

Table XII-1
LARYNX CANCER (Invasive)

TRENDS IN SEER INCIDENCE AND U.S. MORTALITY USING THE JOINPOINT REGRESSION PROGRAM, 1973-1997
WITH UP TO THREE JOINPOINTS 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	1973-88	0.2	1973-88	0.2	1973-90	1.1★
	1988-97	-2.8★	1988-97	-2.9★	1990-97	-3.3★
Sex - Male	1973-85	0.3	1973-85	0.3	1973-90	1.1★
	1985-97	-2.4★	1985-97	-2.6★	1990-97	-3.5★
Sex - Female	1973-89	1.8★	1973-89	1.8★	1973-97	1.3
	1989-97	-3.1★	1989-97	-3.1★		
<u>U.S. Cancer Mortality</u>						
Sex - Male and Female	1973-93	-0.4★	1973-97	-0.8★	1973-92	1.3★
	1993-97	-2.0			1992-97	-1.6
Sex - Male	1973-97	-0.9★	1973-97	-1.2★	1973-97	1.0★
Sex - Female	1973-75	12.1	1973-76	8.6★	1973-97	2.1★
	1975-92	1.3★	1976-97	0.7★		
	1992-97	-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 XII-2
LARYNX 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>									
<u>YEAR OF DIAGNOSIS:</u>									
1973	4.5	8.4	1.3	4.4	8.4	1.2	6.3	11.9	1.8
1974	4.5	8.2	1.4	4.5	8.3	1.4	6.0	10.1	2.4
1975	4.5	8.3	1.3	4.4	8.3	1.3	6.4	11.9	1.8
1976	4.7	8.9	1.2	4.7	8.9	1.3	6.6	13.0	1.3
1977	4.5	8.5	1.2	4.4	8.4	1.2	6.4	11.9	2.0
1978	4.7	8.6	1.6	4.7	8.6	1.7	6.3	11.7	2.0
1979	4.8	8.9	1.5	4.8	9.0	1.5	6.7	11.8	2.7
1980	4.7	8.8	1.4	4.6	8.7	1.4	6.6	12.6	1.8
1981	4.8	8.6	1.7	4.7	8.4	1.8	6.6	12.6	1.6
1982	4.7	8.6	1.6	4.7	8.6	1.6	7.2	14.5	1.6
1983	4.8	8.8	1.6	4.9	8.9	1.6	7.2	13.0	2.6
1984	4.6	8.5	1.4	4.4	8.4	1.3	6.1	11.0	2.3
1985	4.9	8.7	1.8	4.4	8.4	1.3	7.9	14.1	3.1
1986	4.5	8.2	1.5	4.9	8.7	1.8	7.5	13.4	3.0
1987	4.7	8.3	1.8	4.4	8.0	1.5	7.0	13.8	1.9
1988	4.6	8.3	1.7	4.6	8.2	1.7	7.3	13.3	2.8
1989	4.5	7.8	1.7	4.6	8.4	1.7	7.3	13.2	3.0
1990	4.6	8.1	1.7	4.5	7.8	1.8	7.0	12.6	2.9
1991	4.2	7.5	1.6	4.5	7.9	1.7	8.3	15.3	3.2
1992	4.4	7.9	1.6	4.3	7.4	1.7	6.0	11.3	2.0
1993	4.4	7.9	1.6	4.4	7.7	1.6	7.8	14.2	2.9
1994	3.8	7.0	1.3	3.8	6.8	1.4	6.2	12.6	1.5
1994	4.1	7.2	1.6	4.0	7.1	1.5	7.9	13.9	3.4
1995	3.8	6.8	1.4	3.9	6.8	1.4	5.8	10.8	2.0
1996	3.8	6.6	1.5	3.8	6.6	1.4	5.8	10.1	2.5
1997	3.6	6.3	1.4	3.5	6.1	1.4	6.3	11.5	2.4
<u>AGE-ADJUSTED RATES, 1993-97</u>									
<u>AGE AT DIAGNOSIS:</u>									
All ages	3.8	6.8	1.4	3.8	6.7	1.4	6.4	11.7	2.3
Under 65	2.2	3.6	0.9	2.1	3.4	0.8	4.1	7.2	1.6
65 and over	19.1	36.0	6.6	19.2	36.2	6.7	27.2	53.0	9.5
All ages (world std.) [§]	3.1	5.5	1.2	3.1	5.4	1.2	5.3	9.7	2.0
<u>AGE-SPECIFIC RATES, 1993-97</u>									
<u>AGE AT DIAGNOSIS:</u>									
0-4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5-9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15-19	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.0
20-24	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
25-29	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
30-34	0.2	0.3	0.1	0.2	0.3	0.2	0.2	0.5	0.0
35-39	0.5	0.8	0.3	0.5	0.7	0.4	0.9	1.4	0.4
40-44	1.4	2.1	0.7	1.4	2.0	0.8	2.6	4.3	1.2
45-49	3.1	5.0	1.3	2.8	4.5	1.2	7.2	11.6	3.3
50-54	6.8	11.3	2.5	6.6	10.5	2.7	12.5	23.2	3.5
55-59	11.9	19.7	4.6	11.4	18.6	4.3	24.2	42.2	9.7
60-64	16.0	27.1	6.0	15.9	26.8	5.7	27.8	49.9	10.6
65-69	20.5	35.6	7.9	21.0	36.6	7.7	28.5	47.5	13.6
70-74	21.4	40.5	6.5	21.3	39.8	6.8	34.3	72.5	7.3
75-79	19.7	38.3	6.7	19.6	38.2	6.8	28.0	56.3	9.7
80-84	14.7	31.4	5.1	15.0	32.0	5.3	17.4	37.9	6.4
85+	9.1	23.5	3.3	9.0	23.3	3.4	8.8	22.2	2.8

§ 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 XII-3
LARYNX CANCER (Invasive)

