

Table 13.1  
LeukemiaTrends in SEER Incidence<sup>ab</sup> and U.S. Mortality<sup>c</sup> Using the Joinpoint Regression Program,  
1975-2016 With up to Five Joinpoints, 2000-2016 With up to Three 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	2007-16	2012-16
<u>SEER 9 Delay-Adjusted Incidence<sup>a</sup>, 1975-2016</u>														
All Races	1975-98	0.2	1998-16	0.8*									0.8*	0.8*
White	1975-98	0.3*	1998-16	1.0*									1.0*	1.0*
Black	1975-16	0.3*											0.3*	0.3*
<u>SEER 21 Delay-Adjusted Incidence<sup>b</sup>, 2000-2016</u>														
All Races	2000-07	0.1	2007-11	2.7*	2011-16	0.0							1.2*	0.0
White	2000-08	0.5	2008-11	3.3	2011-16	0.0							1.2	0.0
White NH <sup>ef</sup>	2000-08	0.5	2008-11	3.7	2011-16	0.1							1.3	0.1
Black	2000-07	-1.0	2007-16	2.2*									2.2*	2.2*
Black NH <sup>ef</sup>	2000-07	-1.0	2007-16	2.2*									2.2*	2.2*
API <sup>e</sup>	2000-16	0.7*											0.7*	0.7*
AI/AN <sup>eg</sup>	2000-16	1.9*											1.9*	1.9*
Hispanic <sup>f</sup>	2000-16	0.7*											0.7*	0.7*
<u>U.S. Cancer Mortality<sup>c</sup>, 1975-2016</u>														
All Races	1975-80	0.6	1980-88	-0.6*	1988-91	0.7	1991-01	-0.6*	2001-13	-1.0*	2013-16	-2.7*	-1.6*	-2.3*
White	1975-00	-0.3*	2000-13	-0.9*	2013-16	-2.6*							-1.4*	-2.2*
Black	1975-93	0.5*	1993-16	-1.4*									-1.4*	-1.4*
<u>U.S. Cancer Mortality<sup>c</sup>, 2000-2016</u>														
All Races	2000-13	-1.0*	2013-16	-2.7*									-1.6*	-2.3*
White	2000-13	-0.9*	2013-16	-2.6*									-1.4*	-2.2*
White NH <sup>ef</sup>	2000-13	-0.8*	2013-16	-2.5*									-1.4*	-2.1*
Black	2000-16	-1.5*											-1.5*	-1.5*
Black NH <sup>ef</sup>	2000-16	-1.5*											-1.5*	-1.5*
API <sup>e</sup>	2000-12	0.2	2012-16	-4.2*									-1.8*	-4.2*
AI/AN <sup>eg</sup>	2000-16	-1.6*											-1.6*	-1.6*
Hispanic <sup>f</sup>	2000-16	-0.8*											-0.8*	-0.8*

Joinpoint Regression Program Version 4.7, February 2019, National Cancer Institute. (<https://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).

<sup>a</sup> Trends are from the SEER 9 areas (San Francisco, Connecticut, Detroit, Hawaii, Iowa, New Mexico, Seattle, Utah, and Atlanta).<sup>b</sup> Trends are from the SEER 21 areas (SEER 9 areas, Los Angeles, Alaska Native Registry, Rural Georgia, California excluding SF/SJM/LA, Kentucky, Louisiana, New Jersey, Georgia excluding ATL/RG, Idaho, New York and Massachusetts).<sup>c</sup> Trends are from US Mortality Files, National Center for Health Statistics, Centers for Disease Control and Prevention.<sup>d</sup> The AAPC is the Average Annual Percent Change and is based on the APCs calculated by Joinpoint.<sup>e</sup> API - Asian/Pacific Islander, AI/AN - American Indian/Alaska Native, NH - Non-Hispanic<sup>f</sup> 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.<sup>g</sup> Data for American Indian/Alaska Native are based on the Purchased/Referred Care Delivery Area (PRCDA) counties.

