total U.S. rate is statistically significant ($p < .0002$).

Figure VIII-1

SEER Incidence and U.S. Mortality Rates⁺ Esophagus



⁺ Rates are age-adjusted to the 1970 U.S. standard million population. Regression lines are calculated using the Joinpoint Regression Program.