U.S. MORTALITY 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>									
<u>YEAR OF DEATH:</u>									
1973	1.4	2.8	0.3	1.3	2.7	0.3	2.2	4.3	0.5
1974	1.5	2.9	0.4	1.4	2.8	0.3	2.3	4.6	0.6
1975	1.5	2.8	0.4	1.4	2.7	0.4	2.3	4.4	0.7
1976	1.5	2.9	0.4	1.4	2.7	0.4	2.3	4.4	0.7
1977	1.5	2.9	0.4	1.4	2.7	0.4	2.4	4.7	0.6
1978	1.5	2.9	0.4	1.4	2.7	0.4	2.6	5.1	0.6
1979	1.4	2.8	0.4	1.4	2.7	0.4	2.3	4.6	0.6
1980	1.4	2.7	0.4	1.3	2.5	0.4	2.6	5.0	0.8
1981	1.4	2.7	0.5	1.3	2.6	0.4	2.6	4.8	1.0
1982	1.4	2.7	0.5	1.4	2.6	0.5	2.5	4.8	0.7
1983	1.4	2.7	0.5	1.3	2.5	0.4	2.4	4.6	0.8
1984	1.4	2.7	0.5	1.3	2.4	0.5	2.8	5.5	0.7
1985	1.3	2.5	0.5	1.2	2.3	0.4	2.6	5.0	0.8
1986	1.4	2.6	0.5	1.3	2.3	0.4	2.7	5.2	0.9
1987	1.4	2.6	0.5	1.3	2.4	0.4	2.6	5.1	0.8
1988	1.4	2.5	0.5	1.2	2.3	0.4	2.8	5.9	0.7
1989	1.4	2.5	0.5	1.2	2.2	0.5	2.8	5.7	0.8
1990	1.3	2.5	0.5	1.2	2.3	0.4	2.6	5.0	1.0
1991	1.4	2.6	0.6	1.3	2.3	0.5	2.9	5.5	1.1
1992	1.4	2.5	0.5	1.3	2.3	0.5	2.9	5.6	1.0
1993	1.4	2.5	0.5	1.2	2.3	0.4	2.9	5.5	0.9
1994	1.3	2.4	0.5	1.2	2.2	0.5	2.8	5.5	0.9
1995	1.3	2.4	0.5	1.2	2.1	0.4	2.7	5.1	0.9
1996	1.3	2.3	0.5	1.2	2.1	0.5	2.8	5.6	0.9
1997	1.2	2.2	0.5	1.1	2.0	0.4	2.6	5.2	0.8
<u>AGE-ADJUSTED RATES, 1993-97</u>									
<u>AGE AT DEATH:</u>									
All ages	1.3	2.4	0.5	1.2	2.1	0.4	2.7	5.4	0.9
Under 65	0.7	1.1	0.2	0.6	0.9	0.2	1.7	3.1	0.5
65 and over	7.3	14.0	2.7	6.9	13.2	2.6	12.6	25.8	4.3
All ages (world std.)N	1.0	1.9	0.4	0.9	1.6	0.4	2.3	4.3	0.7
<u>AGE-SPECIFIC RATES, 1993-97</u>									
<u>AGE AT DEATH:</u>									
0-4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5-9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15-19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20-24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25-29	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30-34	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
35-39	0.1	0.2	0.0	0.1	0.1	0.0	0.2	0.4	0.1
40-44	0.3	0.4	0.1	0.2	0.4	0.1	0.8	1.3	0.3
45-49	0.9	1.4	0.3	0.6	1.1	0.2	2.9	5.2	1.0
50-54	1.9	3.3	0.6	1.5	2.6	0.5	5.6	10.6	1.5
55-59	3.5	6.1	1.2	3.0	5.1	1.0	9.0	16.7	2.9
60-64	5.5	9.3	2.1	4.9	8.1	2.0	12.3	23.8	3.6
65-69	6.8	11.8	2.6	6.3	11.0	2.5	12.4	22.6	4.7
70-74	7.6	13.6	3.0	7.1	12.7	2.8	14.3	27.3	5.4
75-79	7.8	14.7	3.1	7.4	13.7	3.1	13.1	29.2	3.2
80-84	7.8	17.1	2.6	7.7	16.7	2.6	10.9	25.5	3.3
85+	6.7	18.6	2.0	6.5	18.1	2.0	9.5	27.5	2.1

* 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 XII-4
LARYNX 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	-	-	-	53	54	46	-	-	-
1970-73 ^a	-	-	-	62	63	56	-	-	-
1974-76 ^b	65.8	65.4	68.0	66.7	66.2	68.9	59.2	58.2	64.0↑
1977-79 ^b	67.1	68.0	62.8	68.3	69.5	62.6	56.0	54.3	63.0↑
1980-82 ^b	68.2	68.1	68.6	69.4	69.1	70.5	58.4	59.9	50.4↑
1983-85 ^b	67.0	68.2	61.6	68.5	69.6	63.3	55.5	56.5	52.0↑
1986-88 ^b	66.7	67.4	64.1	68.7	69.7	64.3	54.2	52.4	61.5↑
1989-96 ^b	64.7	66.0	59.8S	66.2	67.6	60.8	53.7	53.7	54.0
1989-96 ^b									
ALL STAGES	64.7	66.0	59.8	66.2	67.6	60.8	53.7	53.7	54.0
LOCALIZED	81.4	82.9	75.0	82.0	83.7	74.5	74.1	73.8	75.0↑
REGIONAL	51.9	52.6	49.9	53.6	54.2	51.6	41.5	42.5	38.1↑
DISTANT	40.6	39.7	44.0	41.4	40.6	44.4	36.0	33.4	44.7↑
UNSTAGED	45.6	45.9	44.8↑	47.2	47.1	47.2↑	33.7↑	32.0↑	-
<u>STAGE DISTRIBUTION (%) 1989-96^b</u>									
ALL STAGES									
Number of cases	7,016	5,626	1,390	5,840	4,689	1,151	951	751	200
Percent	100%	100%	100%	100%	100%	100%	100%	100%	100%
LOCALIZED	51	52	45	52	54	47	43	44	37
REGIONAL	29	28	33	28	27	33	31	31	32
DISTANT	15	15	15	14	14	14	21	20	23
UNSTAGED	5	5	7	5	5	7	5	4	9
<u>5-YR RELATIVE SURVIVAL RATES, 1989-96^b</u>									
AGE AT DIAGNOSIS:									
<45	64.1	64.0	63.4↑	68.0	67.2	70.2↑	48.2↑	50.9↑	-
45-54	66.5	67.4	63.0	70.8	71.5	67.9	49.0	50.0	45.8↑
55-64	66.1	66.2	65.7	67.5	67.7	66.5	55.2	53.5	62.4↑
65-74	64.7	66.3	58.9	65.2	66.7	59.3	57.4	58.7↑	53.4↑
75+	59.1	63.8	44.1	59.6	65.1	42.4↑	58.0↑	55.7↑	-
Under 65	65.9	66.2	64.7	68.4	68.7	67.2	51.9	51.8	52.6↑
65 and over	63.2	65.6	54.5	63.6	66.3	54.1	57.7	58.2	56.1↑