\* The APC/AAPC is significantly different from zero (p&lt;.05).

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

Table 13.2  
LeukemiaTrends in SEER Incidence<sup>ab</sup> and U.S. Mortality<sup>c</sup> Using the Joinpoint Regression Program,  
1975-2016 With up to Five Joinpoints, 2000-2016 With up to Three 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	2007-16	2012-16
<u>SEER 9 Delay-Adjusted Incidence<sup>a</sup>, 1975-2016</u>														
All Races	1975-98	0.0	1998-16	0.7*									0.7*	0.7*
White	1975-98	0.1	1998-16	0.8*									0.8*	0.8*
Black	1975-16	0.2											0.2	0.2
<u>SEER 21 Delay-Adjusted Incidence<sup>b</sup>, 2000-2016</u>														
All Races	2000-07	0.0	2007-11	2.6*	2011-16	0.0							1.2*	0.0
White	2000-06	0.1	2006-13	1.9*	2013-16	-0.7							1.0*	-0.1
White NH <sup>ef</sup>	2000-08	0.4	2008-11	3.6	2011-16	0.2							1.3	0.2
Black	2000-16	0.8*											0.8*	0.8*
Black NH <sup>ef</sup>	2000-16	0.9*											0.9*	0.9*
API <sup>e</sup>	2000-16	0.6											0.6	0.6
AI/AN <sup>eg</sup>	2000-16	3.2*											3.2*	3.2*
Hispanic <sup>f</sup>	2000-16	0.5*											0.5*	0.5*
<u>U.S. Cancer Mortality<sup>c</sup>, 1975-2016</u>														
All Races	1975-96	-0.2*	1996-13	-0.8*	2013-16	-3.3*							-1.7*	-2.7*
White	1975-00	-0.3*	2000-13	-0.8*	2013-16	-3.0*							-1.6*	-2.4*
Black	1975-93	0.8*	1993-16	-1.5*									-1.5*	-1.5*
<u>U.S. Cancer Mortality<sup>c</sup>, 2000-2016</u>														
All Races	2000-13	-1.0*	2013-16	-3.2*									-1.7*	-2.6*
White	2000-13	-0.9*	2013-16	-3.0*									-1.6*	-2.4*
White NH <sup>ef</sup>	2000-13	-0.8*	2013-16	-3.0*									-1.5*	-2.4*
Black	2000-16	-1.7*											-1.7*	-1.7*
Black NH <sup>ef</sup>	2000-16	-1.6*											-1.6*	-1.6*
API <sup>e</sup>	2000-16	-0.7											-0.7	-0.7
AI/AN <sup>eg</sup>	2000-16	-0.5											-0.5	-0.5
Hispanic <sup>f</sup>	2000-16	-0.9*											-0.9*	-0.9*

Joinpoint Regression Program Version 4.7, February 2019, National Cancer Institute. (<https://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).

<sup>a</sup> Trends are from the SEER 9 areas (San Francisco, Connecticut, Detroit, Hawaii, Iowa, New Mexico, Seattle, Utah, and Atlanta).<sup>b</sup> Trends are from the SEER 21 areas (SEER 9 areas, Los Angeles, Alaska Native Registry, Rural Georgia, California excluding SF/SJM/LA, Kentucky, Louisiana, New Jersey, Georgia excluding ATL/RG, Idaho, New York and Massachusetts).<sup>c</sup> Trends are from US Mortality Files, National Center for Health Statistics, Centers for Disease Control and Prevention.<sup>d</sup> The AAPC is the Average Annual Percent Change and is based on the APCs calculated by Joinpoint.<sup>e</sup> API - Asian/Pacific Islander, AI/AN - American Indian/Alaska Native, NH - Non-Hispanic<sup>f</sup> 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.<sup>g</sup> Data for American Indian/Alaska Native are based on the Purchased/Referred Care Delivery Area (PRCDA) counties.

