

Table 3.1  
Cancer of the Brain and Other Nervous System (Invasive)

Trends in SEER Incidence<sup>ab</sup> and U.S. Mortality<sup>c</sup> Using the Joinpoint Regression Program,  
1975-2013 With up to Five Joinpoints, 1992-2013 With up to Four Joinpoints,  
Both Sexes by Race/Ethnicity

	JP Trend 1		JP Trend 2		JP Trend 3		JP Trend 4		JP Trend 5		JP Trend 6		AAPC <sup>d</sup>	
	Years	APC	Years	APC	Years	APC	Years	APC	Years	APC	Years	APC	2004-13	2009-13
<u>SEER 9 Delay-Adjusted Incidence<sup>a</sup>, 1975-2013</u>														
All Races	1975-87	1.4*	1987-13	-0.1*									-0.1*	-0.1*
White	1975-87	1.6*	1987-13	0.0									0.0	0.0
Black	1975-13	0.3											0.3	0.3
<u>SEER 13 Delay-Adjusted Incidence<sup>b</sup>, 1992-2013</u>														
All Races	1992-13	-0.2*											-0.2*	-0.2*
White	1992-13	0.0											0.0	0.0
Black	1992-13	0.1											0.1	0.1
<u>SEER 9 Observed Incidence<sup>a</sup>, 1975-2013</u>														
All Races	1975-87	1.5*	1987-13	-0.2*									-0.2*	-0.2*
White	1975-87	1.6*	1987-13	-0.1									-0.1	-0.1
Black	1975-13	0.2											0.2	0.2
<u>SEER 13 Observed Incidence<sup>b</sup>, 1992-2013</u>														
All Races	1992-13	-0.3*											-0.3*	-0.3*
White	1992-13	-0.1											-0.1	-0.1
White NH <sup>ef</sup>	1992-13	0.1											0.1	0.1
Black	1992-13	0.0											0.0	0.0
Black NH <sup>ef</sup>	1992-13	0.1											0.1	0.1
API <sup>e</sup>	1992-13	-0.2											-0.2	-0.2
AI/AN <sup>eg</sup>	1992-07	5.1*	2007-13	-10.4									-5.5	-10.4
Hispanic <sup>f</sup>	1992-02	1.2	2002-13	-1.8*									-1.8*	-1.8*
<u>U.S. Cancer Mortality<sup>c</sup>, 1975-2013</u>														
All Races	1975-77	3.7	1977-81	-0.7	1981-91	1.3*	1991-07	-0.9*	2007-13	0.5			0.0	0.5
White	1975-92	1.0*	1992-06	-0.9*	2006-13	0.4							0.1	0.4
Black	1975-90	0.9*	1990-13	-0.7*									-0.7*	-0.7*
<u>U.S. Cancer Mortality<sup>c</sup>, 1992-2013</u>														
All Races	1992-07	-1.0*	2007-13	0.5									0.0	0.5
White	1992-06	-0.9*	2006-13	0.4									0.1	0.4
White NH <sup>ef</sup>	1992-07	-0.7*	2007-13	0.8*									0.3	0.8*
Black	1992-13	-0.7*											-0.7*	-0.7*
Black NH <sup>ef</sup>	1992-13	-0.6*											-0.6*	-0.6*
API <sup>e</sup>	1992-13	0.2											0.2	0.2
AI/AN <sup>eg</sup>	1992-13	1.2											1.2	1.2
Hispanic <sup>f</sup>	1992-13	0.0											0.0	0.0

Joinpoint Regression Program Version 4.3.0.0, April 2016, National Cancer Institute. (<http://surveillance.cancer.gov/joinpoint/>).

The APC is the Annual Percent Change based on rates age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130).

Trends are from the SEER 9 areas (San Francisco, Connecticut, Detroit, Hawaii, Iowa, New Mexico, Seattle, Utah, and Atlanta).

Trends are from the SEER 13 areas (SEER 9 Areas, Los Angeles, San Jose-Monterey, Rural Georgia, and the Alaska Native Registry).

Trends are from US Mortality Files, National Center for Health Statistics, Centers for Disease Control and Prevention.

The AAPC is the Average Annual Percent Change and is based on the APCs calculated by Joinpoint.

API - Asian/Pacific Islander, AI/AN - American Indian/Alaska Native, NH - Non-Hispanic

Hispanic and Non-Hispanic are not mutually exclusive from whites, blacks, Asian/Pacific Islanders, and American Indians/Alaska

Natives. Incidence data for Hispanics and Non-Hispanics are based on NHIA and exclude cases from the Alaska Native Registry.

The Hispanic and Non-Hispanic mortality trends exclude deaths from New Hampshire and Oklahoma.

Data for American Indian/Alaska Native are based on the CHSDA (Contract Health Service Delivery Area) counties.

\* The APC/AAPC is significantly different from zero ( $p < .05$ ).

- Joinpoint regression line analysis could not be performed on data series.

a  
b  
c  
d  
e  
f  
g  
\*  
-

Table 3.2  
Cancer of the Brain and Other Nervous System (Invasive)

Trends in SEER Incidence<sup>ab</sup> and U.S. Mortality<sup>c</sup> Using the Joinpoint Regression Program,  
1975-2013 With up to Five Joinpoints, 1992-2013 With up to Four Joinpoints,  
Males by Race/Ethnicity

	JP Trend 1		JP Trend 2		JP Trend 3		JP Trend 4		JP Trend 5		JP Trend 6		AAPC <sup>d</sup>	
	Years	APC	Years	APC	Years	APC	Years	APC	Years	APC	Years	APC	2004-13	2009-13
<u>SEER 9 Delay-Adjusted Incidence<sup>a</sup>, 1975-2013</u>														
All Races	1975-89	1.2*	1989-13	-0.3*									-0.3*	-0.3*
White	1975-89	1.3*	1989-13	-0.2									-0.2	-0.2
Black	1975-13	0.0											0.0	0.0
<u>SEER 13 Delay-Adjusted Incidence<sup>b</sup>, 1992-2013</u>														
All Races	1992-13	-0.3*											-0.3*	-0.3*
White	1992-13	-0.2											-0.2	-0.2
Black	1992-13	0.3											0.3	0.3
<u>SEER 9 Observed Incidence<sup>a</sup>, 1975-2013</u>														
All Races	1975-89	1.2*	1989-13	-0.4*									-0.4*	-0.4*
White	1975-91	1.1*	1991-13	-0.3*									-0.3*	-0.3*
Black	1975-13	0.0											0.0	0.0
<u>SEER 13 Observed Incidence<sup>b</sup>, 1992-2013</u>														
All Races	1992-13	-0.4*											-0.4*	-0.4*
White	1992-13	-0.3*											-0.3*	-0.3*
White NH <sup>ef</sup>	1992-13	-0.1											-0.1	-0.1
Black	1992-13	0.2											0.2	0.2
Black NH <sup>ef</sup>	1992-13	0.3											0.3	0.3
API <sup>e</sup>	1992-13	-0.2											-0.2	-0.2
AI/AN <sup>eg</sup>	1992-13	0.1											0.1	0.1
Hispanic <sup>f</sup>	1992-04	1.5	2004-13	-2.4*									-2.4*	-2.4*
<u>U.S. Cancer Mortality<sup>c</sup>, 1975-2013</u>														
All Races	1975-77	4.4	1977-82	-0.4	1982-91	1.3*	1991-07	-0.9*	2007-13	0.5			0.0	0.5
White	1975-77	4.7	1977-82	-0.3	1982-91	1.4*	1991-06	-0.9*	2006-13	0.4			0.1	0.4
Black	1975-89	0.7	1989-13	-0.6*									-0.6*	-0.6*
<u>U.S. Cancer Mortality<sup>c</sup>, 1992-2013</u>														
All Races	1992-07	-0.9*	2007-13	0.5									0.0	0.5
White	1992-06	-0.9*	2006-13	0.4									0.1	0.4
White NH <sup>ef</sup>	1992-07	-0.7*	2007-13	0.7*									0.2	0.7*
Black	1992-13	-0.5*											-0.5*	-0.5*
Black NH <sup>ef</sup>	1992-13	-0.5*											-0.5*	-0.5*
API <sup>e</sup>	1992-13	0.5											0.5	0.5
AI/AN <sup>eg</sup>	1992-13	1.6											1.6	1.6
Hispanic <sup>f</sup>	1992-13	-0.1											-0.1	-0.1

Joinpoint Regression Program Version 4.3.0.0, April 2016, National Cancer Institute. (<http://surveillance.cancer.gov/joinpoint/>).

The APC is the Annual Percent Change based on rates age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130).

Trends are from the SEER 9 areas (San Francisco, Connecticut, Detroit, Hawaii, Iowa, New Mexico, Seattle, Utah, and Atlanta).

Trends are from the SEER 13 areas (SEER 9 Areas, Los Angeles, San Jose-Monterey, Rural Georgia, and the Alaska Native Registry).

Trends are from US Mortality Files, National Center for Health Statistics, Centers for Disease Control and Prevention.

The AAPC is the Average Annual Percent Change and is based on the APCs calculated by Joinpoint.

API - Asian/Pacific Islander, AI/AN - American Indian/Alaska Native, NH - Non-Hispanic

Hispanic and Non-Hispanic are not mutually exclusive from whites, blacks, Asian/Pacific Islanders, and American Indians/Alaska

Natives. Incidence data for Hispanics and Non-Hispanics are based on NHIA and exclude cases from the Alaska Native Registry.

The Hispanic and Non-Hispanic mortality trends exclude deaths from New Hampshire and Oklahoma.

Data for American Indian/Alaska Native are based on the CHSDA (Contract Health Service Delivery Area) counties.

\* The APC/AAPC is significantly different from zero ( $p < .05$ ).

- Joinpoint regression line analysis could not be performed on data series.

Table 3.3  
Cancer of the Brain and Other Nervous System (Invasive)

Trends in SEER Incidence<sup>ab</sup> and U.S. Mortality<sup>c</sup> Using the Joinpoint Regression Program,  
1975-2013 With up to Five Joinpoints, 1992-2013 With up to Four Joinpoints,  
Females by Race/Ethnicity

	JP Trend 1		JP Trend 2		JP Trend 3		JP Trend 4		JP Trend 5		JP Trend 6		AAPC <sup>d</sup>	
	Years	APC	Years	APC	Years	APC	Years	APC	Years	APC	Years	APC	2004-13	2009-13
<u>SEER 9 Delay-Adjusted Incidence<sup>a</sup>, 1975-2013</u>														
All Races	1975-87	1.5*	1987-13	-0.1									-0.1	-0.1
White	1975-87	1.7*	1987-13	0.1									0.1	0.1
Black	1975-13	0.6*											0.6*	0.6*
<u>SEER 13 Delay-Adjusted Incidence<sup>b</sup>, 1992-2013</u>														
All Races	1992-13	-0.1											-0.1	-0.1
White	1992-13	0.0											0.0	0.0
Black	1992-13	0.0											0.0	0.0
<u>SEER 9 Observed Incidence<sup>a</sup>, 1975-2013</u>														
All Races	1975-87	1.6*	1987-13	-0.1									-0.1	-0.1
White	1975-87	1.7*	1987-13	0.0									0.0	0.0
Black	1975-13	0.5*											0.5*	0.5*
<u>SEER 13 Observed Incidence<sup>b</sup>, 1992-2013</u>														
All Races	1992-13	-0.2											-0.2	-0.2
White	1992-13	-0.1											-0.1	-0.1
White NH <sup>ef</sup>	1992-13	0.2*											0.2*	0.2*
Black	1992-13	-0.1											-0.1	-0.1
Black NH <sup>ef</sup>	1992-13	0.0											0.0	0.0
API <sup>e</sup>	1992-13	-0.3											-0.3	-0.3
AI/AN <sup>eg</sup>	-	-											-	-
Hispanic <sup>f</sup>	1992-13	-0.9*											-0.9*	-0.9*
<u>U.S. Cancer Mortality<sup>c</sup>, 1975-2013</u>														
All Races	1975-92	1.0*	1992-06	-1.1*	2006-13	0.3							0.0	0.3
White	1975-92	1.0*	1992-06	-1.0*	2006-13	0.4							0.1	0.4
Black	1975-91	1.3*	1991-13	-0.8*									-0.8*	-0.8*
<u>U.S. Cancer Mortality<sup>c</sup>, 1992-2013</u>														
All Races	1992-06	-1.1*	2006-13	0.3									0.0	0.3
White	1992-06	-1.0*	2006-13	0.4									0.1	0.4
White NH <sup>ef</sup>	1992-07	-0.8*	2007-13	0.8									0.2	0.8
Black	1992-13	-0.8*											-0.8*	-0.8*
Black NH <sup>ef</sup>	1992-13	-0.8*											-0.8*	-0.8*
API <sup>e</sup>	1992-13	-0.1											-0.1	-0.1
AI/AN <sup>eg</sup>	1992-13	1.0											1.0	1.0
Hispanic <sup>f</sup>	1992-13	0.1											0.1	0.1

Joinpoint Regression Program Version 4.3.0.0, April 2016, National Cancer Institute. (<http://surveillance.cancer.gov/joinpoint/>).

The APC is the Annual Percent Change based on rates age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130).

Trends are from the SEER 9 areas (San Francisco, Connecticut, Detroit, Hawaii, Iowa, New Mexico, Seattle, Utah, and Atlanta).

Trends are from the SEER 13 areas (SEER 9 Areas, Los Angeles, San Jose-Monterey, Rural Georgia, and the Alaska Native Registry).

Trends are from US Mortality Files, National Center for Health Statistics, Centers for Disease Control and Prevention.

The AAPC is the Average Annual Percent Change and is based on the APCs calculated by Joinpoint.

API - Asian/Pacific Islander, AI/AN - American Indian/Alaska Native, NH - Non-Hispanic

Hispanic and Non-Hispanic are not mutually exclusive from whites, blacks, Asian/Pacific Islanders, and American Indians/Alaska

Natives. Incidence data for Hispanics and Non-Hispanics are based on NHIA and exclude cases from the Alaska Native Registry.

The Hispanic and Non-Hispanic mortality trends exclude deaths from New Hampshire and Oklahoma.

Data for American Indian/Alaska Native are based on the CHSDA (Contract Health Service Delivery Area) counties.

\* The APC/AAPC is significantly different from zero ( $p < .05$ ).

- Joinpoint regression line analysis could not be performed on data series.