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 1997.

S

The difference in rates between 1974-76 and 1989-96 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.

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Statistic could not be calculated.

Table XII-5
LARYNX CANCER (Invasive)

INCIDENCE, MORTALITY, AND SURVIVAL RATES

By Year of Diagnosis/Death

All Races, Males and Females

Year of Diagnosis/Death

	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Incidence																						
SEER	4.7	4.5	4.7	4.8	4.7	4.8	4.7	4.8	4.6	4.9	4.5	4.7	4.6	4.5	4.6	4.2	4.4	3.8	4.1	3.8	3.8	3.6
Mortality																						
U.S.	1.5	1.5	1.5	1.4	1.4	1.4	1.4	1.4	1.4	1.3	1.4	1.4	1.4	1.4	1.3	1.4	1.4	1.4	1.3	1.3	1.3	1.2
SEER	1.4	1.5	1.3	1.3	1.4	1.4	1.3	1.4	1.2	1.3	1.2	1.2	1.3	1.2	1.3	1.3	1.2	1.2	1.2	1.1	1.0	1.0
Relative Survival Rates (SEER)																						
1-year	88.8	89.8	88.2	87.2	89.0	89.5	88.3	90.3	88.4	90.9	89.5	88.2	86.7	89.4	87.8	90.6	88.3	87.5	87.5	89.4	88.1	
2-year	77.0	83.1	79.7	78.9	79.7	82.5	79.8	81.7	77.4	80.9	80.2	79.2	76.8	80.0	77.9	80.7	78.0	78.8	77.6	79.8		
3-year	71.8	77.6	74.8	72.2	75.6	76.4	75.2	75.4	71.2	75.8	73.1	74.0	72.2	74.5	71.2	74.0	73.5	71.8	70.3			
4-year	67.9	73.8	69.7	67.8	71.0	72.9	71.5	71.9	66.2	70.3	68.7	70.2	69.3	67.8	66.8	70.0	69.1	65.9				
5-year	65.0	70.9	67.2	63.6	67.1	69.3	68.1	69.0	63.5	68.3	65.6	67.7	66.9	64.0	65.2	67.5	65.5					
6-year	62.7	67.7	66.3	62.4	64.7	66.5	65.1	65.8	61.5	64.3	61.4	64.6	64.3	61.8	61.0	63.5						
7-year	61.7	65.7	62.7	61.4	61.9	63.5	63.0	63.1	59.7	62.0	59.1	61.1	62.5	59.5	59.3							
8-year	59.5	63.4	61.3	60.5	60.4	61.7	60.6	61.8	58.4	59.1	57.2	57.4	60.1	56.2								
9-year	58.4	61.5	57.6	58.8	57.5	60.6	57.7	59.4	56.5	56.8	54.4	55.3	57.3									
10-year	56.0	59.7	54.8	56.9	55.9	58.9	55.8	57.5	54.7	54.7	51.4	53.5										
11-year	54.6	59.4	53.3	54.3	53.0	57.1	54.0	55.3	51.8	53.3	49.7											
12-year	53.6	56.6	52.0	53.2	51.4	55.6	50.3	52.6	48.8	51.3												
13-year	52.0	55.3	50.3	52.3	49.6	53.9	48.1	49.2	47.0													
14-year	51.0	53.5	49.1	49.8	49.4	52.6	46.7	47.3														
15-year	50.7	50.5	47.1	45.7	46.7	51.4	45.8															
16-year	47.7	48.7	46.3	43.5	45.1	48.3																
17-year	45.7	47.0	43.1	40.6	44.6																	
18-year	44.8	46.6	42.3	38.1																		
19-year	43.1	45.2	40.6																			
20-year	41.4	42.4																				
21-year	40.5																					

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 XII-6
LARYNX CANCER (Invasive)