\* The APC/AAPC is significantly different from zero (p&lt;.05).

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

Table 13.3  
LeukemiaTrends in SEER Incidence<sup>ab</sup> and U.S. Mortality<sup>c</sup> Using the Joinpoint Regression Program,  
1975-2016 With up to Five Joinpoints, 2000-2016 With up to Three 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	2007-16	2012-16
<u>SEER 9 Delay-Adjusted Incidence<sup>a</sup>, 1975-2016</u>														
All Races	1975-98	0.2	1998-16	0.8*									0.8*	0.8*
White	1975-16	0.6*											0.6*	0.6*
Black	1975-16	0.3*											0.3*	0.3*
<u>SEER 21 Delay-Adjusted Incidence<sup>b</sup>, 2000-2016</u>														
All Races	2000-05	-0.2	2005-14	1.6*	2014-16	-2.9							0.6	-0.7
White	2000-16	1.0*											1.0*	1.0*
White NH <sup>ef</sup>	2000-16	1.1*											1.1*	1.1*
Black	2000-06	-1.7*	2006-16	2.2*									2.2*	2.2*
Black NH <sup>ef</sup>	2000-06	-1.8*	2006-16	2.3*									2.3*	2.3*
API <sup>e</sup>	2000-16	0.8*											0.8*	0.8*
AI/AN <sup>eg</sup>	2000-16	0.8											0.8	0.8
Hispanic <sup>f</sup>	2000-16	0.8*											0.8*	0.8*
<u>U.S. Cancer Mortality<sup>c</sup>, 1975-2016</u>														
All Races	1975-80	0.7	1980-00	-0.4*	2000-16	-1.3*							-1.3*	-1.3*
White	1975-00	-0.3*	2000-16	-1.2*									-1.2*	-1.2*
Black	1975-93	0.4*	1993-16	-1.3*									-1.3*	-1.3*
<u>U.S. Cancer Mortality<sup>c</sup>, 2000-2016</u>														
All Races	2000-16	-1.3*											-1.3*	-1.3*
White	2000-16	-1.2*											-1.2*	-1.2*
White NH <sup>ef</sup>	2000-16	-1.2*											-1.2*	-1.2*
Black	2000-16	-1.5*											-1.5*	-1.5*
Black NH <sup>ef</sup>	2000-16	-1.4*											-1.4*	-1.4*
API <sup>e</sup>	2000-11	0.8	2011-16	-4.7*									-2.3*	-4.7*
AI/AN <sup>eg</sup>	2000-16	-2.8*											-2.8*	-2.8*
Hispanic <sup>f</sup>	2000-16	-0.7*											-0.7*	-0.7*

Joinpoint Regression Program Version 4.7, February 2019, National Cancer Institute. (<https://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).

<sup>a</sup> Trends are from the SEER 9 areas (San Francisco, Connecticut, Detroit, Hawaii, Iowa, New Mexico, Seattle, Utah, and Atlanta).<sup>b</sup> Trends are from the SEER 21 areas (SEER 9 areas, Los Angeles, Alaska Native Registry, Rural Georgia, California excluding SF/SJM/LA, Kentucky, Louisiana, New Jersey, Georgia excluding ATL/RG, Idaho, New York and Massachusetts).<sup>c</sup> Trends are from US Mortality Files, National Center for Health Statistics, Centers for Disease Control and Prevention.<sup>d</sup> The AAPC is the Average Annual Percent Change and is based on the APCs calculated by Joinpoint.<sup>e</sup> API - Asian/Pacific Islander, AI/AN - American Indian/Alaska Native, NH - Non-Hispanic<sup>f</sup> 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.<sup>g</sup> Data for American Indian/Alaska Native are based on the Purchased/Referred Care Delivery Area (PRCDA) counties.