Table 3.4  
 Cancer of the Brain and Other Nervous System (Invasive)  
 Delay-adjusted SEER Incidence<sup>a</sup> Rates by Year, Race and Sex

Year of Diagnosis:	All Races			Whites			Blacks		
	Total	Males	Females	Total	Males	Females	Total	Males	Females
1975	5.85	6.84	5.01	6.21	7.31	5.28	4.14	4.31	3.88
1976	5.82	7.14	4.68	6.18	7.51	5.03	3.32	5.37	1.56
1977	6.17	7.76	4.89	6.60	8.26	5.27	3.55	5.17	2.47
1978	5.76	6.79	4.91	6.10	7.19	5.19	3.86	4.34	3.51
1979	6.12	7.42	5.01	6.60	8.03	5.37	3.69	4.19	3.23
1980	6.30	7.58	5.24	6.81	8.20	5.65	3.14	3.35	2.92
1981	6.51	8.07	5.20	6.90	8.45	5.63	5.02	7.24	3.16
1982	6.43	7.93	5.25	6.92	8.57	5.64	3.71	4.40	3.05
1983	6.31	7.60	5.19	6.88	8.20	5.74	2.75	3.79	1.84
1984	6.12	7.18	5.20	6.49	7.64	5.49	4.53	5.34	3.88
1985	6.94	8.50	5.66	7.43	9.07	6.07	4.88	5.62	4.18
1986	6.85	8.06	5.82	7.37	8.60	6.33	4.13	4.75	3.54
1987	7.00	8.14	6.04	7.60	8.72	6.68	4.18	5.49	3.13
1988	6.83	7.89	5.91	7.39	8.58	6.37	4.45	4.48	4.38
1989	6.86	8.51	5.46	7.44	9.24	5.91	4.90	5.93	4.12
1990	7.05	8.11	6.18	7.59	8.75	6.63	4.33	5.18	3.64
1991	6.96	8.58	5.65	7.62	9.29	6.24	3.66	4.51	3.09
1992	6.98	8.67	5.61	7.64	9.47	6.16	3.61	4.01	3.28
1993	6.77	8.07	5.68	7.38	8.87	6.15	3.93	3.97	3.80
1994	6.63	7.99	5.44	7.13	8.56	5.90	4.24	4.52	3.97
1995	6.50	7.97	5.31	7.05	8.60	5.78	4.06	5.15	3.22
1996	6.68	8.23	5.35	7.29	8.98	5.81	4.02	5.09	3.37
1997	6.76	8.09	5.63	7.42	8.87	6.17	4.03	5.30	3.12
1998	6.64	7.75	5.71	7.25	8.43	6.26	4.25	4.56	4.08
1999	6.92	8.37	5.69	7.68	9.22	6.35	3.75	5.05	2.70
2000	6.80	8.23	5.64	7.51	9.10	6.19	4.46	5.47	3.69
2001	6.64	8.00	5.53	7.30	8.68	6.14	4.14	5.27	3.38
2002	6.76	8.10	5.66	7.52	8.94	6.34	4.25	5.50	3.36
2003	6.66	7.63	5.84	7.24	8.34	6.31	4.70	4.49	4.71
2004	6.85	8.02	5.78	7.65	8.91	6.48	4.11	4.59	3.56
2005	6.77	7.83	5.85	7.49	8.72	6.42	4.56	4.99	4.17
2006	6.45	7.83	5.25	7.20	8.76	5.78	3.76	4.26	3.48
2007	6.62	7.78	5.60	7.35	8.76	6.08	4.55	4.73	4.37
2008	6.75	8.03	5.70	7.63	8.94	6.53	3.57	4.50	2.93
2009	6.87	8.02	5.86	7.61	8.99	6.36	4.73	4.34	4.95
2010	6.61	7.62	5.70	7.30	8.35	6.33	4.22	4.60	3.93
2011	6.70	7.91	5.63	7.53	8.76	6.42	4.36	4.80	4.01
2012	6.60	7.81	5.56	7.35	8.64	6.20	4.45	5.69	3.58
2013	6.62	7.66	5.70	7.33	8.37	6.41	4.12	5.05	3.33

Additional information on the model used to delay-adjust SEER Incidence rates can be found at <http://surveillance.cancer.gov/delay/>.

<sup>a</sup> SEER 9 areas (San Francisco, Connecticut, Detroit, Hawaii, Iowa, New Mexico, Seattle, Utah, and Atlanta).  
 Rates are per 100,000 and are age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130).  
 - Delay-adjusted rate is not shown for observed rates based on less than 16 cases for the time interval.

Table 3.5  
Cancer of the Brain and Other Nervous System (Invasive)  
Age-adjusted SEER Incidence<sup>a</sup> Rates by Year, Race and Sex

Year of Diagnosis:	All Races			Whites			Blacks		
	Total	Males	Females	Total	Males	Females	Total	Males	Females
1975-2013	6.61	7.89	5.53	7.22	8.59	6.04	4.12	4.84	3.55
1975	5.85	6.84	5.01	6.21	7.31	5.28	4.14	4.31	3.88
1976	5.82	7.14	4.68	6.18	7.51	5.03	3.32	5.37	-
1977	6.17	7.76	4.89	6.60	8.26	5.27	3.55	5.17	2.47
1978	5.76	6.79	4.91	6.10	7.19	5.19	3.86	4.34	3.51
1979	6.12	7.42	5.01	6.60	8.03	5.37	3.69	4.19	3.23
1980	6.30	7.58	5.24	6.81	8.20	5.65	3.14	3.35	2.92
1981	6.51	8.07	5.20	6.90	8.45	5.63	5.02	7.24	3.16
1982	6.43	7.93	5.25	6.92	8.57	5.64	3.71	4.40	3.05
1983	6.31	7.60	5.19	6.88	8.20	5.74	2.75	3.79	1.84
1984	6.12	7.18	5.20	6.49	7.64	5.49	4.53	5.34	3.88
1985	6.94	8.50	5.66	7.43	9.07	6.07	4.88	5.62	4.18
1986	6.85	8.06	5.82	7.37	8.60	6.33	4.13	4.75	3.54
1987	7.00	8.14	6.04	7.60	8.72	6.68	4.18	5.49	3.13
1988	6.83	7.89	5.91	7.39	8.58	6.37	4.45	4.48	4.38
1989	6.86	8.51	5.46	7.44	9.24	5.91	4.90	5.93	4.12
1990	7.05	8.11	6.18	7.59	8.75	6.63	4.33	5.18	3.64
1991	6.96	8.58	5.65	7.62	9.29	6.24	3.66	4.51	3.09
1992	6.98	8.67	5.61	7.64	9.47	6.16	3.61	4.01	3.28
1993	6.77	8.07	5.68	7.38	8.87	6.15	3.93	3.97	3.80
1994	6.63	7.99	5.44	7.13	8.56	5.90	4.24	4.52	3.97
1995	6.50	7.97	5.31	7.05	8.60	5.78	4.06	5.15	3.22
1996	6.68	8.23	5.35	7.29	8.98	5.81	4.02	5.09	3.37
1997	6.76	8.09	5.63	7.42	8.87	6.17	4.03	5.30	3.12
1998	6.64	7.75	5.71	7.25	8.43	6.26	4.25	4.56	4.08
1999	6.92	8.37	5.69	7.68	9.22	6.35	3.75	5.05	2.70
2000	6.80	8.23	5.64	7.51	9.10	6.19	4.46	5.47	3.69
2001	6.64	8.00	5.53	7.30	8.68	6.14	4.14	5.27	3.38
2002	6.76	8.10	5.66	7.52	8.94	6.34	4.25	5.50	3.36
2003	6.66	7.63	5.84	7.24	8.34	6.31	4.70	4.49	4.71
2004	6.85	8.02	5.78	7.65	8.91	6.48	4.11	4.59	3.56
2005	6.76	7.82	5.85	7.48	8.71	6.41	4.55	4.99	4.16
2006	6.43	7.81	5.23	7.17	8.74	5.76	3.75	4.25	3.47
2007	6.59	7.75	5.58	7.31	8.72	6.05	4.53	4.71	4.36
2008	6.71	7.98	5.66	7.58	8.89	6.49	3.55	4.47	2.92
2009	6.82	7.96	5.82	7.55	8.93	6.31	4.70	4.31	4.92
2010	6.55	7.56	5.65	7.23	8.27	6.27	4.19	4.56	3.90
2011	6.61	7.81	5.56	7.43	8.64	6.33	4.32	4.75	3.97
2012	6.48	7.66	5.46	7.21	8.47	6.08	4.38	5.60	3.53
2013	6.41	7.42	5.51	7.08	8.09	6.18	3.99	4.91	3.22

<sup>a</sup> SEER 9 areas (San Francisco, Connecticut, Detroit, Hawaii, Iowa, New Mexico, Seattle, Utah, and Atlanta). Rates are per 100,000 and are age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130).  
- Statistic not shown. Rate based on less than 16 cases for the time interval.

Table 3.6  
Cancer of the Brain and Other Nervous System (Invasive)  
Age-adjusted U.S. Death<sup>a</sup> Rates by Year, Race and Sex

Year of Death:	All Races			Whites			Blacks		
	Total	Males	Females	Total	Males	Females	Total	Males	Females
1975-2013	4.51	5.51	3.69	4.82	5.87	3.96	2.62	3.23	2.16
1975	4.11	4.96	3.40	4.32	5.20	3.60	2.41	3.20	1.75
1976	4.34	5.28	3.56	4.54	5.50	3.74	2.66	3.54	1.98
1977	4.40	5.39	3.59	4.63	5.69	3.77	2.54	2.99	2.18
1978	4.53	5.54	3.71	4.76	5.82	3.91	2.70	3.36	2.18
1979	4.26	5.25	3.45	4.48	5.50	3.64	2.63	3.30	2.11
1980	4.37	5.45	3.47	4.62	5.77	3.66	2.46	3.04	2.02
1981	4.36	5.33	3.59	4.60	5.58	3.80	2.55	3.31	1.98
1982	4.43	5.38	3.67	4.67	5.67	3.88	2.64	3.37	2.09
1983	4.39	5.31	3.64	4.66	5.64	3.85	2.49	2.91	2.18
1984	4.55	5.57	3.74	4.82	5.86	4.00	2.56	3.35	1.94
1985	4.57	5.60	3.75	4.85	5.92	3.99	2.54	3.22	2.02
1986	4.53	5.59	3.68	4.78	5.90	3.87	2.77	3.47	2.27
1987	4.71	5.68	3.93	4.99	6.00	4.17	2.89	3.55	2.36
1988	4.72	5.89	3.79	4.98	6.21	4.00	2.91	3.63	2.39
1989	4.73	5.82	3.88	5.01	6.15	4.12	2.73	3.47	2.23
1990	4.87	5.97	3.99	5.16	6.30	4.24	2.97	3.66	2.42
1991	4.95	6.01	4.11	5.27	6.37	4.37	2.84	3.42	2.41
1992	4.85	5.88	4.03	5.17	6.26	4.30	2.82	3.41	2.39
1993	4.79	5.87	3.91	5.09	6.23	4.17	2.83	3.59	2.27
1994	4.84	5.88	3.97	5.17	6.26	4.25	2.69	3.23	2.26
1995	4.67	5.67	3.86	4.97	6.02	4.11	2.77	3.40	2.33
1996	4.73	5.74	3.91	5.07	6.14	4.19	2.64	3.24	2.21
1997	4.68	5.66	3.90	4.99	6.03	4.13	2.87	3.30	2.55
1998	4.68	5.70	3.83	5.00	6.06	4.12	2.73	3.39	2.24
1999	4.64	5.66	3.81	4.98	6.04	4.10	2.73	3.28	2.29
2000	4.53	5.58	3.67	4.86	5.96	3.93	2.70	3.28	2.24
2001	4.45	5.49	3.59	4.78	5.88	3.86	2.58	3.13	2.19
2002	4.45	5.46	3.62	4.78	5.83	3.90	2.63	3.20	2.21
2003	4.40	5.36	3.62	4.74	5.73	3.92	2.66	3.36	2.11
2004	4.31	5.22	3.53	4.64	5.59	3.82	2.46	2.98	2.04
2005	4.34	5.31	3.53	4.69	5.69	3.84	2.52	3.23	1.99
2006	4.17	5.12	3.39	4.53	5.53	3.67	2.34	2.91	1.93
2007	4.21	5.10	3.47	4.58	5.52	3.78	2.37	2.75	2.07
2008	4.28	5.25	3.46	4.64	5.65	3.77	2.48	3.15	2.01
2009	4.35	5.27	3.57	4.73	5.72	3.88	2.53	2.98	2.17
2010	4.25	5.22	3.42	4.59	5.63	3.68	2.54	3.08	2.15
2011	4.25	5.20	3.44	4.64	5.66	3.75	2.37	2.82	2.01
2012	4.40	5.42	3.52	4.78	5.84	3.85	2.67	3.44	2.14
2013	4.34	5.22	3.59	4.73	5.64	3.95	2.43	3.16	1.89

<sup>a</sup> US Mortality Files, National Center for Health Statistics, Centers for Disease Control and Prevention. Rates are per 100,000 and are age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130).  
- Statistic not shown. Rate based on less than 16 cases for the time interval.

Table 3.7  
Cancer of the Brain and Other Nervous System (Invasive)  
SEER Incidence<sup>a</sup> and U.S. Death<sup>b</sup> 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>SEER Incidence</u>									
<u>Age at Diagnosis</u>									
Age-Adjusted Rates, 2009-2013									
All ages	6.4	7.6	5.4	7.1	8.3	6.0	4.1	4.9	3.6
Under 65	4.5	5.2	3.9	5.0	5.7	4.3	3.1	3.4	2.7
65 and over	19.4	24.1	15.9	21.3	26.4	17.5	11.7	15.0	9.6
All ages (IARC world std) <sup>c</sup>	5.3	6.1	4.5	5.8	6.7	5.0	3.5	4.0	3.2
Age-Specific Rates, 2009-2013									
<1	3.7	3.9	3.6	3.8	4.3	3.3	3.7	-	5.0
1-4	4.2	4.4	3.9	4.5	4.7	4.3	3.3	3.1	3.5
5-9	3.5	3.5	3.5	3.7	3.8	3.6	3.0	2.7	3.4
10-14	2.7	2.8	2.5	2.9	3.1	2.7	2.2	2.3	2.1
15-19	2.2	2.4	2.1	2.4	2.6	2.1	1.8	2.0	1.6
20-24	2.2	2.3	2.1	2.4	2.6	2.3	1.4	1.4	1.3
25-29	2.8	3.1	2.5	3.2	3.5	2.9	1.4	1.5	1.3
30-34	3.4	4.0	2.9	3.9	4.4	3.3	2.2	2.5	2.0
35-39	3.7	4.5	2.9	4.0	5.0	3.1	2.4	2.6	2.1
40-44	4.0	4.8	3.2	4.4	5.1	3.6	2.8	3.8	2.0
45-49	5.8	6.9	4.8	6.5	7.7	5.3	3.7	4.0	3.4
50-54	7.2	8.6	6.0	8.2	9.5	6.8	4.6	5.5	3.8
55-59	10.1	12.1	8.2	11.2	13.4	9.1	6.8	8.2	5.6
60-64	13.2	15.7	10.8	14.9	17.7	12.4	7.1	8.8	5.7
65-69	16.5	19.7	13.6	18.2	21.6	15.1	10.8	13.9	8.5
70-74	18.6	23.1	14.8	20.7	25.6	16.5	10.4	12.9	8.6
75-79	22.2	27.0	18.5	24.5	29.7	20.4	12.8	15.2	11.2
80-84	22.5	29.3	18.0	24.4	31.6	19.4	14.4	20.1	11.3
85+	19.2	24.6	16.5	20.6	26.5	17.6	11.1	15.4	9.4
<u>U.S. Mortality</u>									
<u>Age at Death</u>									
Age-Adjusted Rates, 2009-2013									
All ages	4.3	5.3	3.5	4.7	5.7	3.8	2.5	3.1	2.1
Under 65	2.4	2.9	1.9	2.6	3.2	2.1	1.5	1.8	1.2
65 and over	17.7	21.8	14.7	19.1	23.3	15.9	9.8	12.4	8.1
All ages (IARC world std) <sup>c</sup>	3.1	3.7	2.5	3.4	4.0	2.7	1.8	2.2	1.5
Age-Specific Rates, 2009-2013									
<1	0.4	0.4	0.3	0.4	0.5	0.3	-	-	-
1-4	0.6	0.7	0.6	0.6	0.7	0.6	0.6	0.6	0.5
5-9	0.9	1.0	0.9	1.0	1.0	0.9	0.8	0.8	0.9
10-14	0.6	0.7	0.6	0.6	0.7	0.6	0.6	0.6	0.5
15-19	0.5	0.6	0.4	0.5	0.6	0.4	0.6	0.6	0.5
20-24	0.6	0.6	0.5	0.6	0.7	0.5	0.5	0.5	0.4
25-29	0.8	1.0	0.6	0.9	1.1	0.6	0.5	0.6	0.5
30-34	1.1	1.4	0.9	1.3	1.6	1.0	0.6	0.7	0.5
35-39	1.6	2.0	1.2	1.8	2.3	1.4	1.0	1.2	0.8
40-44	2.3	2.9	1.7	2.6	3.2	1.9	1.3	1.6	1.0
45-49	3.5	4.4	2.7	4.0	4.9	3.1	2.0	2.4	1.6
50-54	5.3	6.6	4.1	5.9	7.3	4.6	3.1	3.9	2.4
55-59	7.8	9.7	6.1	8.7	10.6	6.8	4.4	5.7	3.3
60-64	11.0	13.2	9.1	12.1	14.2	10.1	6.3	8.0	4.9
65-69	14.0	16.9	11.5	15.3	18.3	12.6	7.1	9.1	5.5
70-74	17.0	20.6	13.9	18.5	22.1	15.3	9.1	11.6	7.2
75-79	19.8	24.3	16.4	21.5	26.2	17.7	10.1	13.0	8.3
80-84	21.5	26.3	18.3	22.7	27.5	19.3	13.8	17.9	11.5
85+	19.4	25.3	16.5	20.2	26.5	17.1	12.2	13.8	11.6

<sup>a</sup> SEER 18 areas. Rates are per 100,000 and are age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130), unless noted.