INCIDENCE, MORTALITY, AND SURVIVAL RATES

By Year of Diagnosis/Death

All Races, Males

Year of Diagnosis/Death

	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Incidence																						
SEER	8.9	8.5	8.6	8.9	8.8	8.6	8.6	8.8	8.5	8.7	8.2	8.3	8.3	7.8	8.1	7.5	7.9	7.0	7.2	6.8	6.6	6.3
Mortality																						
U.S.	2.9	2.9	2.9	2.8	2.7	2.7	2.7	2.7	2.7	2.5	2.6	2.6	2.5	2.5	2.5	2.6	2.5	2.5	2.4	2.4	2.3	2.2
SEER	2.7	2.8	2.6	2.5	2.6	2.5	2.4	2.5	2.3	2.4	2.3	2.1	2.3	2.2	2.3	2.4	2.2	2.2	2.2	1.9	1.8	1.8
Relative Survival Rates (SEER)																						
1-year	89.3	90.3	87.6	87.4	88.8	89.6	88.6	90.6	88.7	91.0	89.7	88.8	86.9	89.8	88.2	90.6	88.5	87.9	89.7	91.3	87.8	
2-year	76.8	84.0	79.0	79.0	79.8	83.0	80.2	82.2	77.3	81.7	80.1	80.2	76.1	81.0	78.5	81.1	79.0	79.5	79.6	81.5		
3-year	71.6	78.9	75.0	72.1	76.3	77.1	75.2	76.2	71.4	76.4	73.8	76.3	70.9	75.1	71.4	74.0	73.8	73.3	72.4			
4-year	67.5	75.7	70.0	67.8	71.7	73.1	71.2	73.2	67.6	71.0	69.2	72.3	68.7	69.3	67.5	70.2	69.7	67.7				
5-year	64.9	73.2	67.7	63.4	67.9	69.0	67.4	70.6	64.9	68.9	66.0	69.6	66.5	65.7	65.9	68.5	66.3					
6-year	62.8	70.0	66.8	62.2	65.2	66.4	64.4	67.6	62.7	65.2	61.9	66.9	63.9	62.7	61.7	64.2						
7-year	62.0	68.0	63.4	61.2	62.2	63.4	63.0	64.9	61.0	63.1	59.7	63.4	62.5	61.3	60.4							
8-year	59.6	65.4	62.0	60.6	60.6	62.0	60.8	63.6	59.9	61.0	57.7	59.8	60.4	58.1								
9-year	58.8	63.5	58.6	58.7	57.4	60.9	58.1	61.1	58.1	59.0	55.5	58.3	58.1									
10-year	56.4	61.7	56.4	56.8	56.5	60.5	56.4	58.6	56.2	57.4	52.2	56.6										
11-year	55.1	61.3	55.3	54.9	53.8	58.4	54.2	56.7	53.6	56.6	50.8											
12-year	54.9	58.1	54.2	53.8	52.2	56.8	51.1	53.5	50.0	54.8												
13-year	53.2	57.2	52.8	52.9	50.8	55.3	48.6	50.1	48.6													
14-year	52.7	55.1	51.2	50.1	50.7	53.6	47.3	47.7														
15-year	52.1	51.8	49.4	46.8	47.7	52.7	46.3															
16-year	49.2	49.4	48.5	45.1	46.2	50.3																
17-year	46.6	48.2	46.1	41.7	46.2																	
18-year	45.6	47.7	45.3	39.0																		
19-year	43.5	47.0	43.9																			
20-year	42.8	44.0																				
21-year	41.8																					

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 XII-7
LARYNX CANCER (Invasive)

INCIDENCE, MORTALITY, AND SURVIVAL RATES

By Year of Diagnosis/Death

All Races, Females

Year of Diagnosis/Death

	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Incidence																						
SEER	1.2	1.2	1.6	1.5	1.4	1.7	1.6	1.6	1.4	1.8	1.5	1.8	1.7	1.8	1.7	1.6	1.6	1.3	1.6	1.4	1.5	1.4
Mortality																						
U.S.	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.6	0.5	0.5	0.5	0.5	0.5	0.5
SEER	0.5	0.5	0.3	0.4	0.5	0.5	0.5	0.6	0.4	0.5	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.4
Relative Survival Rates (SEER)																						
1-year	85.8	86.5	90.7	86.2	89.9	89.2	87.1	88.9	87.2	90.1	88.5	85.4	86.0	87.7	85.9	90.6	87.5	85.8	78.9	81.6	89.5	
2-year	78.3	77.7	83.0	78.4	78.8	80.3	78.1	79.4	78.2	77.3	80.7	74.9	80.1	76.5	75.2	79.1	73.8	75.7	69.5	72.8		
3-year	73.3	70.4	73.9	72.6	71.9	73.6	75.2	72.1	70.1	73.0	69.9	64.6	77.5	72.1	70.4	73.6	72.4	65.2	61.9			
4-year	70.0	62.9	68.5	68.2	67.2	72.2	72.9	66.4	59.5	67.3	66.4	61.8	71.8	62.5	64.2	69.2	66.3	58.4				
5-year	65.7	57.9	65.1	64.3	63.1	70.8	71.1	61.8	56.9	65.3	63.6	60.2	68.5	58.2	62.6	64.0	62.6					
6-year	62.3	55.5	64.3	63.6	62.0	66.6	67.9	57.8	55.8	60.7	59.1	55.4	65.6	58.2	58.4	61.2						
7-year	59.7	53.9	60.0	62.0	60.1	64.2	63.1	55.7	54.0	57.3	56.8	52.3	62.5	53.4	55.3							
8-year	59.1	53.3	58.4	60.2	59.0	60.4	59.6	54.3	51.2	51.6	55.0	48.3	59.3	49.8								
9-year	56.4	51.7	53.8	59.3	57.8	59.3	56.0	52.0	49.3	47.9	49.7	44.0	54.4									
10-year	53.7	49.9	49.0	57.4	53.2	52.9	53.7	52.0	48.1	44.1	48.4	42.4										
11-year	51.9	49.9	46.3	51.8	49.3	52.3	53.0	49.8	44.0	40.7	45.2											
12-year	46.8	49.5	44.3	50.5	48.0	51.6	47.2	49.0	43.5	37.9												
13-year	45.9	46.6	41.4	49.2	44.6	49.1	46.2	45.6	40.7													
14-year	42.7	45.8	41.4	48.9	44.1	49.1	44.3	45.6														
15-year	42.7	45.0	39.6	41.0	42.5	47.1	44.1															
16-year	40.6	45.0	39.1	36.9	40.7	41.6																
17-year	40.6	41.8	33.9	35.9	35.1																	
18-year	40.6	41.8	33.1	34.8																		
19-year	40.6	37.8	31.2																			
20-year	35.5	35.9																				
21-year	35.4																					