\* The APC/AAPC is significantly different from zero (p&lt;.05).

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

Table 13.4  
LeukemiaDelay-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
1975-1979	12.89	17.14	9.97	13.34	17.89	10.24	10.52	13.76	8.30
1980	12.93	17.38	9.85	13.29	17.92	10.12	12.18	16.11	9.47
1981	12.38	16.47	9.65	12.65	17.03	9.82	12.27	14.47	10.37
1982	13.15	18.23	9.71	13.50	18.77	9.95	10.75	15.16	7.91
1983	13.14	17.80	9.91	13.48	18.42	10.07	12.48	15.95	10.06
1984	13.00	17.11	10.12	13.46	17.97	10.35	10.68	11.87	9.61
1985	13.39	17.78	10.39	13.76	18.32	10.66	12.32	17.03	9.30
1986	12.84	17.54	9.51	13.39	18.39	9.92	10.23	13.20	8.09
1987	13.37	17.77	10.33	13.82	18.48	10.64	12.57	17.60	9.26
1988	12.99	17.52	9.73	13.44	18.30	10.03	11.55	14.03	9.42
1989	13.48	17.70	10.49	14.02	18.36	11.02	11.26	15.80	8.11
1990	12.93	17.36	9.81	13.56	18.30	10.28	11.34	14.78	8.89
1991	13.08	16.82	10.25	13.71	17.78	10.60	10.81	12.09	9.98
1992	13.07	17.56	9.82	13.66	18.72	10.04	10.68	13.91	8.42
1993	13.09	17.11	10.08	13.67	18.04	10.37	11.68	15.29	9.14
1994	13.12	17.05	10.23	13.82	17.98	10.77	9.86	12.71	7.78
1995	13.64	17.80	10.54	14.53	18.93	11.27	9.97	13.69	7.42
1996	13.20	17.05	10.45	13.80	17.86	10.90	10.77	14.00	8.73
1997	13.26	17.70	10.04	14.10	18.80	10.68	10.67	14.23	8.29
1998	13.28	17.26	10.33	14.09	18.19	11.04	10.02	14.44	7.27
1999	12.89	17.22	9.68	13.53	18.03	10.17	10.62	14.23	8.27
2000	13.82	17.95	10.72	14.52	18.89	11.24	11.93	14.05	10.34
2001	14.49	18.86	11.19	15.45	19.99	12.01	12.00	14.60	10.20
2002	13.70	18.12	10.36	14.78	19.50	11.19	9.14	12.07	7.09
2003	13.79	18.06	10.54	14.61	19.25	11.07	11.58	15.09	9.06
2004	14.07	18.30	10.85	14.81	19.20	11.39	13.06	17.84	10.04
2005	13.99	18.32	10.66	14.91	19.77	11.11	11.55	13.10	10.41
2006	14.08	17.60	11.44	15.12	18.71	12.43	11.31	15.40	8.48
2007	13.64	17.88	10.43	14.73	19.24	11.23	10.03	13.77	7.75
2008	14.30	18.68	10.85	15.26	19.92	11.54	11.12	15.16	8.18
2009	14.03	18.10	10.87	14.97	19.36	11.46	11.51	15.63	8.78
2010	14.93	19.55	11.42	16.08	20.99	12.25	11.27	15.01	9.02
2011	15.25	19.56	11.79	16.28	20.83	12.57	13.03	15.45	11.08
2012	15.10	19.07	11.97	16.25	20.37	12.92	12.38	15.82	10.08
2013	15.12	19.48	11.65	16.39	20.93	12.73	12.23	16.28	9.22
2014	15.33	20.00	11.63	16.55	21.38	12.61	12.00	15.15	9.81
2015	14.97	19.07	11.60	16.30	20.81	12.46	11.50	13.45	10.28
2016	15.25	19.86	11.47	16.61	21.57	12.41	13.12	16.89	10.50

Reference: [Cancer Incidence Rates Adjusted for Reporting Delay](#).Individual rates for diagnosis years 1975-1979 available in web browser version of [Cancer Statistics Review](#).