<sup>b</sup> US Mortality Files, National Center for Health Statistics, Centers for Disease Control and Prevention. Rates are per 100,000 and are age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130), unless noted.

<sup>c</sup> Rates are per 100,000 and are age-adjusted to the IARC world standard population.

- Statistic not shown. Rate based on less than 16 cases for the time interval.

Table 3.8  
Cancer of the Brain and Other Nervous System (Invasive)

5-Year Relative and Period Survival (Percent) by Race, Sex, Diagnosis Year, Stage and Age

	All Races			Whites			Blacks		
	Total	Males	Females	Total	Males	Females	Total	Males	Females
5-Year Relative Survival (Percent)									
Year of Diagnosis:									
1960-1963 <sup>a</sup>	-	-	-	18	16	21	19	17	21
1970-1973 <sup>a</sup>	-	-	-	20	18	22	19	19	19
1975-1977 <sup>b</sup>	22.4	20.7	24.7	21.8	20.2	24.0	25.4	19.6	34.7 <sup>g</sup>
1978-1980 <sup>b</sup>	23.6	22.4	25.1	23.0	22.0	24.4	28.2	28.7	27.5
1981-1983 <sup>b</sup>	24.1	23.0	25.5	23.3	22.4	24.5	30.8	31.7	29.2 <sup>g</sup>
1984-1986 <sup>b</sup>	26.9	25.6	28.4	26.1	24.8	27.8	30.8	32.8	28.3
1987-1989 <sup>b</sup>	28.9	27.3	31.0	28.2	26.3	30.7	31.6	33.5	29.3
1990-1992 <sup>b</sup>	30.1	30.5	29.7	29.1	29.3	28.8	39.5	40.7	38.1
1993-1995 <sup>b</sup>	32.2	32.9	31.3	30.9	31.3	30.3	41.7	46.1	36.8
1996-1998 <sup>b</sup>	31.2	30.5	32.0	30.4	30.0	30.9	36.0	33.8	38.3
1999-2001 <sup>b</sup>	33.8	30.9	37.5	33.0	30.4	36.4	38.6	33.8	45.1
2002-2005 <sup>b</sup>	34.9	34.1	35.8	33.8	33.7	34.1	38.6	32.8	44.5
2006-2012 <sup>b</sup>	35.0 <sup>f</sup>	33.9 <sup>f</sup>	36.3 <sup>f</sup>	33.4 <sup>f</sup>	32.5 <sup>f</sup>	34.6 <sup>f</sup>	43.7 <sup>f</sup>	40.6 <sup>f</sup>	46.5 <sup>f</sup>
5-Year Period Survival (Percent) <sup>cd</sup>									
2012	33.8	32.7	35.1	32.8	31.7	34.0	38.4	35.9	40.9
Stage Distribution (%) 2006-2012 <sup>ce</sup>									
All Stages									
Number of cases	33,736	18,812	14,924	29,008	16,287	12,721	2,431	1,254	1,177
Percent	100%	100%	100%	100%	100%	100%	100%	100%	100%
Localized	77	78	76	77	78	76	76	78	74
Regional	16	15	16	16	15	16	15	14	17
Distant	2	2	2	2	2	2	3	3	4
Unstaged	5	4	6	5	4	6	5	5	5
5-Year Relative Survival (Percent), 2006-2012 <sup>c</sup>									
Age at Diagnosis:									
Ages <45	68.4	66.4	71.2	69.1	67.1	71.8	64.5	61.3	67.5
Ages 45-54	32.8	29.8	37.3	32.4	29.3	37.0	33.9	29.5	39.4
Ages 55-64	16.4	14.8	18.7	16.0	14.2	18.7	16.8	15.3	18.3
Ages 65-74	9.0	7.8	10.4	9.0	7.8	10.6	6.4	7.0	6.4
Ages 75+	4.9	5.0	4.8	4.3	4.8	3.9	9.6	3.4	13.4
Ages <65	45.5	42.8	49.2	44.6	42.0	48.3	48.0	43.9	52.4
Ages 65+	7.0	6.6	7.5	6.7	6.4	7.0	7.4	6.0	8.7
Stage <sup>e</sup> :									
All Stages	33.8	32.8	35.1	32.6	31.8	33.7	39.8	36.8	43.0
Localized	36.7	35.3	38.5	35.5	34.4	37.1	42.0	39.1	45.2
Regional	22.1	21.8	22.5	21.2	21.1	21.4	28.4	24.8	31.7
Distant	36.3	34.7	38.2	35.9	34.9	37.1	36.2 <sup>g</sup>	29.4 <sup>h</sup>	41.0 <sup>g</sup>
Unstaged	24.6	25.5	23.7	22.1	22.6	21.5	43.0	38.3 <sup>g</sup>	47.8 <sup>g</sup>

<sup>a</sup> Based on End Results data from a series of hospital registries and one population-based registry.

<sup>b</sup> SEER 9 areas (San Francisco, Connecticut, Detroit, Hawaii, Iowa, New Mexico, Seattle, Utah, Atlanta).

Based on follow-up of patients into 2013.

<sup>c</sup> SEER 18 areas (San Francisco, Connecticut, Detroit, Hawaii, Iowa, New Mexico, Seattle, Utah, Atlanta, San Jose-Monterey, Los Angeles, Alaska Native Registry, Rural Georgia, California excluding SF/SJM/LA, Kentucky, Louisiana, New Jersey and Georgia excluding ATL/RG).

Based on follow-up of patients into 2013.

<sup>d</sup> Period survival provides a 2012 estimate of survival by piecing together the most recent conditional survival estimates from several cohorts. It is computed here using three year calendar blocks (2010-2012: 0-1 year survival), (2009-2011: 1-2 year survival), (2008-2010: 2-3 year survival), (2007-2009: 3-4 year survival), (2006-2008: 4-5 years survival).

<sup>e</sup> Stage at diagnosis is classified using SEER Summary Stage 2000. Stage distribution percentages may not sum to 100 due to rounding.

<sup>f</sup> The difference between 1975-1977 and 2006-2012 is statistically significant ( $p < .05$ ).

<sup>g</sup> The standard error is between 5 and 10 percentage points.

<sup>h</sup> The standard error is greater than 10 percentage points.

- Statistic could not be calculated due to fewer than 25 cases during the time period.



Table 3.9  
Cancer of the Brain and Other Nervous System (Invasive)

SEER<sup>a</sup> Relative Survival (Percent)  
By Year of Diagnosis

All Races, Males and Females

Year of Diagnosis

	1975- 1979	1980- 1984	1985- 1989	1990- 1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Survival Time																						
1-year	46.3	47.4	50.9	52.7	52.3	53.3	51.4	54.1	55.0	55.6	57.3	59.3	56.9	57.2	58.5	61.7	61.7	62.3	62.5	61.6	60.6	62.6
2-year	32.3	33.8	36.8	38.8	39.1	40.7	38.0	40.7	40.2	41.7	42.3	46.4	43.3	43.1	45.7	47.0	47.2	46.5	46.7	46.3	44.2	
3-year	27.9	29.4	32.6	34.9	36.1	36.6	34.1	35.6	35.9	38.2	38.9	40.3	38.0	38.2	39.8	40.4	40.7	40.8	41.1	39.2		
4-year	25.1	26.5	29.9	32.5	34.4	34.5	31.8	32.8	33.6	36.0	36.6	38.0	35.8	36.0	37.0	37.9	37.2	37.3	37.7			
5-year	23.1	24.6	27.9	30.7	33.3	32.5	30.2	30.9	32.2	34.7	34.6	35.8	33.9	35.0	34.7	35.6	35.1	35.7				
6-year	21.4	23.1	26.5	29.5	32.3	31.2	28.1	29.6	30.7	33.2	33.6	34.2	32.7	33.5	32.6	33.8	33.1					
7-year	20.4	21.9	25.4	28.2	31.3	30.3	27.4	28.5	29.9	31.6	32.3	33.3	31.1	32.0	31.6	33.0						
8-year	19.4	20.8	24.1	27.4	30.5	28.8	26.6	27.6	29.2	30.8	31.4	32.4	30.1	31.0	30.2							
9-year	18.4	19.8	23.3	26.5	29.9	27.7	25.6	27.0	28.1	29.9	30.8	31.4	29.3	30.1								
10-year	17.7	18.8	22.5	25.8	28.9	27.1	24.4	26.2	27.6	29.1	30.3	30.5	28.9									
11-year	17.1	18.1	21.9	25.2	28.1	26.1	23.8	25.6	26.7	28.1	29.4	29.6										
12-year	16.6	17.6	21.3	24.5	27.8	25.1	23.0	24.9	25.9	27.2	28.6											
13-year	16.2	16.9	20.8	24.1	26.6	24.7	22.7	24.2	25.4	26.5												
14-year	15.8	16.5	20.1	23.4	25.9	24.4	22.4	23.5	24.9													
15-year	15.3	16.0	19.5	22.8	25.3	23.9	22.4	22.2														
16-year	15.0	15.5	19.2	22.4	24.2	23.2	21.5															
17-year	14.6	15.2	18.7	21.9	23.9	23.1																
18-year	14.4	14.8	18.2	21.4	23.8																	
19-year	14.0	14.3	17.7	21.1																		
20-year	13.7	13.9	17.5																			

<sup>a</sup> Based on the SEER 9 areas (San Francisco, Connecticut, Detroit, Hawaii, Iowa, New Mexico, Seattle, Utah, and Atlanta).

Table 3.10  
Cancer of the Brain and Other Nervous System (Invasive)

SEER<sup>a</sup> Relative Survival (Percent)  
By Year of Diagnosis

All Races, Males

Year of Diagnosis

	1975- 1979	1980- 1984	1985- 1989	1990- 1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Survival Time																						
1-year	45.8	48.4	51.0	54.5	54.5	54.5	54.4	54.2	55.0	54.2	55.1	59.0	57.0	59.3	57.8	63.8	61.6	62.7	63.8	63.2	61.7	63.0
2-year	31.3	33.5	36.1	39.6	40.3	39.7	39.5	39.8	38.8	39.6	38.5	46.1	41.8	44.5	44.7	46.9	45.5	45.8	45.8	46.9	43.9	
3-year	26.4	29.3	31.5	35.3	37.2	35.8	34.9	35.1	34.1	35.8	35.2	39.1	36.1	39.4	39.0	39.5	39.0	40.0	40.8	39.0		
4-year	23.9	25.9	28.5	33.0	35.9	33.6	32.5	31.7	31.5	33.3	32.5	36.2	34.2	36.7	36.4	36.6	34.3	35.3	36.6			
5-year	21.5	23.6	26.3	31.1	34.8	31.2	30.4	29.9	29.9	32.1	30.8	33.4	32.9	35.8	34.2	35.1	32.9	33.8				
6-year	20.0	22.2	24.9	29.9	33.4	29.6	28.1	27.9	28.4	30.7	29.8	31.4	31.5	34.4	31.5	33.2	30.7					
7-year	18.9	21.1	23.7	28.5	32.1	28.7	27.1	26.8	27.8	28.5	28.6	30.4	29.7	32.7	30.0	32.3						
8-year	17.8	20.2	22.5	27.8	30.9	27.1	26.5	26.0	26.9	27.7	27.6	29.5	28.5	31.3	28.5							
9-year	16.9	19.0	21.9	26.8	30.1	26.0	25.8	25.1	25.3	26.7	27.2	28.5	28.0	30.2								
10-year	16.3	18.0	21.0	26.1	29.1	25.5	24.7	24.5	24.5	25.7	27.1	27.8	27.5									
11-year	15.5	17.4	20.5	25.3	28.3	24.7	24.3	23.6	23.1	24.8	26.1	26.5										
12-year	14.9	16.9	20.0	24.7	27.9	23.5	23.1	22.8	22.5	23.9	25.0											
13-year	14.5	16.3	19.5	24.3	26.4	23.2	22.9	22.5	22.3	23.7												
14-year	14.4	15.8	18.9	23.5	25.5	23.0	22.6	21.9	21.8													
15-year	13.9	15.3	18.3	22.8	24.8	22.6	22.6	20.8														
16-year	13.8	14.8	18.0	22.4	23.0	21.8	22.1															
17-year	13.5	14.4	17.6	21.9	22.7	21.5																
18-year	13.2	14.1	17.1	21.5	22.5																	
19-year	12.8	13.6	16.6	21.3																		
20-year	12.6	13.3	16.4																			

<sup>a</sup> Based on the SEER 9 areas (San Francisco, Connecticut, Detroit, Hawaii, Iowa, New Mexico, Seattle, Utah, and Atlanta).

Table 3.11  
Cancer of the Brain and Other Nervous System (Invasive)

SEER<sup>a</sup> Relative Survival (Percent)  
By Year of Diagnosis

All Races, Females

Year of Diagnosis

	1975- 1979	1980- 1984	1985- 1989	1990- 1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Survival Time																						
1-year	47.0	46.2	50.7	50.4	49.5	51.7	47.6	53.9	55.0	57.3	60.2	59.6	56.9	54.6	59.2	58.8	61.9	61.9	60.9	59.7	59.4	62.2
2-year	33.5	34.1	37.8	37.8	37.6	42.0	36.2	41.7	42.1	44.4	47.2	46.7	45.2	41.2	46.8	47.2	49.3	47.3	47.7	45.5	44.6	
3-year	29.8	29.5	34.0	34.3	34.5	37.8	33.0	36.1	38.1	41.3	43.5	41.9	40.2	36.8	40.8	41.6	42.8	41.7	41.5	39.5		
4-year	26.7	27.3	31.7	31.8	32.3	35.7	30.8	34.0	36.3	39.4	42.0	40.1	37.7	35.1	37.7	39.7	40.8	39.8	39.1			
5-year	25.1	25.9	30.0	30.3	31.4	34.1	29.8	32.1	35.2	38.0	39.4	38.8	35.1	34.1	35.2	36.2	37.9	38.0				
6-year	23.3	24.2	28.5	29.0	30.8	33.2	28.2	31.4	33.6	36.4	38.5	37.5	34.0	32.4	34.0	34.7	36.1					
7-year	22.3	22.8	27.5	27.8	30.2	32.3	27.9	30.5	32.6	35.5	37.1	36.9	32.7	31.1	33.5	33.8						
8-year	21.3	21.7	26.1	26.9	29.8	31.1	26.7	29.5	32.1	34.7	36.3	35.9	32.0	30.6	32.2							
9-year	20.3	20.9	25.1	26.1	29.7	29.9	25.3	29.1	31.8	33.9	35.5	34.8	30.8	29.9								
10-year	19.6	19.9	24.4	25.5	28.7	29.1	24.1	28.1	31.7	33.5	34.4	33.9	30.5									
11-year	19.2	18.9	23.7	24.9	27.7	27.9	23.2	28.0	31.4	32.3	33.7	33.3										
12-year	18.7	18.4	23.0	24.2	27.5	27.2	22.8	27.2	30.4	31.4	33.2											
13-year	18.2	17.7	22.3	23.8	26.7	26.7	22.4	26.1	29.3	30.1												
14-year	17.7	17.4	21.7	23.1	26.5	26.1	22.2	25.5	28.9													
15-year	17.1	16.8	21.0	22.7	25.9	25.5	22.1	23.9														
16-year	16.7	16.3	20.7	22.3	25.7	24.9	20.7															
17-year	16.1	16.1	20.0	21.8	25.4	24.9																
18-year	15.9	15.8	19.5	21.3	25.4																	
19-year	15.6	15.1	19.0	20.9																		
20-year	15.2	14.7	18.8																			

<sup>a</sup> Based on the SEER 9 areas (San Francisco, Connecticut, Detroit, Hawaii, Iowa, New Mexico, Seattle, Utah, and Atlanta).