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 XII-8
LARYNX 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 With Cancer and
 Lifetime Risk (Percent) of Dying From Cancer

9 SEER Areas, 1995-97

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	0.70	0.00	0.00	0.00	0.18	
10	0.00	0.00	0.00	0.71	0.00	0.00	0.00	0.18	
20	0.00	0.00	0.04	0.71	0.00	0.00	0.01	0.18	
30	0.00	0.04	0.17	0.73	0.00	0.01	0.04	0.18	
40	0.03	0.17	0.42	0.74	0.01	0.04	0.10	0.18	
50	0.15	0.40	0.63	0.73	0.03	0.10	0.14	0.17	
60	0.28	0.53	0.62	0.64	0.07	0.12	0.14	0.15	
Lifetime Risk of Being Diagnosed =				0.70%	Lifetime Risk of Being Diagnosed =				0.18%
Lifetime Risk of Dying =				0.21%	Lifetime Risk of Dying =				0.06%

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	0.18	
10	0.00	0.00	0.01	0.72	0.00	0.00	0.00	0.18	
20	0.00	0.01	0.04	0.72	0.00	0.00	0.01	0.18	
30	0.00	0.04	0.17	0.73	0.00	0.01	0.04	0.18	
40	0.03	0.17	0.42	0.74	0.01	0.04	0.10	0.18	
50	0.14	0.40	0.63	0.73	0.03	0.09	0.14	0.17	
60	0.28	0.53	0.63	0.64	0.06	0.12	0.14	0.15	
Lifetime Risk of Being Diagnosed =				0.71%	Lifetime Risk of Being Diagnosed =				0.18%
Lifetime Risk of Dying =				0.21%	Lifetime Risk of Dying =				0.06%

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	0.84	0.00	0.00	0.00	0.23	
10	0.00	0.00	0.00	0.86	0.00	0.00	0.00	0.23	
20	0.00	0.00	0.07	0.87	0.00	0.00	0.03	0.23	
30	0.00	0.08	0.32	0.90	0.00	0.03	0.08	0.23	
40	0.08	0.33	0.62	0.94	0.02	0.08	0.18	0.24	
50	0.28	0.59	0.87	0.95	0.06	0.16	0.21	0.22	
60	0.37	0.70	0.77	0.79	0.11	0.17	0.18	0.18	
Lifetime Risk of Being Diagnosed =				0.84%	Lifetime Risk of Being Diagnosed =				0.23%
Lifetime Risk of Dying =				0.35%	Lifetime Risk of Dying =				0.07%

Table XII-9
LARYNX CANCER (Invasive)

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

By Race/Ethnicity and Sex

Incidenceⁱ

RACE/ETHNICITY	Rate 1990-1997 Rate per 100,000 persons			Trend 1990-1997 EAPC (%)		
	Total	Males	Females	Total	Males	Females
All Races	3.9	6.9	1.4	-2.9★	-3.2★	-2.0
White	3.9	6.8	1.4	-2.8★	-3.2★	-1.9
White Hispanic	2.6	5.0	-	-2.9★	-2.5★	-
White Non-Hispanic	4.0	7.0	1.5	-2.7★	-3.2★	-1.6
Black	6.6	12.0	2.5	-3.6★	-4.0★	-2.9
Asian/Pacific Islander	1.6	3.1	0.4	1.4	2.3	-
American Indian	0.6	0.9	0.3	-	-	-
Hispanic [⊙]	2.4	4.7	-	-2.8★	-2.4★	-

Mortality[❖]

RACE/ETHNICITY	Rate 1990-1997 Rate per 100,000 persons			Trend 1990-1997 EAPC (%)		
	Total	Males	Females	Total	Males	Females
All Races	1.3	2.4	0.5	-1.4★	-1.6★	-1.4
White	1.2	2.2	0.5	-1.5★	-2.0★	-1.0
White Hispanic	1.0	2.0	0.2	0.0	0.1	-
White Non-Hispanic	1.2	2.2	0.5	-1.3★	-1.8★	-0.4
Black	2.8	5.4	0.9	-0.6	0.1	-3.2★
Asian/Pacific Islander	0.4	0.7	-	-2.0	-1.1	-
American Indian	-	-	-	-	-	-
Hispanic [⊙]	0.9	1.9	0.2	-0.6	-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, Hawaii, 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, Hawaii, 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).
- [★] The EAPC is significantly different from zero (p<.05).