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.

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Table 13.5  
LeukemiaAge-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
1975-2016	13.54	17.75	10.41	14.25	18.74	10.91	11.20	14.46	8.95
1975-1979	12.89	17.14	9.97	13.34	17.89	10.24	10.52	13.76	8.30
1980	12.93	17.38	9.85	13.29	17.92	10.12	12.18	16.11	9.47
1981	12.38	16.47	9.65	12.65	17.03	9.82	12.27	14.47	10.37
1982	13.15	18.23	9.71	13.50	18.77	9.95	10.75	15.16	7.91
1983	13.14	17.80	9.91	13.48	18.42	10.07	12.48	15.95	10.06
1984	13.00	17.11	10.12	13.46	17.97	10.35	10.68	11.87	9.61
1985	13.39	17.78	10.39	13.76	18.32	10.66	12.32	17.03	9.30
1986	12.84	17.54	9.51	13.39	18.39	9.92	10.23	13.20	8.09
1987	13.37	17.77	10.33	13.82	18.48	10.64	12.57	17.60	9.26
1988	12.99	17.52	9.73	13.44	18.30	10.03	11.55	14.03	9.42
1989	13.48	17.70	10.49	14.02	18.36	11.02	11.26	15.80	8.11
1990	12.93	17.36	9.81	13.56	18.30	10.28	11.34	14.78	8.89
1991	13.08	16.82	10.25	13.71	17.78	10.60	10.81	12.09	9.98
1992	13.07	17.56	9.82	13.66	18.72	10.04	10.68	13.91	8.42
1993	13.09	17.11	10.08	13.67	18.04	10.37	11.68	15.29	9.14
1994	13.12	17.05	10.23	13.82	17.98	10.77	9.86	12.71	7.78
1995	13.64	17.80	10.54	14.53	18.93	11.27	9.97	13.69	7.42
1996	13.20	17.05	10.45	13.80	17.86	10.90	10.77	14.00	8.73
1997	13.26	17.70	10.04	14.10	18.80	10.68	10.67	14.23	8.29
1998	13.28	17.26	10.33	14.09	18.19	11.04	10.02	14.44	7.27
1999	12.89	17.22	9.68	13.53	18.03	10.17	10.62	14.23	8.27
2000	13.82	17.95	10.72	14.52	18.89	11.24	11.93	14.05	10.34
2001	14.49	18.86	11.19	15.45	19.99	12.01	12.00	14.60	10.20
2002	13.70	18.12	10.36	14.78	19.50	11.19	9.14	12.07	7.09
2003	13.79	18.06	10.54	14.61	19.25	11.07	11.58	15.09	9.06
2004	14.07	18.30	10.85	14.81	19.20	11.39	13.06	17.84	10.04
2005	13.99	18.32	10.66	14.91	19.77	11.11	11.55	13.10	10.41
2006	14.08	17.60	11.44	15.12	18.71	12.43	11.31	15.40	8.48
2007	13.64	17.88	10.43	14.73	19.24	11.23	10.03	13.77	7.75
2008	14.19	18.53	10.77	15.12	19.74	11.43	11.06	15.08	8.13
2009	13.81	17.81	10.70	14.69	18.99	11.25	11.37	15.43	8.68
2010	14.58	19.07	11.16	15.63	20.40	11.91	11.07	14.73	8.87
2011	14.78	18.94	11.43	15.69	20.06	12.12	12.71	15.10	10.80
2012	14.52	18.32	11.51	15.50	19.43	12.34	12.01	15.32	9.80
2013	14.41	18.56	11.11	15.50	19.78	12.04	11.77	15.66	8.88
2014	14.42	18.79	10.96	15.42	19.91	11.76	11.36	14.32	9.30
2015	13.84	17.61	10.74	14.88	18.99	11.38	10.71	12.50	9.60
2016	13.80	17.92	10.41	14.79	19.19	11.07	11.89	15.29	9.52