Table 3.12  
Cancer of the Brain and Other Nervous System (Invasive)

Risk of Being Diagnosed With Cancer in 10, 20 and 30 Years,  
Lifetime Risk of Being Diagnosed with Cancer Given Alive and Cancer-Free at Current Age, and  
Lifetime Risk of Dying from Cancer Given Alive at Current Age  
Both Sexes, 2011-2013 By Race/Ethnicity

Race/ Ethnicity	Current Age	Risk of Being Diagnosed with Cancer				Risk of Dying from Cancer	Race/ Ethnicity	Current Age	Risk of Being Diagnosed with Cancer				Risk of Dying from Cancer
		+10 yrs	+20 yrs	+30 yrs	Ever				+10 yrs	+20 yrs	+30 yrs	Ever	
All Races	0	0.04	0.06	0.08	0.62	0.46	Asian/ Pacific Islander	0	0.03	0.04	0.06	0.40	0.27
	10	0.02	0.05	0.08	0.59	0.46		10	0.02	0.03	0.06	0.38	0.26
	20	0.02	0.06	0.11	0.57	0.45		20	0.02	0.04	0.07	0.36	0.26
	30	0.03	0.08	0.16	0.55	0.45		30	0.02	0.05	0.10	0.35	0.25
	40	0.05	0.13	0.26	0.52	0.44		40	0.03	0.07	0.14	0.33	0.25
	50	0.08	0.21	0.36	0.48	0.42		50	0.04	0.11	0.19	0.30	0.23
	60	0.14	0.29	0.39	0.42	0.38		60	0.07	0.16	0.22	0.27	0.21
	70	0.18	0.29	-	0.32	0.30		70	0.09	0.16	-	0.21	0.17
80	0.15	-	-	0.19	0.19	80	0.08	-	-	0.14	0.13		
White	0	0.04	0.06	0.09	0.68	0.50	American Indian/ Alaska Native <sup>a</sup>	0	0.02	0.03	0.05	0.37	0.22
	10	0.03	0.05	0.09	0.65	0.50		10	0.01	0.02	0.05	0.35	0.21
	20	0.03	0.07	0.12	0.62	0.49		20	0.01	0.04	0.05	0.34	0.21
	30	0.04	0.09	0.18	0.60	0.49		30	0.02	0.04	0.08	0.33	0.20
	40	0.05	0.15	0.29	0.57	0.48		40	0.02	0.06	0.13	0.32	0.20
	50	0.09	0.24	0.40	0.53	0.46		50	0.04	0.12	0.27	0.31	0.19
	60	0.15	0.33	0.43	0.46	0.41		60	0.09	0.25	0.29	0.29	0.17
	70	0.20	0.32	-	0.35	0.32		70	0.18	0.23	-	0.24	0.13
80	0.16	-	-	0.20	0.20	80	0.07	-	-	0.07	0.05		
Black	0	0.03	0.05	0.06	0.35	0.24	Hispanic <sup>b</sup>	0	0.03	0.04	0.06	0.52	0.36
	10	0.02	0.03	0.05	0.33	0.24		10	0.02	0.03	0.06	0.50	0.35
	20	0.01	0.03	0.06	0.31	0.23		20	0.02	0.04	0.08	0.48	0.35
	30	0.02	0.05	0.11	0.30	0.23		30	0.02	0.06	0.12	0.47	0.35
	40	0.03	0.09	0.16	0.29	0.22		40	0.04	0.10	0.20	0.44	0.34
	50	0.06	0.13	0.20	0.26	0.21		50	0.06	0.17	0.29	0.42	0.33
	60	0.08	0.16	0.21	0.23	0.19		60	0.11	0.23	0.34	0.37	0.30
	70	0.09	0.15	-	0.17	0.16		70	0.14	0.25	-	0.29	0.25
80	0.09	-	-	0.11	0.12	80	0.14	-	-	0.19	0.17		

Devcan 6.7.4, August 2016, National Cancer Institute (<http://surveillance.cancer.gov/devcan/>).

Source: Incidence data are from the SEER 18 areas (San Francisco, Connecticut, Detroit, Hawaii, Iowa, New Mexico, Seattle, Utah, Atlanta, San Jose-Monterey, Los Angeles, Alaska Native Registry, Rural Georgia, California excluding SF/SJM/LA, Kentucky, Louisiana, New Jersey, and Georgia excluding ATL/RG). Mortality data are from the NCHS public use data file for the total US.

<sup>a</sup> Underlying incidence and mortality data for American Indian/Alaska Native are based on the CHSDA (Contract Health Service Delivery Area) counties.

<sup>b</sup> Hispanic is not mutually exclusive from whites, blacks, Asian/Pacific Islanders, and American Indians/Alaska Natives. Underlying incidence data for Hispanics are based on NHIA and exclude cases from the Alaska Native Registry.

- Statistic could not be calculated.

A percent of 0.00 represents a value that is below 0.005.

Table 3.13  
Cancer of the Brain and Other Nervous System (Invasive)

Risk of Being Diagnosed With Cancer in 10, 20 and 30 Years,  
Lifetime Risk of Being Diagnosed with Cancer Given Alive and Cancer-Free at Current Age, and  
Lifetime Risk of Dying from Cancer Given Alive at Current Age  
Males, 2011-2013 By Race/Ethnicity

Race/ Ethnicity	Current Age	Risk of Being Diagnosed with Cancer				Risk of Dying from Cancer	Race/ Ethnicity	Current Age	Risk of Being Diagnosed with Cancer				Risk of Dying from Cancer
		+10 yrs	+20 yrs	+30 yrs	Ever				+10 yrs	+20 yrs	+30 yrs	Ever	
All Races	0	0.04	0.06	0.09	0.69	0.52	Asian/ Pacific Islander	0	0.03	0.05	0.06	0.44	0.29
	10	0.03	0.05	0.09	0.67	0.51		10	0.02	0.04	0.06	0.42	0.29
	20	0.03	0.07	0.12	0.64	0.51		20	0.02	0.05	0.08	0.40	0.28
	30	0.04	0.10	0.19	0.62	0.51		30	0.03	0.07	0.12	0.38	0.28
	40	0.06	0.15	0.30	0.59	0.50		40	0.04	0.09	0.17	0.36	0.27
	50	0.10	0.25	0.42	0.55	0.48		50	0.05	0.13	0.23	0.32	0.26
	60	0.16	0.35	0.46	0.49	0.43		60	0.08	0.18	0.24	0.28	0.23
	70	0.22	0.35	-	0.38	0.34		70	0.11	0.17	-	0.22	0.18
80	0.19	-	-	0.23	0.22	80	0.08	-	-	0.14	0.13		
White	0	0.04	0.07	0.10	0.76	0.56	American Indian/ Alaska Native <sup>a</sup>	0	0.03	0.04	0.06	0.48	0.26
	10	0.03	0.06	0.10	0.73	0.56		10	0.01	0.03	0.05	0.46	0.25
	20	0.03	0.07	0.13	0.70	0.55		20	0.02	0.04	0.07	0.45	0.25
	30	0.04	0.10	0.21	0.68	0.55		30	0.02	0.06	0.11	0.44	0.24
	40	0.06	0.17	0.33	0.65	0.54		40	0.04	0.09	0.21	0.43	0.24
	50	0.11	0.28	0.47	0.61	0.52		50	0.06	0.18	0.36	0.42	0.22
	60	0.18	0.38	0.51	0.53	0.46		60	0.14	0.33	0.39	0.39	0.19
	70	0.24	0.38	-	0.41	0.36		70	0.22	0.29	-	0.30	0.15
80	0.20	-	-	0.25	0.23	80	0.10	-	-	0.11	0.06		
Black	0	0.03	0.05	0.06	0.40	0.27	Hispanic <sup>b</sup>	0	0.03	0.05	0.06	0.57	0.37
	10	0.02	0.04	0.06	0.38	0.27		10	0.02	0.04	0.06	0.55	0.37
	20	0.01	0.04	0.07	0.36	0.26		20	0.02	0.04	0.08	0.53	0.37
	30	0.03	0.06	0.13	0.36	0.26		30	0.03	0.07	0.14	0.52	0.37
	40	0.04	0.11	0.20	0.34	0.26		40	0.04	0.11	0.22	0.49	0.36
	50	0.07	0.17	0.25	0.32	0.25		50	0.07	0.19	0.33	0.46	0.35
	60	0.11	0.20	0.26	0.27	0.23		60	0.12	0.28	0.39	0.42	0.32
	70	0.11	0.19	-	0.21	0.19		70	0.17	0.30	-	0.33	0.26
80	0.12	-	-	0.16	0.14	80	0.16	-	-	0.21	0.17		

Devcan 6.7.4, August 2016, National Cancer Institute (<http://surveillance.cancer.gov/devcan/>).

Source: Incidence data are from the SEER 18 areas (San Francisco, Connecticut, Detroit, Hawaii, Iowa, New Mexico, Seattle, Utah, Atlanta, San Jose-Monterey, Los Angeles, Alaska Native Registry, Rural Georgia, California excluding SF/SJM/LA, Kentucky, Louisiana, New Jersey, and Georgia excluding ATL/RG). Mortality data are from the NCHS public use data file for the total US.

<sup>a</sup> Underlying incidence and mortality data for American Indian/Alaska Native are based on the CHSDA (Contract Health Service Delivery Area) counties.

<sup>b</sup> Hispanic is not mutually exclusive from whites, blacks, Asian/Pacific Islanders, and American Indians/Alaska Natives. Underlying incidence data for Hispanics are based on NHIA and exclude cases from the Alaska Native Registry.

- Statistic could not be calculated.

A percent of 0.00 represents a value that is below 0.005.

Table 3.14  
Cancer of the Brain and Other Nervous System (Invasive)

Risk of Being Diagnosed With Cancer in 10, 20 and 30 Years,  
Lifetime Risk of Being Diagnosed with Cancer Given Alive and Cancer-Free at Current Age, and  
Lifetime Risk of Dying from Cancer Given Alive at Current Age  
Females, 2011-2013 By Race/Ethnicity

Race/ Ethnicity	Current Age	Risk of Being Diagnosed with Cancer				Risk of Dying from Cancer	Race/ Ethnicity	Current Age	Risk of Being Diagnosed with Cancer				Risk of Dying from Cancer
		+10 yrs	+20 yrs	+30 yrs	Ever				+10 yrs	+20 yrs	+30 yrs	Ever	
All Races	0	0.03	0.06	0.08	0.54	0.41	Asian/ Pacific Islander	0	0.02	0.04	0.05	0.37	0.24
	10	0.02	0.05	0.07	0.51	0.40		10	0.02	0.03	0.05	0.35	0.24
	20	0.02	0.05	0.09	0.49	0.40		20	0.01	0.03	0.06	0.34	0.24
	30	0.03	0.07	0.14	0.47	0.40		30	0.02	0.04	0.08	0.32	0.23
	40	0.04	0.11	0.21	0.45	0.39		40	0.02	0.06	0.12	0.30	0.23
	50	0.07	0.18	0.31	0.42	0.37		50	0.04	0.10	0.17	0.28	0.22
	60	0.11	0.25	0.34	0.36	0.34		60	0.06	0.13	0.20	0.25	0.20
	70	0.15	0.24	-	0.27	0.26		70	0.07	0.14	-	0.20	0.16
80	0.13	-	-	0.16	0.17	80	0.08	-	-	0.14	0.13		
White	0	0.04	0.06	0.09	0.60	0.44	American Indian/ Alaska Native <sup>a</sup>	0	0.01	0.02	0.03	0.26	0.17
	10	0.02	0.05	0.08	0.57	0.44		10	0.01	0.02	0.04	0.25	0.17
	20	0.03	0.06	0.10	0.55	0.44		20	0.01	0.03	0.04	0.24	0.17
	30	0.03	0.08	0.15	0.52	0.43		30	0.02	0.02	0.04	0.23	0.16
	40	0.04	0.12	0.24	0.49	0.42		40	0.00	0.02	0.06	0.22	0.17
	50	0.08	0.20	0.34	0.46	0.41		50	0.02	0.06	0.19	0.22	0.16
	60	0.13	0.27	0.37	0.40	0.36		60	0.04	0.18	0.21	0.21	0.15
	70	0.16	0.27	-	0.30	0.28		70	0.15	0.19	-	0.19	0.11
80	0.14	-	-	0.17	0.17	80	0.05	-	-	0.05	0.04		
Black	0	0.04	0.05	0.07	0.31	0.21	Hispanic <sup>b</sup>	0	0.03	0.04	0.06	0.47	0.34
	10	0.02	0.03	0.05	0.28	0.21		10	0.02	0.03	0.05	0.45	0.33
	20	0.01	0.03	0.05	0.27	0.20		20	0.02	0.04	0.07	0.44	0.33
	30	0.02	0.04	0.08	0.25	0.20		30	0.02	0.05	0.10	0.42	0.33
	40	0.03	0.07	0.13	0.24	0.20		40	0.03	0.08	0.18	0.40	0.32
	50	0.04	0.10	0.17	0.22	0.19		50	0.05	0.15	0.24	0.38	0.31
	60	0.06	0.13	0.18	0.19	0.17		60	0.10	0.20	0.30	0.33	0.29
	70	0.08	0.13	-	0.15	0.14		70	0.11	0.21	-	0.25	0.23
80	0.07	-	-	0.09	0.10	80	0.13	-	-	0.18	0.17		

Devcan 6.7.4, August 2016, National Cancer Institute (<http://surveillance.cancer.gov/devcan/>).

Source: Incidence data are from the SEER 18 areas (San Francisco, Connecticut, Detroit, Hawaii, Iowa, New Mexico, Seattle, Utah, Atlanta, San Jose-Monterey, Los Angeles, Alaska Native Registry, Rural Georgia, California excluding SF/SJM/LA, Kentucky, Louisiana, New Jersey, and Georgia excluding ATL/RG). Mortality data are from the NCHS public use data file for the total US.

<sup>a</sup> Underlying incidence and mortality data for American Indian/Alaska Native are based on the CHSDA (Contract Health Service Delivery Area) counties.

<sup>b</sup> Hispanic is not mutually exclusive from whites, blacks, Asian/Pacific Islanders, and American Indians/Alaska Natives. Underlying incidence data for Hispanics are based on NHIA and exclude cases from the Alaska Native Registry.

- Statistic could not be calculated.

A percent of 0.00 represents a value that is below 0.005.