Table XII-10
LARYNX 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§, 1993-97</u>									
REGISTRY									
11 registries	3.7	6.5	1.4	3.7	6.4	1.4	6.2	11.2	2.4
9 registries	3.8	6.8	1.4	3.8	6.7	1.4	6.4	11.7	2.3
San Francisco-Oakland	3.3	5.8	1.2	3.5	6.1	1.3	5.4	9.4	2.1
Connecticut	4.7	8.2	1.9	4.5	7.8	1.8	7.6	13.8	3.4
Metropolitan Detroit	4.9	8.8	1.8	4.3	7.8	1.5	7.1	13.3	2.6
Hawaii	2.6	4.8	0.6	4.9	8.4	1.3	-	-	-
Iowa	4.1	7.1	1.6	4.1	7.2	1.6	-	-	-
New Mexico	3.0	5.2	1.1	3.2	5.6	1.1	-	-	-
Seattle-Puget Sound	3.4	5.8	1.3	3.3	5.8	1.3	5.8	9.3	2.4
Utah	1.9	3.2	0.8	1.9	3.2	0.8	-	-	-
Metropolitan Atlanta	4.7	9.0	1.5	4.3	8.1	1.4	6.2	12.8	1.7
San Jose-Monterey	2.5	4.3	1.1	2.6	4.4	1.2	5.8	10.3	1.9
Los Angeles	3.6	6.4	1.3	3.6	6.2	1.3	5.7	10.1	2.4
<u>SEER MORTALITY RATES*, 1993-97</u>									
REGISTRY									
11 registries	1.1	2.0	0.4	1.0	1.9	0.4	2.4	4.6	0.8
9 registries	1.1	2.0	0.4	1.0	1.9	0.4	2.4	4.3	0.9
San Francisco-Oakland	0.9	1.6	0.4	1.0	1.6	0.4	1.9	3.0	1.1
Connecticut	1.2	2.1	0.6	1.1	1.9	0.5	2.7	5.3	1.0
Metropolitan Detroit	1.6	2.9	0.7	1.4	2.5	0.6	2.7	5.0	1.1
Hawaii	0.8	1.4	0.3	1.7	2.6	0.7	-	-	-
Iowa	1.1	2.2	0.4	1.1	2.1	0.4	-	-	-
New Mexico	1.0	1.8	0.3	1.1	1.9	0.4	-	-	-
Seattle-Puget Sound	0.8	1.5	0.3	0.8	1.5	0.3	1.6	3.2	0.0
Utah	0.4	0.9	0.1	0.4	0.9	0.1	-	-	-
Metropolitan Atlanta	1.3	2.5	0.4	1.1	2.0	0.4	2.0	4.3	0.5
San Jose-Monterey	0.7	1.3	0.3	0.8	1.3	0.3	3.8	7.1	0.9
Los Angeles	1.2	2.2	0.4	1.1	2.0	0.4	2.5	5.0	0.7

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 XII-11
LARYNX CANCER (Invasive)

AVERAGE ANNUAL AGE-ADJUSTED CANCER MORTALITY* RATES BY STATE, 1993-97

All Races, Males and Females

State	Rate	SE	Rank	PD
TOTAL U.S.	1.3	0.01		
High Five States				
District of Columbia	3.5⊕*	0.34	(01)	169.2
Rhode Island	1.9*	0.18	(02)	46.2
Louisiana	1.7*	0.09	(03)	30.8
West Virginia	1.7*	0.12	(04)	30.8
Kentucky	1.6*	0.09	(05)	23.1
Low Five States				
Washington	0.8⊕*	0.05	(47)	-38.5
Minnesota	0.8⊕*	0.06	(48)	-38.5
Hawaii	0.8*	0.11	(49)	-38.5
Alaska	0.7*	0.20	(50)	-46.2
Utah	0.4⊕*	0.07	(51)	-69.2

State	Rate	SE	Rank	PD	State	Rate	SE	Rank	PD
Alabama	1.2	0.07	(32)	-7.7	Montana	0.9*	0.13	(46)	-30.8
Alaska	0.7*	0.20	(50)	-46.2	Nebraska	1.0*	0.10	(41)	-23.1
Arizona	1.1*	0.07	(34)	-15.4	Nevada	1.6*	0.14	(08)	23.1
Arkansas	1.2	0.09	(29)	-7.7	New Hampshire	1.5*	0.16	(14)	15.4
California	1.0⊕*	0.03	(38)	-23.1	New Jersey	1.4	0.06	(18)	7.7
Colorado	1.0*	0.07	(42)	-23.1	New Mexico	1.0*	0.11	(39)	-23.1
Connecticut	1.2	0.08	(30)	-7.7	New York	1.6⊕*	0.04	(06)	23.1
Delaware	1.6*	0.20	(09)	23.1	North Carolina	1.2	0.06	(27)	-7.7
District of Columbia	3.5⊕*	0.34	(01)	169.2	North Dakota	1.5*	0.20	(17)	15.4
Florida	1.5*	0.04	(13)	15.4	Ohio	1.5*	0.05	(15)	15.4
Georgia	1.3	0.06	(24)	0.0	Oklahoma	1.2	0.08	(31)	-7.7
Hawaii	0.8*	0.11	(49)	-38.5	Oregon	0.9⊕*	0.07	(45)	-30.8
Idaho	0.9*	0.13	(44)	-30.8	Pennsylvania	1.3	0.04	(23)	0.0
Illinois	1.5*	0.05	(12)	15.4	Rhode Island	1.9*	0.18	(02)	46.2
Indiana	1.1*	0.06	(36)	-15.4	South Carolina	1.6*	0.09	(10)	23.1
Iowa	1.1*	0.08	(35)	-15.4	South Dakota	1.0*	0.15	(43)	-23.1
Kansas	1.0*	0.08	(40)	-23.1	Tennessee	1.5*	0.07	(11)	15.4
Kentucky	1.6*	0.09	(05)	23.1	Texas	1.4	0.04	(21)	7.7
Louisiana	1.7*	0.09	(03)	30.8	Utah	0.4⊕*	0.07	(51)	-69.2
Maine	1.4	0.14	(22)	7.7	Vermont	1.3	0.21	(26)	0.0
Maryland	1.6*	0.08	(07)	23.1	Virginia	1.5*	0.07	(16)	15.4
Massachusetts	1.4	0.06	(20)	7.7	Washington	0.8⊕*	0.05	(47)	-38.5
Michigan	1.4	0.05	(19)	7.7	West Virginia	1.7*	0.12	(04)	30.8
Minnesota	0.8⊕*	0.06	(48)	-38.5	Wisconsin	1.1*	0.06	(37)	-15.4
Mississippi	1.2	0.09	(28)	-7.7	Wyoming	1.3	0.22	(25)	0.0
Missouri	1.2	0.06	(33)	-7.7					

* 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.
⊕ Difference between state rate and total U.S. rate is statistically significant (p<=.0002).