<sup>a</sup> Individual rates for diagnosis years 1975-1979 available in web browser version of [Cancer Statistics Review](#).  
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 13.6  
Acute Lymphocytic Leukemia

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
1975-2016	1.39	1.59	1.20	1.47	1.68	1.26	0.86	0.98	0.76
1975-1979	1.03	1.22	0.86	1.08	1.29	0.90	0.54	0.59	0.49
1980	1.12	1.40	0.88	1.16	1.47	0.90	0.73	-	-
1981	1.24	1.31	1.18	1.30	1.39	1.23	0.95	-	-
1982	1.23	1.50	0.99	1.30	1.56	1.05	-	-	-
1983	1.29	1.52	1.08	1.39	1.64	1.18	0.80	-	-
1984	1.32	1.48	1.20	1.34	1.49	1.24	0.92	-	-
1985	1.30	1.55	1.09	1.35	1.62	1.12	-	-	-
1986	1.30	1.67	0.96	1.38	1.82	0.96	0.77	-	-
1987	1.32	1.48	1.19	1.36	1.54	1.21	0.89	-	1.15
1988	1.40	1.79	1.07	1.44	1.84	1.12	0.98	-	-
1989	1.62	1.82	1.43	1.69	1.90	1.49	1.03	-	-
1990	1.42	1.76	1.16	1.52	1.85	1.29	0.57	-	-
1991	1.38	1.72	1.05	1.51	1.94	1.09	0.86	-	-
1992	1.35	1.59	1.14	1.40	1.73	1.09	0.91	-	-
1993	1.26	1.41	1.09	1.38	1.57	1.15	0.82	-	-
1994	1.19	1.48	0.93	1.28	1.59	1.01	0.68	-	-
1995	1.50	1.80	1.21	1.61	1.87	1.36	0.98	1.32	-
1996	1.39	1.56	1.21	1.46	1.65	1.26	0.85	-	-
1997	1.33	1.51	1.16	1.44	1.60	1.28	0.79	0.98	-
1998	1.46	1.61	1.31	1.57	1.69	1.44	0.93	1.16	-
1999	1.31	1.49	1.14	1.40	1.56	1.24	0.68	-	-
2000	1.40	1.51	1.29	1.52	1.61	1.45	0.87	-	-
2001	1.46	1.66	1.26	1.58	1.82	1.34	0.70	-	-
2002	1.50	1.79	1.20	1.65	2.00	1.29	0.62	-	-
2003	1.43	1.66	1.22	1.47	1.70	1.27	0.78	0.97	-
2004	1.55	1.71	1.39	1.67	1.96	1.38	1.12	-	1.43
2005	1.58	1.88	1.29	1.66	1.94	1.38	0.97	1.18	-
2006	1.45	1.63	1.28	1.51	1.64	1.39	0.97	1.42	-
2007	1.52	1.67	1.38	1.60	1.71	1.50	0.95	1.06	-
2008	1.50	1.86	1.15	1.68	2.03	1.32	0.91	1.32	-
2009	1.47	1.61	1.35	1.57	1.74	1.42	0.96	1.08	0.85
2010	1.46	1.55	1.36	1.58	1.64	1.51	0.97	1.10	0.85
2011	1.78	1.89	1.67	1.94	2.00	1.89	1.33	1.64	1.01
2012	1.48	1.53	1.43	1.60	1.63	1.58	1.12	1.45	0.89
2013	1.62	1.79	1.45	1.75	1.92	1.58	0.97	1.32	-
2014	1.59	1.74	1.44	1.68	1.91	1.46	0.85	-	1.06
2015	1.49	1.72	1.26	1.58	1.81	1.34	0.79	0.96	-
2016	1.69	1.88	1.49	1.71	2.00	1.41	1.04	1.18	0.92