Table 3.15  
Cancer of the Brain And Other Nervous System (Invasive)

SEER Incidence and U.S. Mortality  
Age-Adjusted Rates and Trends<sup>a</sup>  
By Race/Ethnicity and Sex

SEER Incidence	SEER 18 Areas <sup>b</sup>			SEER 13 Areas <sup>b</sup>			SEER 9 Areas <sup>b</sup>		
	Rate 2009-2013			Trend 2004-2013 <sup>c</sup>			Trend 2004-2013 <sup>d</sup>		
	Rate per 100,000 persons			AAPC (%)			AAPC (%)		
RACE/ETHNICITY	Total	Males	Females	Total	Males	Females	Total	Males	Females
All Races	6.4	7.6	5.4	-0.3*	-0.4*	-0.2	-0.2*	-0.4*	-0.1
White	7.1	8.3	6.0	-0.1	-0.3*	-0.1	-0.1	-0.3*	0.0
White Hispanic <sup>e</sup>	5.2	6.0	4.5	-1.6*	-0.2	-0.9*	-	-	-
White Non-Hispanic <sup>e</sup>	7.6	9.0	6.4	0.1	-0.1	0.2*	-	-	-
Black	4.1	4.9	3.6	0.0	0.2	-0.1	0.2	0.0	0.5*
Asian/Pacific Islander	3.7	4.3	3.1	-0.2	-0.2	-0.3	-	-	-
Amer Ind/Alaska Nat <sup>f</sup>	3.2	3.9	2.5	-5.5	0.1	-	-	-	-
Hispanic <sup>e</sup>	4.9	5.7	4.3	-1.8*	-2.4*	-0.9*	-	-	-
<u>U.S. Mortality<sup>g</sup></u>									
	Rate 2009-2013			Trend 2004-2013 <sup>h</sup>					
	Rate per 100,000 persons			AAPC (%)					
RACE/ETHNICITY	Total	Males	Females	Total	Males	Females			
All Races	4.3	5.3	3.5	0.0	0.0	0.0			
White	4.7	5.7	3.8	0.1	0.1	0.1			
White Hispanic <sup>e</sup>	3.1	3.6	2.6	0.2	0.1	0.2			
White Non-Hispanic <sup>e</sup>	4.9	6.0	4.0	0.3	0.2	0.2			
Black	2.5	3.1	2.1	-0.7*	-0.5*	-0.8*			
Asian/Pacific Islander	2.0	2.4	1.7	0.2	0.5	-0.1			
Amer Ind/Alaska Nat									
Total U.S.	2.0	2.3	1.7	0.2	-0.1	0.6			
CHSDA Counties	2.4	3.0	1.8	1.2	1.6	1.0			
Non-CHSDA Counties	1.5	1.5	1.5	-1.4	-2.8	-0.1			
Hispanic <sup>e</sup>	2.9	3.4	2.4	0.0	-0.1	0.1			

The AAPC is the Average Annual Percent Change over the time interval. The AAPCs are calculated by the Joinpoint Regression Program Version 4.3.0.0, April 2016, National Cancer Institute.

- Statistic not shown. Rate based on less than 16 cases for the time interval.

Trend based on less than 10 cases for at least one year within the time interval.

a Rates are age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130). Trends are based on rates age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130).

b The SEER 9 areas are San Francisco, Connecticut, Detroit, Hawaii, Iowa, New Mexico, Seattle, Utah, and Atlanta.

The SEER 13 areas comprise the SEER 9 areas plus San Jose-Monterey, Los Angeles, the Alaska Native Registry, and Rural Georgia.

The SEER 18 areas comprise the SEER 13 areas plus California excluding SF/SJM/LA, Kentucky, Louisiana, New Jersey, and Georgia excluding ATL/RG.

c The 2004-2013 AAPC estimates are based on a Joinpoint analysis with up to 4 Joinpoints over diagnosis years 1992-2013.

d The 2004-2013 AAPC estimates are based on a Joinpoint analysis with up to 5 Joinpoints over diagnosis years 1975-2013.

e Hispanic and Non-Hispanic are not mutually exclusive from whites, blacks, Asian/Pacific Islanders, and American Indians/Alaska Natives. Incidence data for Hispanics and Non-Hispanics are based on NHIA and exclude cases from the Alaska Native Registry. The 2004-2013 Hispanic and Non-Hispanic mortality trends exclude deaths from New Hampshire and Oklahoma.

f Incidence data for American Indian/Alaska Native are based on the CHSDA (Contract Health Service Delivery Area) counties.

g US Mortality Files, National Center for Health Statistics, CDC.

h The 2004-2013 mortality AAPCs are based on a Joinpoint analysis using years of death 1992-2013.

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

Table 3.16  
Cancer of the Brain and Other Nervous System (Invasive)

Age-Adjusted SEER Incidence Rates<sup>a</sup>  
By Registry, Race and Sex

	All Races			Whites			Blacks		
	Total	Males	Females	Total	Males	Females	Total	Males	Females
<u>SEER Incidence Rates<sup>a</sup>, 2009-2013</u>									
California	6.05	7.20	5.05	6.71	7.96	5.60	4.15	5.05	3.38
Greater Bay Area	6.31	7.44	5.34	7.28	8.49	6.21	4.62	4.84	4.30
San Francisco-Oakland	6.33	7.37	5.40	7.46	8.65	6.37	4.62	4.97	4.16
San Jose-Monterey	6.30	7.61	5.22	6.99	8.28	5.93	-	-	-
Los Angeles	5.19	6.21	4.31	5.94	7.15	4.86	3.84	4.97	3.00
Greater California	6.37	7.57	5.31	6.87	8.13	5.75	4.31	5.31	3.41
Connecticut	7.08	8.44	5.90	7.49	8.95	6.21	4.10	3.94	4.00
Detroit	6.52	7.75	5.54	7.14	8.47	6.01	4.60	5.31	4.15
Georgia	6.24	7.49	5.25	7.19	8.63	5.97	4.05	4.63	3.74
Atlanta	5.96	7.25	4.92	7.33	8.82	6.03	4.13	4.90	3.66
Rural Georgia	7.73	10.01	5.99	9.82	10.57	9.51	-	-	-
Greater Georgia	6.35	7.53	5.43	7.11	8.52	5.91	3.98	4.23	3.93
Hawaii	4.18	4.88	3.49	6.49	7.00	5.79	-	-	-
Iowa	7.29	8.28	6.40	7.40	8.43	6.48	3.65	-	-
Kentucky	7.68	8.98	6.56	7.96	9.26	6.81	4.72	6.55	3.39
Louisiana	5.90	6.84	5.12	6.78	7.73	5.96	3.92	4.52	3.42
New Jersey	7.01	8.49	5.79	7.67	9.25	6.32	4.11	5.00	3.57
New Mexico	5.25	5.84	4.73	5.54	6.12	5.04	-	-	-
Seattle-Puget Sound	7.49	8.62	6.47	8.03	9.10	7.06	4.07	4.99	3.08
Utah	6.95	8.20	5.79	7.10	8.43	5.87	-	-	-
SEER 9 Areas <sup>b</sup>	6.57	7.67	5.60	7.29	8.47	6.24	4.31	4.84	3.89
SEER 13 Areas <sup>b</sup>	6.24	7.34	5.28	6.97	8.17	5.90	4.21	4.93	3.66
SEER 18 Areas <sup>b</sup>	6.41	7.58	5.40	7.07	8.33	5.96	4.15	4.88	3.61

<sup>a</sup> Rates are per 100,000 and are age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130)

<sup>b</sup> The SEER 9 areas are San Francisco, Connecticut, Detroit, Hawaii, Iowa, New Mexico, Seattle, Utah and Atlanta.

The SEER 13 areas comprise the SEER 9 areas plus San Jose-Monterey, Los Angeles, the Alaska Native Registry and Rural Georgia.

The SEER 18 areas comprise the SEER 13 areas plus California excluding SF/SJM/LA, Kentucky, Louisiana, New Jersey and Georgia excluding ATL/RG.

- Statistic not shown. Rate based on less than 16 cases for the time interval.



Table 3.17  
Cancer of the Brain and Other Nervous System (Invasive)

Age-Adjusted SEER Death Rates<sup>a</sup>  
By Registry, Race and Sex

	All Races			Whites			Blacks		
	Total	Males	Females	Total	Males	Females	Total	Males	Females
<u>SEER Death Rates<sup>a</sup>, 2009-2013</u>									
California	4.29	5.23	3.49	4.84	5.90	3.92	2.93	3.33	2.58
Greater Bay Area	4.05	4.88	3.36	4.96	5.94	4.10	2.69	2.79	2.62
San Francisco-Oakland	3.88	4.60	3.25	4.89	5.79	4.07	2.67	2.83	2.54
San Jose-Monterey	4.37	5.39	3.55	5.06	6.18	4.14	-	-	-
Los Angeles	4.01	4.88	3.27	4.69	5.71	3.79	2.83	3.12	2.60
Greater California	4.50	5.49	3.64	4.87	5.95	3.92	3.23	3.82	2.63
Connecticut	4.20	5.04	3.47	4.53	5.41	3.77	1.16	-	-
Detroit	4.42	5.42	3.61	4.88	5.99	3.96	3.06	3.66	2.63
Georgia	4.07	5.12	3.23	4.76	5.91	3.78	2.42	3.03	2.01
Atlanta	3.80	4.84	2.94	4.69	6.03	3.52	2.73	3.00	2.45
Rural Georgia	5.42	8.18	-	7.20	9.58	-	-	-	-
Greater Georgia	4.18	5.16	3.40	4.75	5.81	3.86	2.25	2.92	1.85
Hawaii	2.59	3.01	2.21	4.62	4.72	4.53	-	-	-
Iowa	5.13	6.35	4.04	5.21	6.45	4.09	-	-	-
Kentucky	4.71	5.45	4.06	4.90	5.63	4.23	2.70	3.93	1.97
Louisiana	4.28	5.26	3.46	4.81	5.91	3.85	2.96	3.49	2.59
New Jersey	3.75	4.71	2.96	4.18	5.21	3.32	2.25	3.04	1.75
New Mexico	3.55	4.08	3.06	3.72	4.26	3.23	-	-	-
Seattle-Puget Sound	4.84	5.89	3.92	5.24	6.30	4.29	2.41	3.13	-
Utah	4.34	5.27	3.51	4.47	5.42	3.61	-	-	-
SEER 9 Areas <sup>b</sup>	4.23	5.13	3.44	4.79	5.78	3.91	2.60	2.99	2.27
SEER 13 Areas <sup>b</sup>	4.20	5.12	3.41	4.79	5.81	3.89	2.65	3.07	2.32
SEER 18 Areas <sup>b</sup>	4.25	5.19	3.45	4.75	5.77	3.85	2.64	3.22	2.22
Total U.S.	4.32	5.27	3.51	4.70	5.70	3.83	2.51	3.10	2.07

<sup>a</sup> US Mortality Files, National Center for Health Statistics, Centers for Disease Control and Prevention. Rates are per 100,000 and are age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130).

<sup>b</sup> The SEER 9 areas are San Francisco, Connecticut, Detroit, Hawaii, Iowa, New Mexico, Seattle, Utah and Atlanta. The SEER 13 areas comprise the SEER 9 areas plus San Jose-Monterey, Los Angeles, the Alaska Native Registry and Rural Georgia. The SEER 18 areas comprise the SEER 13 areas plus California excluding SF/SJM/LA, Kentucky, Louisiana, New Jersey and Georgia excluding ATL/RG.

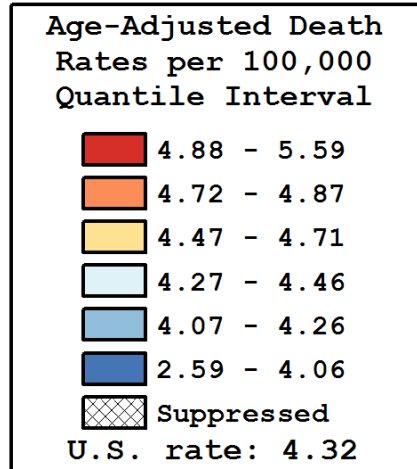
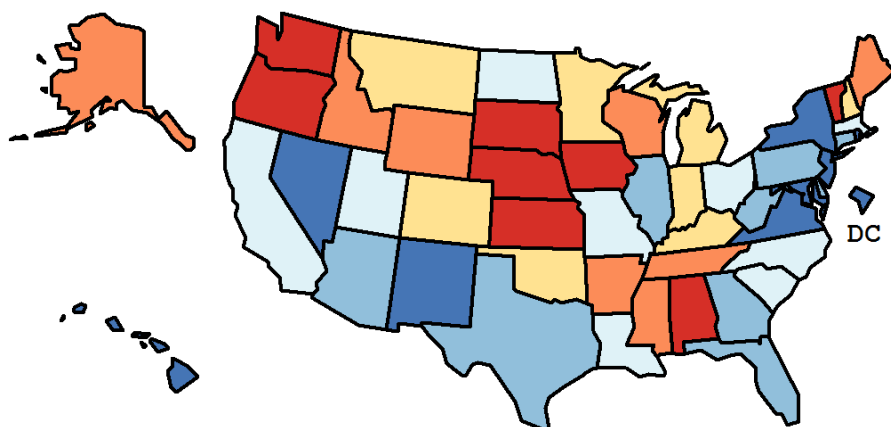
- Statistic not shown. Rate based on less than 16 cases for the time interval.

Table 3.18  
Cancer of the Brain and Other Nervous System (Invasive)  
Age-Adjusted Cancer Death<sup>a</sup> Rates By State, All Races, 2009-2013

Males and Females

State	Rate	SE	Rank(CI) <sup>d</sup>	PD
TOTAL U.S.	4.32	0.02		
High Five States				
South Dakota	5.59	0.35	01(01,21)	29.49 <sup>c</sup>
Vermont	5.38	0.39	02(01,34)	24.59 <sup>c</sup>
Kansas	5.13	0.18	03(01,20)	18.94 <sup>c</sup>
Iowa	5.13	0.17	04(01,20)	18.83 <sup>c</sup>
Oregon	5.11	0.16	05(01,19)	18.51 <sup>c</sup>
Low Five States				
New York	3.79	0.06	47(43,50)	-12.21
New Jersey	3.75	0.09	48(42,50)	-13.22
New Mexico	3.55	0.18	49(40,50)	-17.85 <sup>c</sup>
D.C.	3.28	0.34	50(26,51)	-24.05 <sup>c</sup>
Hawaii	2.59	0.18	51(50,51)	-40.09 <sup>c</sup>

State	Rate	SE	Rank(CI) <sup>d</sup>	PD	State	Rate	SE	Rank(CI) <sup>d</sup>	PD
Alabama	5.01	0.14	08(01,20)	16.00 <sup>c</sup>	Montana	4.53	0.28	21(02,48)	4.92
Alaska	4.79	0.43	14(01,49)	10.97	Nebraska	5.08	0.23	06(01,27)	17.79 <sup>c</sup>
Arizona	4.22	0.11	36(19,46)	-2.28	Nevada	4.03	0.17	44(20,50)	-6.57
Arkansas	4.87	0.17	10(02,29)	12.86	New Hampshire	4.70	0.25	18(01,45)	8.93
California	4.29	0.05	30(23,40)	-0.62	New Jersey	3.75	0.09	48(42,50)	-13.22
Colorado	4.50	0.14	23(09,41)	4.37	New Mexico	3.55	0.18	49(40,50)	-17.85 <sup>c</sup>
Connecticut	4.20	0.15	37(18,47)	-2.71	New York	3.79	0.06	47(43,50)	-12.21
Delaware	4.18	0.29	38(06,50)	-3.11	North Carolina	4.39	0.09	27(16,40)	1.66
D.C.	3.28	0.34	50(26,51)	-24.05 <sup>c</sup>	North Dakota	4.28	0.34	31(02,50)	-0.77
Florida	4.11	0.06	40(31,46)	-4.82	Ohio	4.46	0.08	25(15,35)	3.26
Georgia	4.07	0.09	42(27,47)	-5.71	Oklahoma	4.53	0.15	20(08,40)	4.99
Hawaii	2.59	0.18	51(50,51)	-40.09 <sup>c</sup>	Oregon	5.11	0.16	05(01,19)	18.51 <sup>c</sup>
Idaho	4.76	0.24	16(01,43)	10.37	Pennsylvania	4.26	0.08	34(22,44)	-1.36
Illinois	4.13	0.08	39(27,46)	-4.25	Rhode Island	4.02	0.26	45(13,50)	-6.76
Indiana	4.51	0.11	22(11,37)	4.52	South Carolina	4.32	0.13	29(15,45)	0.05
Iowa	5.13	0.17	04(01,20)	18.83 <sup>c</sup>	South Dakota	5.59	0.35	01(01,21)	29.49 <sup>c</sup>
Kansas	5.13	0.18	03(01,20)	18.94 <sup>c</sup>	Tennessee	4.86	0.12	11(03,23)	12.53
Kentucky	4.71	0.14	17(04,32)	9.06	Texas	4.07	0.06	41(32,46)	-5.59
Louisiana	4.28	0.14	33(16,46)	-0.84	Utah	4.34	0.19	28(09,47)	0.54
Maine	4.87	0.25	09(01,38)	12.95	Vermont	5.38	0.39	02(01,34)	24.59 <sup>c</sup>
Maryland	4.06	0.12	43(25,48)	-5.91	Virginia	3.97	0.10	46(32,49)	-8.02
Massachusetts	4.28	0.11	32(18,45)	-0.78	Washington	5.05	0.12	07(01,18)	17.07 <sup>c</sup>
Michigan	4.69	0.09	19(07,27)	8.74	West Virginia	4.22	0.19	35(12,49)	-2.19
Minnesota	4.49	0.13	24(10,40)	4.06	Wisconsin	4.85	0.12	12(03,24)	12.46
Mississippi	4.78	0.18	15(02,34)	10.78	Wyoming	4.80	0.41	13(01,48)	11.14
Missouri	4.45	0.12	26(13,40)	3.01					



<sup>a</sup> US Mortality Files, National Center for Health Statistics, Centers for Disease Control and Prevention. Rates are per 100,000 and are age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130).