Table XII-12
LARYNX CANCER (Invasive)

AVERAGE ANNUAL AGE-ADJUSTED CANCER MORTALITY* RATES BY STATE, 1993-97

All Races, Males

State	Rate	SE	Rank	PD	State	Rate	SE	Rank	PD
TOTAL U.S.	2.4	0.02							
High Five States									
District of Columbia	6.9⊕*	0.73	(01)	187.5					
Rhode Island	3.7*	0.38	(02)	54.2					
Louisiana	3.2*	0.18	(03)	33.3					
West Virginia	3.0*	0.24	(04)	25.0					
South Carolina	2.9*	0.19	(05)	20.8					
Low Five States									
Minnesota	1.5⊕*	0.11	(47)	-37.5					
Montana	1.5*	0.24	(48)	-37.5					
Hawaii	1.4*	0.21	(49)	-41.7					
Alaska	1.2*	0.42	(50)	-50.0					
Utah	0.9⊕*	0.15	(51)	-62.5					
Alabama	2.3	0.15	(26)	-4.2	Montana	1.5*	0.24	(48)	-37.5
Alaska	1.2*	0.42	(50)	-50.0	Nebraska	1.9*	0.21	(38)	-20.8
Arizona	1.9*	0.13	(36)	-20.8	Nevada	2.7	0.26	(16)	12.5
Arkansas	2.3	0.19	(27)	-4.2	New Hampshire	2.5	0.31	(21)	4.2
California	1.8⊕*	0.05	(41)	-25.0	New Jersey	2.6	0.11	(17)	8.3
Colorado	1.5⊕*	0.14	(44)	-37.5	New Mexico	1.8*	0.22	(40)	-25.0
Connecticut	2.1	0.16	(34)	-12.5	New York	2.9⊕*	0.08	(08)	20.8
Delaware	2.9*	0.39	(09)	20.8	North Carolina	2.4	0.12	(25)	0.0
District of Columbia	6.9⊕*	0.73	(01)	187.5	North Dakota	2.7	0.39	(13)	12.5
Florida	2.7	0.08	(14)	12.5	Ohio	2.7	0.10	(15)	12.5
Georgia	2.5	0.13	(24)	4.2	Oklahoma	2.1	0.16	(32)	-12.5
Hawaii	1.4*	0.21	(49)	-41.7	Oregon	1.6⊕*	0.14	(43)	-33.3
Idaho	1.5*	0.23	(45)	-37.5	Pennsylvania	2.5	0.09	(23)	4.2
Illinois	2.8*	0.10	(10)	16.7	Rhode Island	3.7*	0.38	(02)	54.2
Indiana	2.0*	0.12	(35)	-16.7	South Carolina	2.9*	0.19	(05)	20.8
Iowa	2.2	0.16	(31)	-8.3	South Dakota	1.9*	0.31	(37)	-20.8
Kansas	1.7*	0.16	(42)	-29.2	Tennessee	2.9*	0.15	(06)	20.8
Kentucky	2.8*	0.17	(11)	16.7	Texas	2.6	0.08	(20)	8.3
Louisiana	3.2*	0.18	(03)	33.3	Utah	0.9⊕*	0.15	(51)	-62.5
Maine	2.6	0.28	(19)	8.3	Vermont	2.2	0.39	(29)	-8.3
Maryland	2.9*	0.16	(07)	20.8	Virginia	2.7	0.14	(12)	12.5
Massachusetts	2.6	0.13	(18)	8.3	Washington	1.5⊕*	0.11	(46)	-37.5
Michigan	2.5	0.10	(22)	4.2	West Virginia	3.0*	0.24	(04)	25.0
Minnesota	1.5⊕*	0.11	(47)	-37.5	Wisconsin	1.9*	0.12	(39)	-20.8
Mississippi	2.3	0.19	(28)	-4.2	Wyoming	2.2	0.43	(30)	-8.3
Missouri	2.1	0.12	(33)	-12.5					

* 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.
⊕ Difference between state rate and total U.S. rate is statistically significant (p<=.0002).

Table XII-13
LARYNX CANCER (Invasive)

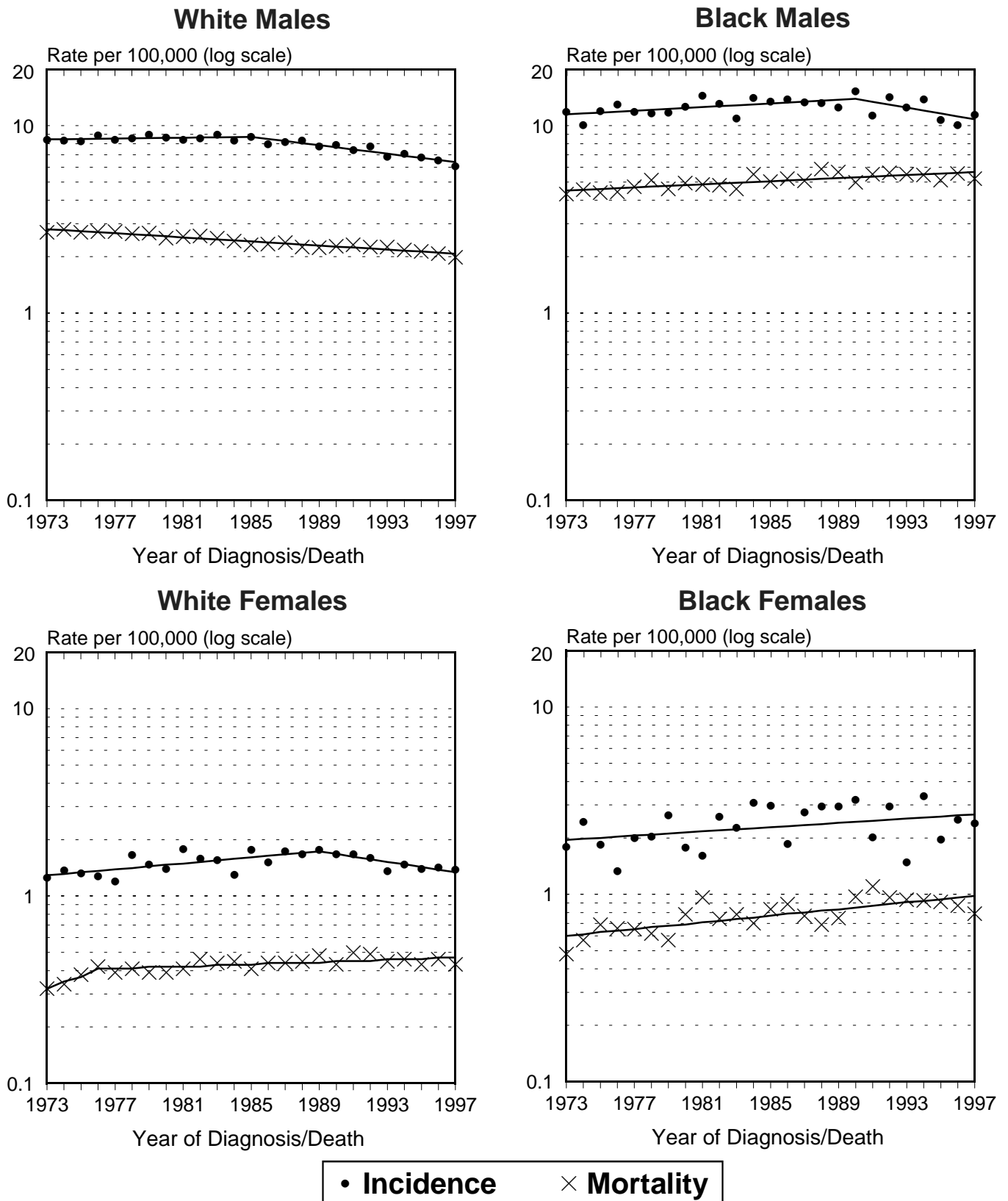
AVERAGE ANNUAL AGE-ADJUSTED CANCER MORTALITY* RATES BY STATE, 1993-97

All Races, Females

State	Rate	SE	Rank	PD	State	Rate	SE	Rank	PD
TOTAL U.S.	0.5	0.01							
High Five States									
District of Columbia	1.0*	0.24	(01)	100.0					
Kentucky	0.8*	0.08	(02)	60.0					
New Hampshire	0.7*	0.16	(03)	40.0					
West Virginia	0.7*	0.11	(04)	40.0					
Nevada	0.6*	0.12	(05)	20.0					
Low Five States									
Nebraska	0.3*	0.08	(47)	-40.0					
Hawaii	0.3*	0.08	(48)	-40.0					
South Dakota	0.2*	0.09	(49)	-60.0					
Alaska	0.1*	0.14	(50)	-80.0					
Utah	0.1⊕*	0.04	(51)	-80.0					
Alabama	0.4*	0.05	(38)	-20.0	Montana	0.4*	0.11	(42)	-20.0
Alaska	0.1*	0.14	(50)	-80.0	Nebraska	0.3*	0.08	(47)	-40.0
Arizona	0.5	0.06	(21)	0.0	Nevada	0.6*	0.12	(05)	20.0
Arkansas	0.4*	0.07	(41)	-20.0	New Hampshire	0.7*	0.16	(03)	40.0
California	0.4*	0.02	(37)	-20.0	New Jersey	0.5	0.05	(15)	0.0
Colorado	0.5	0.07	(18)	0.0	New Mexico	0.3*	0.08	(44)	-40.0
Connecticut	0.6*	0.07	(14)	20.0	New York	0.6*	0.03	(06)	20.0
Delaware	0.6*	0.17	(09)	20.0	North Carolina	0.4*	0.04	(39)	-20.0
District of Columbia	1.0*	0.24	(01)	100.0	North Dakota	0.4*	0.16	(32)	-20.0
Florida	0.5	0.03	(19)	0.0	Ohio	0.6*	0.04	(11)	20.0
Georgia	0.4*	0.05	(33)	-20.0	Oklahoma	0.5	0.07	(23)	0.0
Hawaii	0.3*	0.08	(48)	-40.0	Oregon	0.3*	0.06	(45)	-40.0
Idaho	0.4*	0.12	(29)	-20.0	Pennsylvania	0.5	0.03	(24)	0.0
Illinois	0.5	0.04	(22)	0.0	Rhode Island	0.5	0.12	(20)	0.0
Indiana	0.5	0.05	(26)	0.0	South Carolina	0.6*	0.07	(10)	20.0
Iowa	0.4*	0.06	(40)	-20.0	South Dakota	0.2*	0.09	(49)	-60.0
Kansas	0.4*	0.07	(35)	-20.0	Tennessee	0.4*	0.05	(31)	-20.0
Kentucky	0.8*	0.08	(02)	60.0	Texas	0.4*	0.03	(30)	-20.0
Louisiana	0.6*	0.07	(07)	20.0	Utah	0.1⊕*	0.04	(51)	-80.0
Maine	0.4*	0.10	(36)	-20.0	Vermont	0.5	0.17	(27)	0.0
Maryland	0.6*	0.06	(08)	20.0	Virginia	0.5	0.05	(16)	0.0
Massachusetts	0.5	0.05	(17)	0.0	Washington	0.3*	0.05	(43)	-40.0
Michigan	0.6*	0.04	(13)	20.0	West Virginia	0.7*	0.11	(04)	40.0
Minnesota	0.3*	0.05	(46)	-40.0	Wisconsin	0.4*	0.05	(34)	-20.0
Mississippi	0.5	0.08	(28)	0.0	Wyoming	0.6*	0.21	(12)	20.0
Missouri	0.5	0.05	(25)	0.0					

* 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.
⊕ Difference between state rate and total U.S. rate is statistically significant (p<=.0002).

SEER Incidence and U.S. Mortality Rates⁺ Larynx



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