<sup>b</sup> Difference between state rate and total U.S. rate is statistically significant ( $p < .0002$ ).

<sup>c</sup> Absolute percent difference between state rate and total U.S. rate is 15% or more.

<sup>d</sup> Rank of state level death rate and the 95% confidence intervals (low, high) for the rank.

SE Standard error of the rate.

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

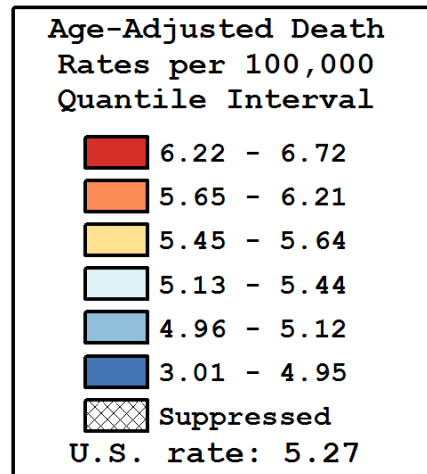
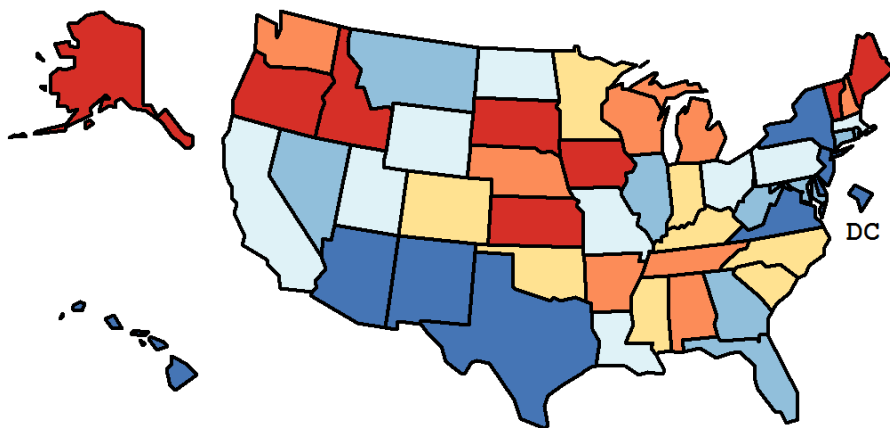
- Statistic not shown. Rate based on less than 16 cases for the time interval.

Table 3.19  
 Cancer of the Brain and Other Nervous System (Invasive)  
 Age-Adjusted Cancer Death<sup>a</sup> Rates By State, All Races, 2009-2013

Males

State	Rate	SE	Rank(CI) <sup>d</sup>	PD
TOTAL U.S.	5.27	0.03		
High Five States				
South Dakota	6.72	0.55	01(01,36)	27.52 <sup>c</sup>
Idaho	6.70	0.42	02(01,23)	27.23 <sup>c</sup>
Vermont	6.66	0.63	03(01,43)	26.50 <sup>c</sup>
Maine	6.46	0.42	04(01,32)	22.58 <sup>c</sup>
Alaska	6.44	0.76	05(01,49)	22.29 <sup>c</sup>
Low Five States				
New Jersey	4.71	0.15	47(32,50)	-10.61
New York	4.58	0.10	48(41,50)	-13.10
D.C.	4.21	0.60	49(09,51)	-20.00 <sup>c</sup>
New Mexico	4.08	0.28	50(40,51)	-22.48 <sup>c</sup>
Hawaii	3.01	0.28	51(50,51)	-42.89 <sup>c</sup>

State	Rate	SE	Rank(CI) <sup>d</sup>	PD	State	Rate	SE	Rank(CI) <sup>d</sup>	PD
Alabama	6.15	0.23	10(01,23)	16.68 <sup>c</sup>	Montana	5.05	0.43	37(05,50)	-4.06
Alaska	6.44	0.76	05(01,49)	22.29 <sup>c</sup>	Nebraska	6.21	0.38	09(01,36)	17.88 <sup>c</sup>
Arizona	4.95	0.17	43(22,49)	-6.10	Nevada	4.99	0.28	42(14,50)	-5.31
Arkansas	6.06	0.29	13(01,32)	15.07 <sup>c</sup>	New Hampshire	6.09	0.43	12(01,42)	15.64 <sup>c</sup>
California	5.23	0.08	30(22,41)	-0.77	New Jersey	4.71	0.15	47(32,50)	-10.61
Colorado	5.47	0.22	21(09,44)	3.92	New Mexico	4.08	0.28	50(40,51)	-22.48 <sup>c</sup>
Connecticut	5.04	0.24	40(15,49)	-4.24	New York	4.58	0.10	48(41,50)	-13.10
Delaware	4.84	0.47	45(06,50)	-8.10	North Carolina	5.46	0.16	22(12,40)	3.72
D.C.	4.21	0.60	49(09,51)	-20.00 <sup>c</sup>	North Dakota	5.19	0.55	32(01,50)	-1.41
Florida	5.05	0.10	38(25,45)	-4.10	Ohio	5.44	0.14	25(13,39)	3.19
Georgia	5.12	0.16	34(19,47)	-2.88	Oklahoma	5.46	0.24	23(08,45)	3.70
Hawaii	3.01	0.28	51(50,51)	-42.89 <sup>c</sup>	Oregon	6.29	0.25	08(01,22)	19.37 <sup>c</sup>
Idaho	6.70	0.42	02(01,23)	27.23 <sup>c</sup>	Pennsylvania	5.13	0.12	33(21,45)	-2.66
Illinois	5.09	0.13	36(21,46)	-3.40	Rhode Island	5.05	0.44	39(04,50)	-4.18
Indiana	5.56	0.19	20(09,39)	5.60	South Carolina	5.57	0.22	19(07,41)	5.81
Iowa	6.35	0.28	07(01,22)	20.48 <sup>c</sup>	South Dakota	6.72	0.55	01(01,36)	27.52 <sup>c</sup>
Kansas	6.39	0.30	06(01,24)	21.29 <sup>c</sup>	Tennessee	5.72	0.19	15(06,34)	8.54
Kentucky	5.45	0.23	24(09,45)	3.49	Texas	4.93	0.10	44(30,47)	-6.41
Louisiana	5.26	0.23	28(12,47)	-0.05	Utah	5.27	0.31	27(07,49)	-0.03
Maine	6.46	0.42	04(01,32)	22.58 <sup>c</sup>	Vermont	6.66	0.63	03(01,43)	26.50 <sup>c</sup>
Maryland	5.10	0.20	35(16,48)	-3.25	Virginia	4.71	0.16	46(31,50)	-10.50
Massachusetts	5.23	0.18	29(14,46)	-0.74	Washington	6.14	0.19	11(02,22)	16.61 <sup>c</sup>
Michigan	5.69	0.15	16(08,32)	7.97	West Virginia	5.00	0.31	41(12,50)	-5.12
Minnesota	5.64	0.21	17(07,38)	7.13	Wisconsin	5.82	0.20	14(04,31)	10.53
Mississippi	5.64	0.29	18(04,45)	7.07	Wyoming	5.23	0.61	31(01,50)	-0.80
Missouri	5.32	0.19	26(12,45)	1.01					



<sup>a</sup> US Mortality Files, National Center for Health Statistics, Centers for Disease Control and Prevention. Rates are per 100,000 and are age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130).

<sup>b</sup> Difference between state rate and total U.S. rate is statistically significant ( $p < .0002$ ).

<sup>c</sup> Absolute percent difference between state rate and total U.S. rate is 15% or more.

<sup>d</sup> Rank of state level death rate and the 95% confidence intervals (low, high) for the rank.

SE Standard error of the rate.

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

- Statistic not shown. Rate based on less than 16 cases for the time interval.

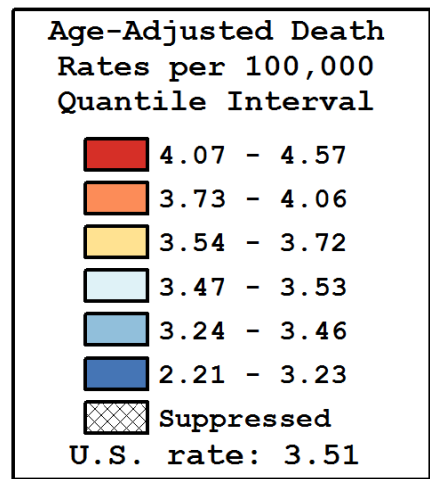
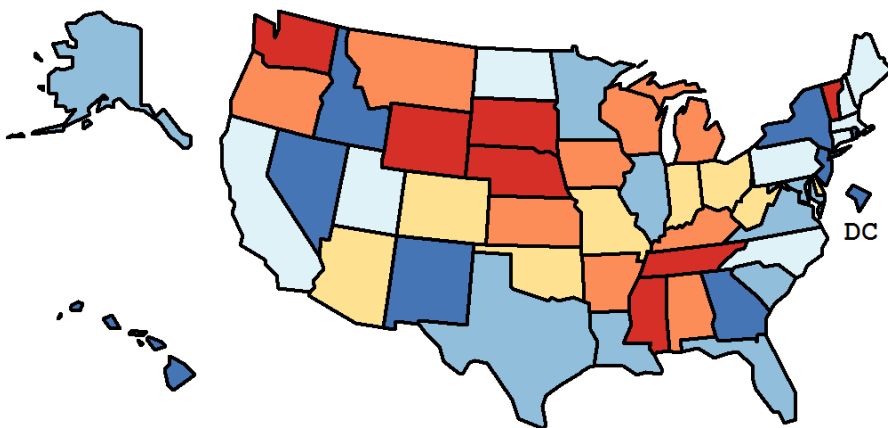
Table 3.20  
Cancer of the Brain and Other Nervous System (Invasive)

Age-Adjusted Cancer Death<sup>a</sup> Rates By State, All Races, 2009-2013

Females

State	Rate	SE	Rank(CI) <sup>d</sup>	PD
TOTAL U.S.	3.51	0.02		
High Five States				
South Dakota	4.57	0.45	01(01,37)	30.13 <sup>c</sup>
Wyoming	4.39	0.54	02(01,48)	25.20 <sup>c</sup>
Vermont	4.22	0.47	03(01,48)	20.41 <sup>c</sup>
Mississippi	4.15	0.22	04(01,28)	18.24 <sup>c</sup>
Tennessee	4.11	0.15	05(01,22)	17.22 <sup>c</sup>
Low Five States				
New Mexico	3.06	0.23	47(17,51)	-12.75
Idaho	2.97	0.26	48(18,51)	-15.31 <sup>c</sup>
New Jersey	2.96	0.11	49(38,50)	-15.59 <sup>c</sup>
D.C.	2.63	0.40	50(12,51)	-25.14 <sup>c</sup>
Hawaii	2.21	0.24	51(47,51)	-37.11 <sup>c</sup>

State	Rate	SE	Rank(CI) <sup>d</sup>	PD	State	Rate	SE	Rank(CI) <sup>d</sup>	PD
Alabama	4.05	0.17	12(01,26)	15.37 <sup>c</sup>	Montana	4.02	0.37	14(01,47)	14.42
Alaska	3.36	0.49	36(01,51)	-4.19	Nebraska	4.07	0.28	07(01,40)	15.96 <sup>c</sup>
Arizona	3.57	0.14	23(10,44)	1.66	Nevada	3.16	0.21	44(16,50)	-9.83
Arkansas	3.93	0.21	15(01,38)	12.02	New Hampshire	3.51	0.30	28(02,50)	-0.07
California	3.49	0.06	32(19,40)	-0.61	New Jersey	2.96	0.11	49(38,50)	-15.59 <sup>c</sup>
Colorado	3.68	0.17	19(05,42)	4.87	New Mexico	3.06	0.23	47(17,51)	-12.75
Connecticut	3.47	0.18	33(11,48)	-1.13	New York	3.16	0.07	45(33,49)	-9.95
Delaware	3.72	0.37	17(01,50)	6.03	North Carolina	3.52	0.11	26(14,43)	0.43
D.C.	2.63	0.40	50(12,51)	-25.14 <sup>c</sup>	North Dakota	3.49	0.43	31(01,51)	-0.47
Florida	3.28	0.07	40(27,47)	-6.52	Ohio	3.60	0.10	22(12,39)	2.72
Georgia	3.23	0.11	43(24,49)	-7.91	Oklahoma	3.67	0.18	20(04,44)	4.64
Hawaii	2.21	0.24	51(47,51)	-37.11 <sup>c</sup>	Oregon	4.06	0.19	08(01,30)	15.67 <sup>c</sup>
Idaho	2.97	0.26	48(18,51)	-15.31 <sup>c</sup>	Pennsylvania	3.53	0.09	25(15,42)	0.56
Illinois	3.34	0.10	39(21,47)	-4.70	Rhode Island	3.14	0.31	46(07,51)	-10.40
Indiana	3.62	0.14	21(09,43)	3.28	South Carolina	3.25	0.15	41(17,50)	-7.39
Iowa	4.04	0.21	13(01,33)	15.23 <sup>c</sup>	South Dakota	4.57	0.45	01(01,37)	30.13 <sup>c</sup>
Kansas	4.05	0.22	11(01,36)	15.49 <sup>c</sup>	Tennessee	4.11	0.15	05(01,22)	17.22 <sup>c</sup>
Kentucky	4.06	0.18	09(01,28)	15.62 <sup>c</sup>	Texas	3.35	0.07	37(24,45)	-4.42
Louisiana	3.46	0.16	34(13,48)	-1.26	Utah	3.51	0.24	27(04,49)	-0.05
Maine	3.50	0.29	29(02,50)	-0.24	Vermont	4.22	0.47	03(01,48)	20.41 <sup>c</sup>
Maryland	3.24	0.14	42(20,49)	-7.74	Virginia	3.35	0.12	38(19,48)	-4.49
Massachusetts	3.50	0.13	30(13,46)	-0.28	Washington	4.07	0.15	06(01,23)	16.12 <sup>c</sup>
Michigan	3.85	0.12	16(04,29)	9.58	West Virginia	3.54	0.25	24(03,49)	0.82
Minnesota	3.46	0.15	35(12,47)	-1.38	Wisconsin	4.05	0.16	10(01,25)	15.54 <sup>c</sup>
Mississippi	4.15	0.22	04(01,28)	18.24 <sup>c</sup>	Wyoming	4.39	0.54	02(01,48)	25.20 <sup>c</sup>
Missouri	3.69	0.14	18(06,40)	5.14					



<sup>a</sup> US Mortality Files, National Center for Health Statistics, Centers for Disease Control and Prevention. Rates are per 100,000 and are age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130).

<sup>b</sup> Difference between state rate and total U.S. rate is statistically significant ( $p < .0002$ ).

<sup>c</sup> Absolute percent difference between state rate and total U.S. rate is 15% or more.

<sup>d</sup> Rank of state level death rate and the 95% confidence intervals (low, high) for the rank.

SE Standard error of the rate.

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

- Statistic not shown. Rate based on less than 16 cases for the time interval.

Table 3.21  
Brain and Other Nervous System (Invasive)

Estimated United States Cancer Prevalence Counts<sup>a</sup> on January 1, 2013  
By Race/Ethnicity, Sex and Years Since Diagnosis

Years Since Diagnosis		0 to <5	5 to <10	10 to <15	15 to <20	20 to <25	25 to <30	0 to <21 <sup>e</sup>	0 to <38 <sup>e</sup>	>=38 <sup>g</sup>	Complete <sup>h</sup>
<u>Race</u>	<u>Sex</u>										
All Races <sup>b</sup>	Both Sexes	46,359	26,407	21,630	16,369	12,681	8,623	119,068	140,209	12,542	152,751
	Males	24,907	14,055	10,678	8,929	6,913	4,615	63,225	74,171	5,653	79,824
	Females	21,452	12,352	10,952	7,440	5,768	4,008	55,843	66,038	6,889	72,927
White <sup>b</sup>	Both Sexes	39,980	22,783	19,086	14,228	11,101	7,740	103,303	122,191	3,207	125,398
	Males	21,552	12,361	9,483	7,819	6,030	4,058	55,233	64,997	1,817 <sup>i</sup>	66,814
	Females	18,428	10,422	9,603	6,409	5,071	3,682	48,070	57,194	1,390 <sup>i</sup>	58,584
Black <sup>b</sup>	Both Sexes	3,743	2,197	1,645	1,302	1,104	610	9,608	11,278	+	+
	Males	1,883	953	794	663	619	387	4,730	5,589	+	+
	Females	1,860	1,244	851	639	485	223	4,878	5,689	+	+
Asian/ Pacific Islander <sup>c</sup>	Both Sexes	1,542	855	568	+	+	+	3,519	+	+	+
	Males	812	396	282	+	+	+	1,761	+	+	+
	Females	730	459	286	+	+	+	1,758	+	+	+
Hispanic <sup>d</sup>	Both Sexes	4,886	3,112	2,463	+	+	+	12,273	+	+	+
	Males	2,718	1,710	1,265	+	+	+	6,579	+	+	+
	Females	2,168	1,402	1,198	+	+	+	5,694	+	+	+

Estimated prevalence percent<sup>a</sup> on January 1, 2013, of the SEER<sup>c</sup> population diagnosed in the previous 21 years  
By Age at Prevalence, Race/Ethnicity and Sex

Age at Prevalence		Age Specific (Crude)									Age-Adjusted <sup>f</sup>	
		All Ages	0-9	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80+	All Ages
<u>Race</u>	<u>Sex</u>											
All Races <sup>c</sup>	Both Sexes	0.0329%	0.0145%	0.0329%	0.0346%	0.0335%	0.0371%	0.0416%	0.0409%	0.0328%	0.0184%	0.0323%
	Males	0.0355%	0.0151%	0.0344%	0.0363%	0.0367%	0.0410%	0.0456%	0.0459%	0.0342%	0.0214%	0.0349%
	Females	0.0302%	0.0138%	0.0314%	0.0329%	0.0303%	0.0333%	0.0377%	0.0363%	0.0317%	0.0167%	0.0298%
White <sup>c</sup>	Both Sexes	0.0373%	0.0163%	0.0368%	0.0398%	0.0385%	0.0427%	0.0477%	0.0450%	0.0371%	0.0189%	0.0367%
	Males	0.0404%	0.0169%	0.0390%	0.0418%	0.0417%	0.0472%	0.0522%	0.0498%	0.0393%	0.0218%	0.0396%
	Females	0.0342%	0.0155%	0.0344%	0.0378%	0.0352%	0.0380%	0.0432%	0.0405%	0.0353%	0.0171%	0.0338%
Black <sup>c</sup>	Both Sexes	0.0210%	0.0104%	0.0243%	0.0229%	0.0221%	0.0223%	0.0227%	0.0293%	0.0131%	0.0156%	0.0207%
	Males	0.0212%	0.0105%	0.0228%	0.0245%	0.0219%	0.0227%	0.0227%	0.0321%	0.0105%	0.0178%	0.0208%
	Females	0.0209%	0.0104%	0.0258%	0.0214%	0.0222%	0.0218%	0.0228%	0.0272%	0.0149%	0.0145%	0.0206%
Asian/ Pacific Islander <sup>c</sup>	Both Sexes	0.0191%	0.0089%	0.0203%	0.0195%	0.0188%	0.0205%	0.0222%	0.0245%	0.0209%	0.0148%	0.0188%
	Males	0.0200%	0.0090%	0.0197%	0.0191%	0.0221%	0.0212%	0.0237%	0.0292%	0.0177%	0.0171%	0.0197%
	Females	0.0182%	0.0088%	0.0209%	0.0198%	0.0159%	0.0199%	0.0210%	0.0205%	0.0233%	0.0135%	0.0181%
Hispanic <sup>d</sup>	Both Sexes	0.0231%	0.0108%	0.0248%	0.0217%	0.0212%	0.0281%	0.0355%	0.0332%	0.0261%	0.0239%	0.0243%
	Males	0.0245%	0.0113%	0.0259%	0.0213%	0.0213%	0.0322%	0.0390%	0.0409%	0.0236%	0.0303%	0.0261%
	Females	0.0217%	0.0104%	0.0236%	0.0222%	0.0210%	0.0239%	0.0320%	0.0265%	0.0280%	0.0200%	0.0225%

<sup>a</sup> US 2013 cancer prevalence counts are based on 2013 cancer prevalence proportions from the SEER registries and 1/1/2013 US population estimates based on the average of 2012 and 2013 population estimates from the US Bureau of the Census. Prevalence was calculated using the First Malignant Primary Only for a person.

<sup>b c d</sup> Statistics based on (b) SEER 9 Areas (c) SEER 13 Areas excluding the Alaska Native Registry

(d) NHIA for Hispanic for SEER 13 Areas excluding the Alaska Native Registry.

<sup>e</sup> Maximum limited-duration prevalence: 38 years for 1975-2013 SEER 9 data; 21 years for 1992-2013 SEER 13 data (excluding the Alaska Native Registry) used to calculate prevalence for Hispanics and Asian Pacific Islanders.

<sup>f</sup> Percentages are age-adjusted to the 2000 US Standard Population (19 age groups - Census P25-1130) by 5-year age groups.

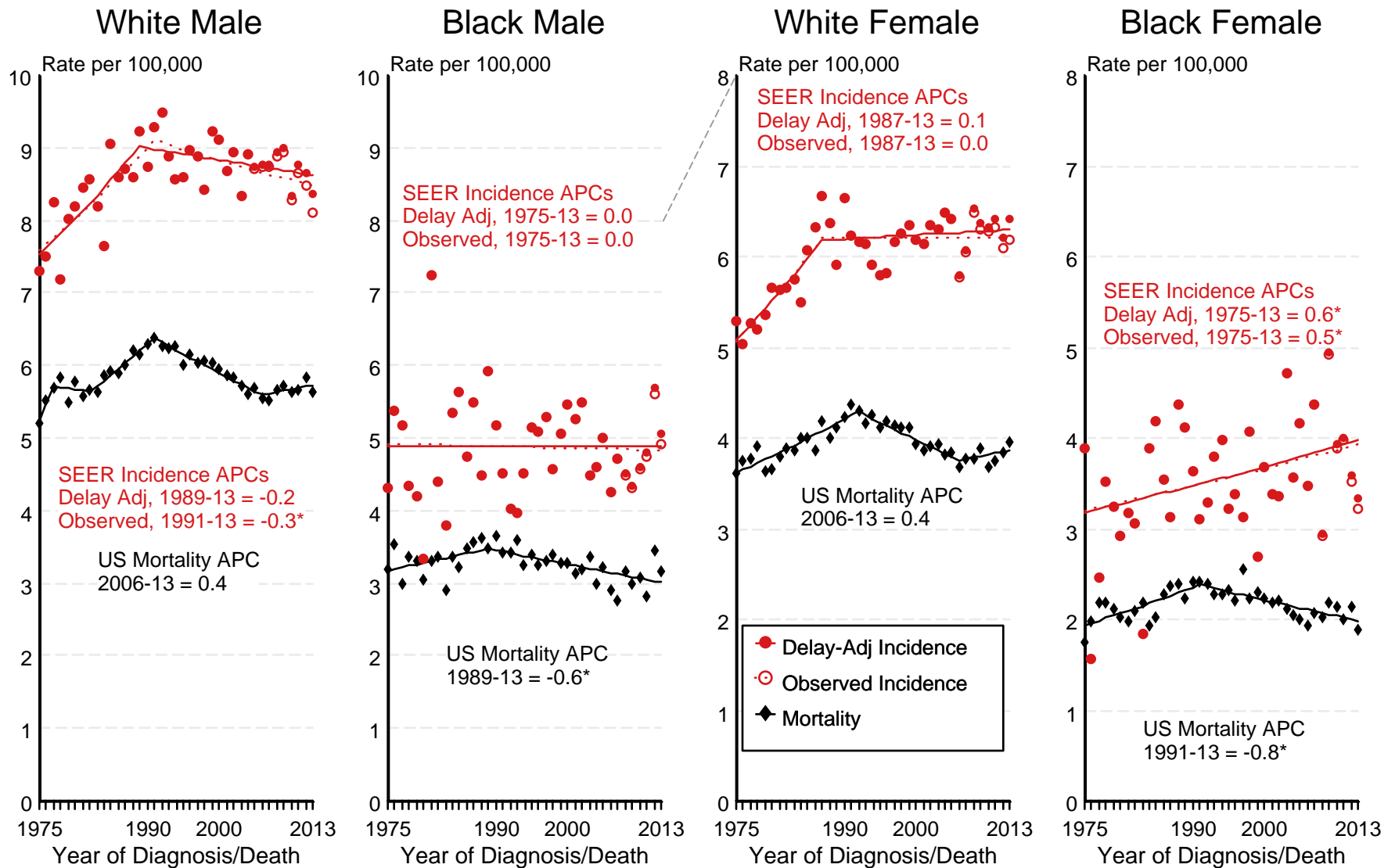
<sup>g h i</sup> (g) Cases diagnosed more than 38 years ago were estimated using the completeness index method (Capocaccia et. al. 1997, Merrill et. al. 2000). (h) Complete prevalence is obtained by summing 0 to <38 and >=38. (i) Age-specific completeness index was approximated using empirical data from historical Connecticut tumor registry.

- Statistic not shown. Statistic based on fewer than 5 cases estimated alive in SEER for the time interval.

+ Not available.

Figure 3.1

# SEER Observed Incidence, SEER Delay Adjusted Incidence and US Death Rates<sup>a</sup> Cancer of the Brain and Other Nervous System, by Race and Sex



Source: SEER 9 areas and US Mortality Files (National Center for Health Statistics, CDC).

<sup>a</sup> Rates are age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1103).

Regression lines and APCs are calculated using the Joinpoint Regression Program Version 4.3.0.0, April 2016, National Cancer Institute.

The APC is the Annual Percent Change for the regression line segments. The APC shown on the graph is for the most recent trend.

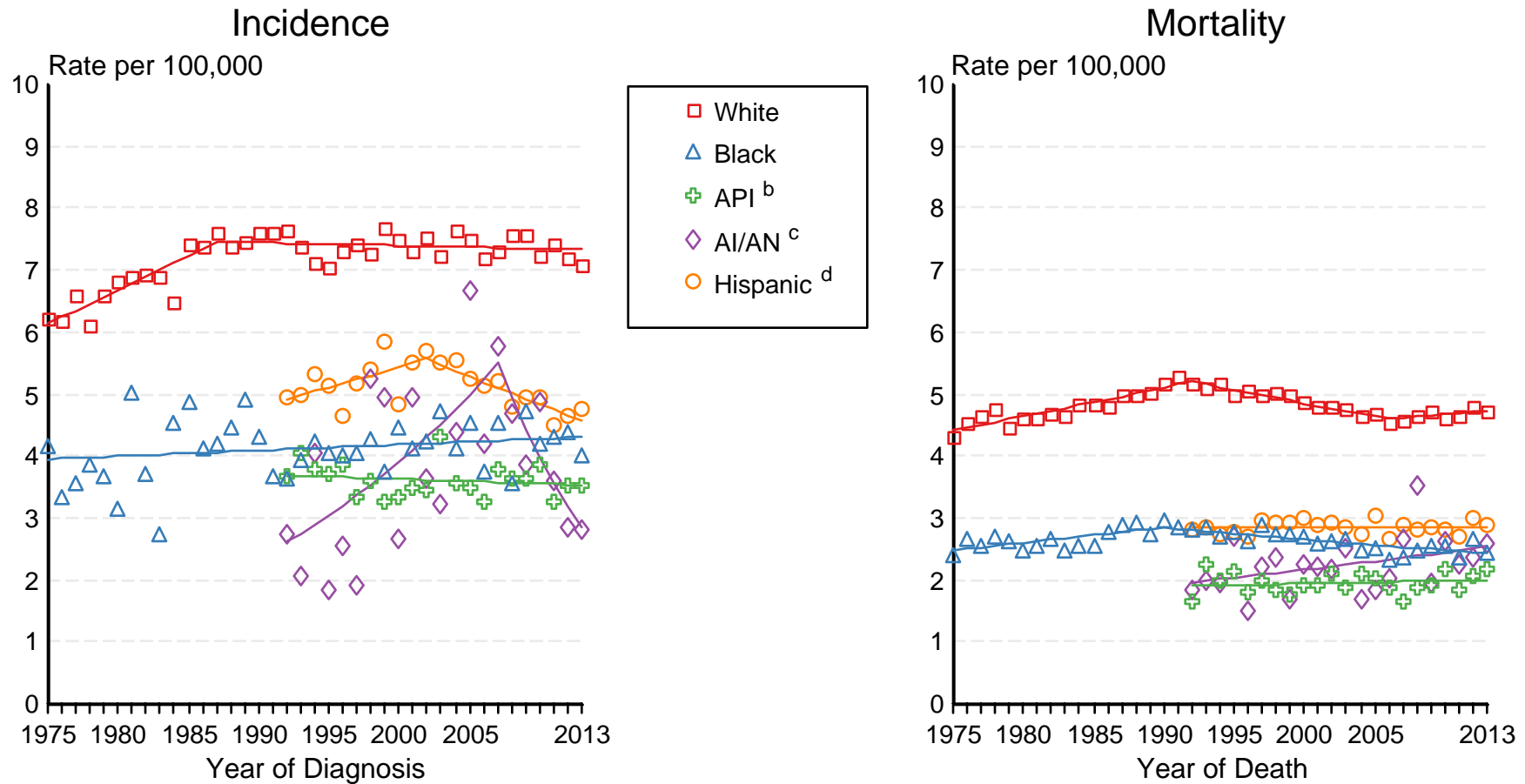
\* The APC is significantly different from zero ( $p < 0.05$ ).

Figure 3.2

# SEER Incidence and US Death Rates<sup>a</sup> Cancer of the Brain and Other Nervous System, Both Sexes

Joinpoint Analyses for Whites and Blacks from 1975-2013

and for Asian/Pacific Islanders, American Indians/Alaska Natives and Hispanics from 1992-2013

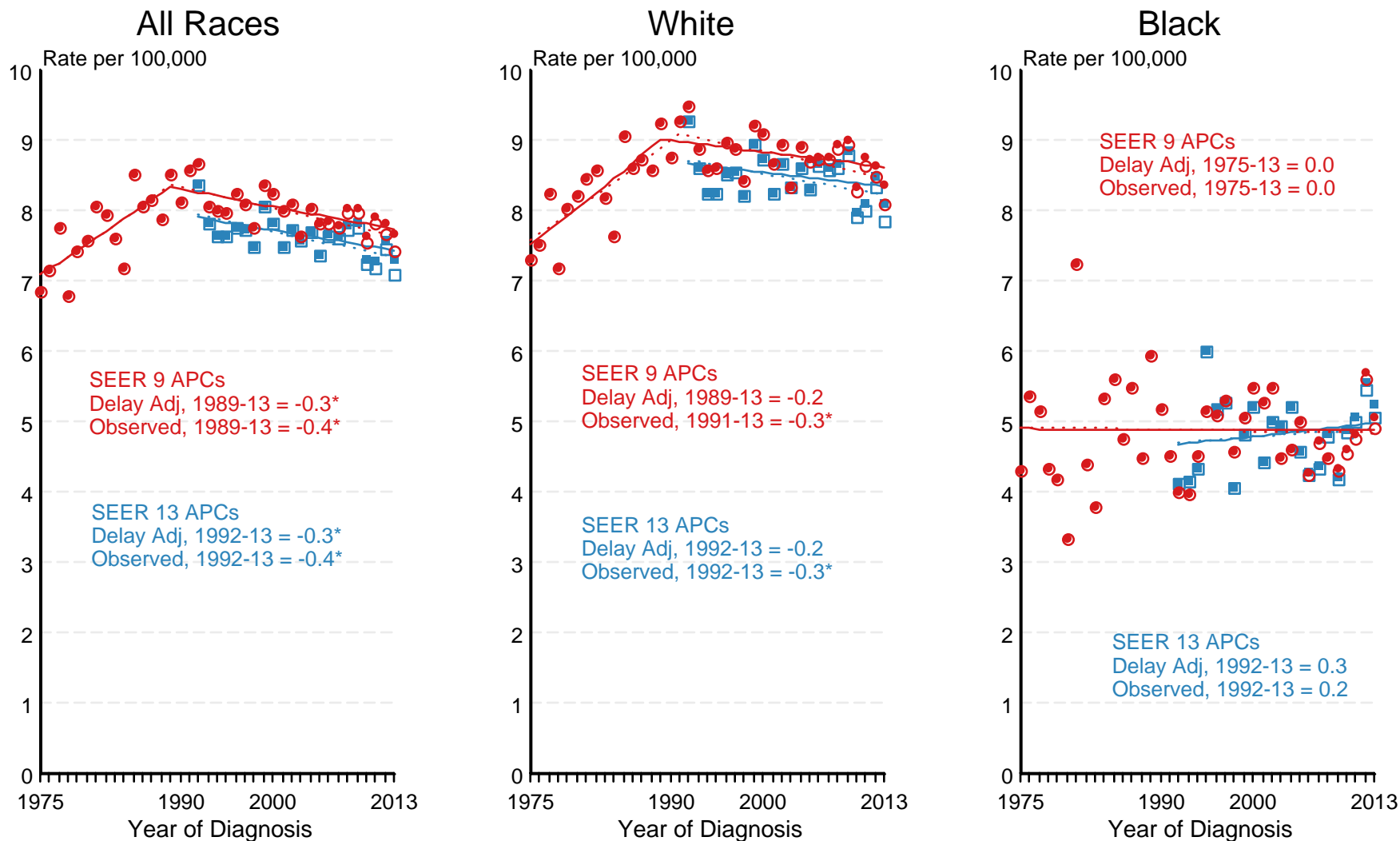


Source: Incidence data for whites and blacks are from the SEER 9 areas (San Francisco, Connecticut, Detroit, Hawaii, Iowa, New Mexico, Seattle, Utah, Atlanta). Incidence data for Asian/Pacific Islanders, American Indians/Alaska Natives and Hispanics are from the SEER 13 Areas (SEER 9 Areas, San Jose-Monterey, Los Angeles, Alaska Native Registry and Rural Georgia). Mortality data are from US Mortality Files, National Center for Health Statistics, CDC.

- <sup>a</sup> Rates are age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1103). Regression lines are calculated using the Joinpoint Regression Program Version 4.3.0.0, April 2016, National Cancer Institute. Joinpoint analyses for Whites and Blacks during the 1975-2013 period allow a maximum of 5 joinpoints. Analyses for other ethnic groups during the period 1992-2013 allow a maximum of 4 joinpoints.
- <sup>b</sup> API = Asian/Pacific Islander.
- <sup>c</sup> AI/AN = American Indian/Alaska Native. Rates for American Indian/Alaska Native are based on the CHSDA(Contract Health Service Delivery Area) counties.
- <sup>d</sup> Hispanic is not mutually exclusive from whites, blacks, Asian/Pacific Islanders, and American Indians/Alaska Natives. Incidence data for Hispanics are based on NHIA and exclude cases from the Alaska Native Registry. Mortality data for Hispanics exclude cases from New Hampshire and Oklahoma.

Figure 3.3

# SEER Observed Incidence and SEER Delay Adjusted Incidence Rates<sup>a</sup> SEER 9 Areas Compared to SEER 13 Areas Cancer of the Brain and Other Nervous System, Male, by Race



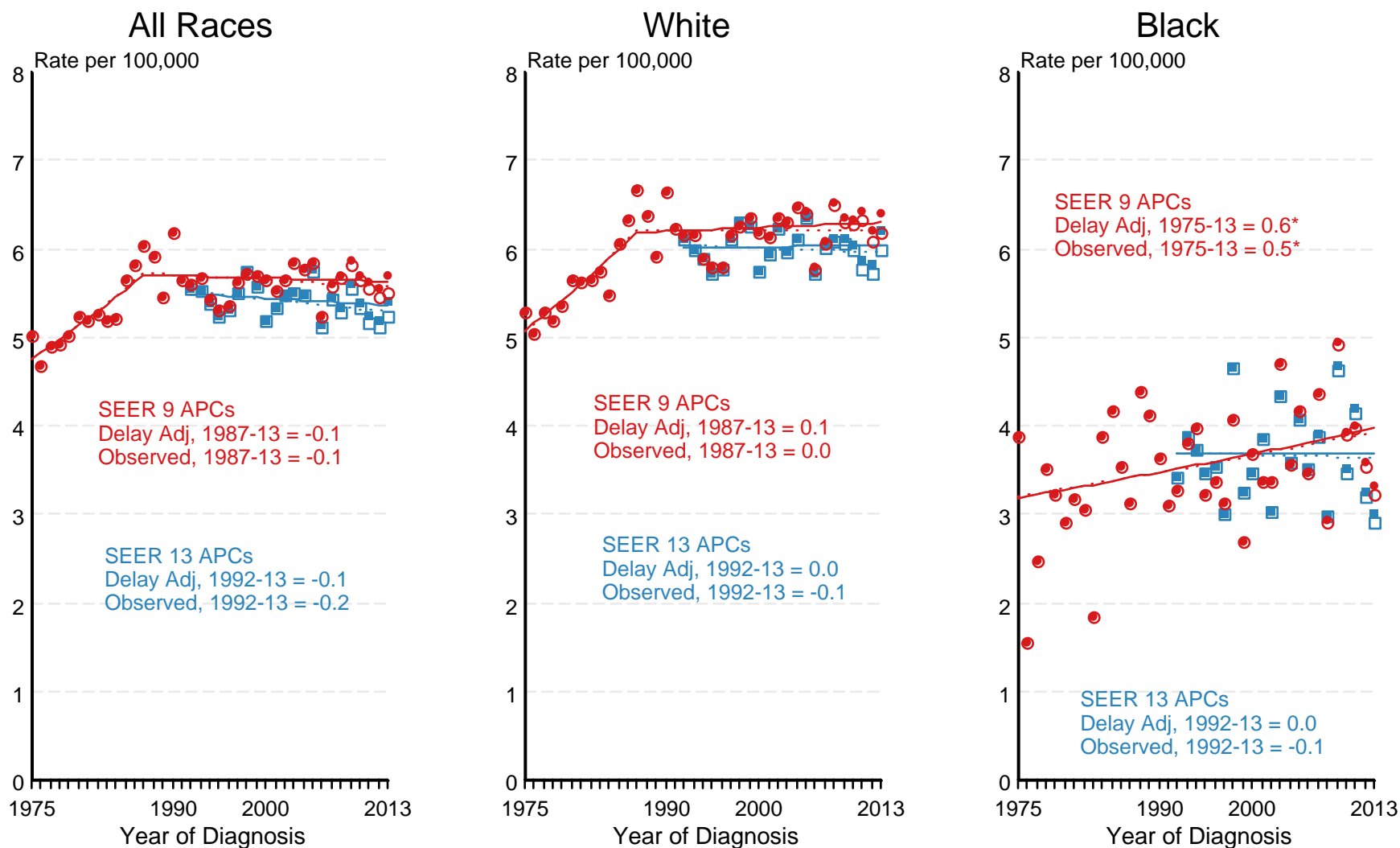
● SEER 9 Delay-Adj. Incidence   
 ○ SEER 9 Observed Incidence   
 ■ SEER 13 Delay-Adj. Incidence   
 □ SEER 13 Observed Incidence

Source: SEER 9 areas and SEER 13 areas.  
<sup>a</sup> Rates are age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1103).  
 Regression lines and APCs are calculated using the Joinpoint Regression Program Version 4.3.0.0, April 2016, National Cancer Institute.  
 The APC is the Annual Percent Change for the regression line segments. The APC shown on the graph is for the most recent trend.  
 \* The APC is significantly different from zero ( $p < 0.05$ ).



Figure 3.4

# SEER Observed Incidence and SEER Delay Adjusted Incidence Rates<sup>a</sup> SEER 9 Areas Compared to SEER 13 Areas Cancer of the Brain and Other Nervous System, Female, by Race



● SEER 9 Delay-Adj. Incidence    ○ SEER 9 Observed Incidence    ■ SEER 13 Delay-Adj. Incidence    □ SEER 13 Observed Incidence

Source: SEER 9 areas and SEER 13 areas.

<sup>a</sup> Rates are age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1103).

Regression lines and APCs are calculated using the Joinpoint Regression Program Version 4.3.0.0, April 2016, National Cancer Institute.

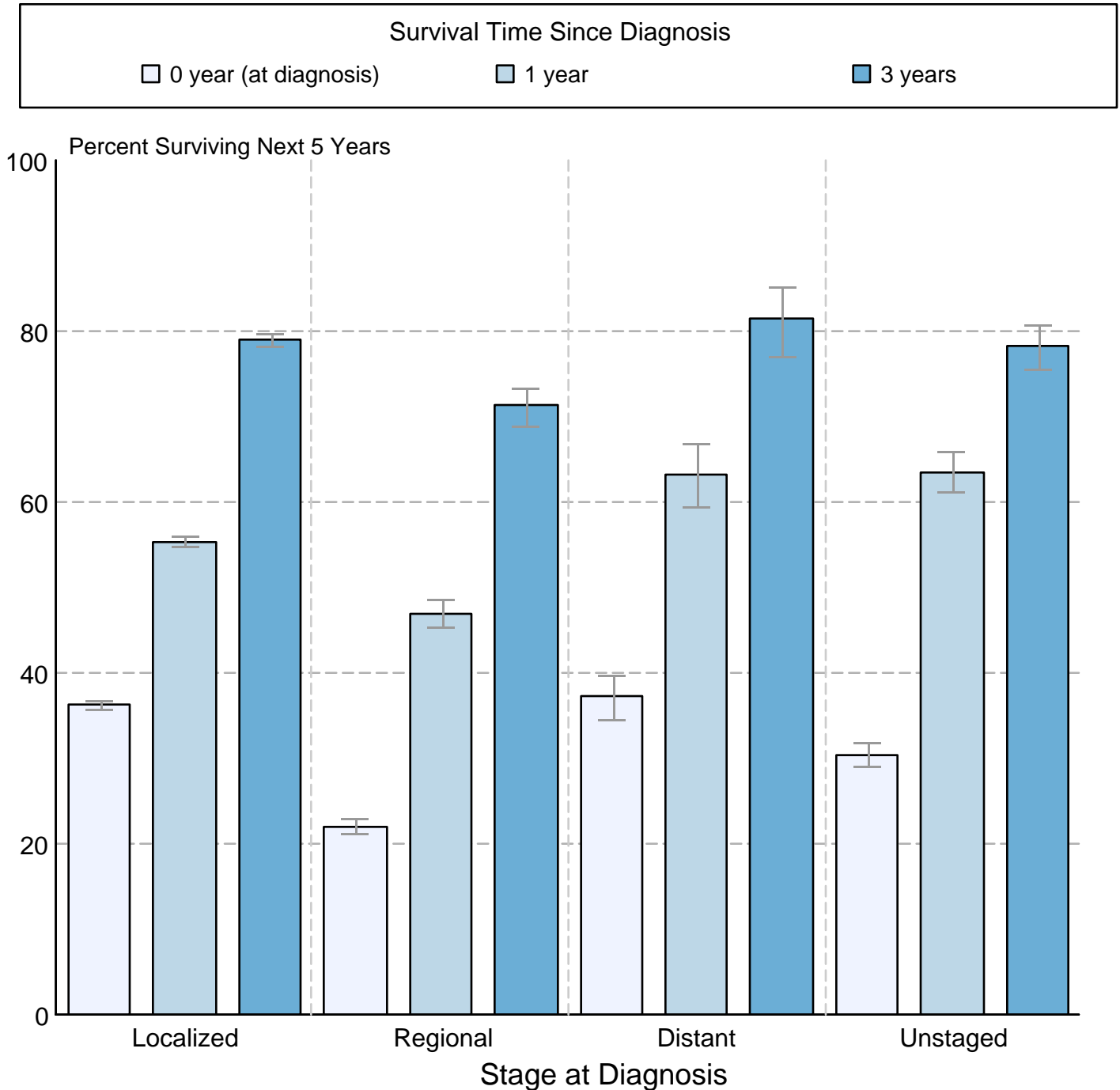
The APC is the Annual Percent Change for the regression line segments. The APC shown on the graph is for the most recent trend.

\* The APC is significantly different from zero ( $p < 0.05$ ).

Figure 3.5

## Cancer of the Brain and Other Nervous System 5-Year SEER Conditional Relative Survival and 95% Confidence Intervals

Probability of surviving the next 5 years given the cohort  
has already survived 0, 1, or 3 years  
1998-2012 by stage at diagnosis



Source: SEER 18 areas (San Francisco, Connecticut, Detroit, Hawaii, Iowa, New Mexico, Seattle, Utah, Atlanta, San Jose-Monterey, Los Angeles, Alaska Native Registry, Rural Georgia, California excluding SF/SJM/LA, Kentucky, Louisiana, New Jersey and Georgia excluding ATL/RG). California excluding SF/SJM/LA, Kentucky, Louisiana, New Jersey and Georgia excluding ATL/RG contribute cases for diagnosis years 2000 and later. The remaining 13 SEER Areas contribute cases for the entire time period.

Percent surviving is not shown if based on less than 25 cases.

Confidence intervals are not shown if length of the confidence interval is greater than 5 times the standard error.