<sup>a</sup> Individual rates for diagnosis years 1975-1979 available in web browser version of [Cancer Statistics Review](#).  
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 13.7  
Chronic Lymphocytic Leukemia

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
1975-2016	4.89	6.78	3.48	5.32	7.39	3.79	3.83	5.41	2.74
1975-1979	4.32	6.00	3.17	4.54	6.35	3.32	3.81	5.35	2.78
1980	4.52	6.31	3.33	4.70	6.55	3.46	4.51	7.06	2.89
1981	4.27	6.30	2.90	4.47	6.63	3.06	3.82	5.41	2.47
1982	4.30	6.14	3.01	4.50	6.39	3.18	3.77	6.65	-
1983	4.45	6.40	3.13	4.67	6.78	3.25	4.21	6.11	3.03
1984	4.43	6.30	3.12	4.72	6.82	3.29	3.45	4.46	2.65
1985	4.49	6.21	3.31	4.80	6.63	3.54	4.11	6.15	2.87
1986	4.50	6.33	3.24	4.87	6.85	3.54	2.79	4.18	-
1987	4.66	6.81	3.07	4.95	7.26	3.28	4.03	6.14	2.45
1988	4.55	6.46	3.15	4.77	6.88	3.27	4.43	5.32	3.53
1989	4.70	6.44	3.47	5.01	6.91	3.68	3.91	5.15	3.04
1990	4.61	6.31	3.42	4.92	6.78	3.63	4.51	6.13	3.43
1991	4.60	6.20	3.43	5.00	6.81	3.64	3.40	3.75	3.15
1992	4.62	6.74	3.17	5.06	7.43	3.43	3.21	4.96	2.08
1993	4.46	6.15	3.17	4.74	6.56	3.36	4.52	6.79	2.89
1994	4.62	6.14	3.47	5.06	6.72	3.84	3.19	4.13	2.32
1995	4.56	6.44	3.20	4.99	7.02	3.52	3.39	5.34	2.06
1996	4.74	6.37	3.56	5.18	6.90	3.94	3.52	5.36	2.26
1997	4.51	6.10	3.31	4.93	6.65	3.63	3.57	5.18	2.52
1998	4.27	5.99	3.01	4.71	6.58	3.35	2.85	3.73	2.29
1999	4.18	6.07	2.77	4.53	6.55	3.01	3.87	6.00	2.60
2000	4.70	6.60	3.25	5.20	7.34	3.54	3.44	4.50	2.72
2001	5.34	7.41	3.79	5.90	8.17	4.20	3.95	4.89	3.28
2002	5.14	7.24	3.56	5.74	8.07	3.99	3.19	4.53	2.20
2003	5.39	7.47	3.83	5.96	8.30	4.18	4.39	6.21	3.12
2004	5.60	7.68	4.02	6.11	8.19	4.50	5.01	8.16	2.89
2005	5.45	7.77	3.67	6.07	8.76	3.95	4.02	4.85	3.46
2006	5.85	7.70	4.47	6.48	8.45	5.00	4.60	6.76	3.17
2007	5.42	7.54	3.80	6.12	8.42	4.32	3.14	4.80	2.25
2008	5.57	7.49	4.09	6.21	8.24	4.63	3.86	5.83	2.41
2009	5.45	7.52	3.82	6.06	8.34	4.21	4.06	5.93	2.90
2010	5.62	7.81	3.95	6.26	8.58	4.44	3.65	5.28	2.64
2011	5.56	7.49	4.01	6.11	8.22	4.39	4.52	5.51	3.79
2012	5.31	7.11	3.87	5.93	7.83	4.37	3.72	4.93	2.93
2013	5.24	7.24	3.63	5.86	8.03	4.10	4.36	6.50	2.77
2014	5.31	7.48	3.55	5.95	8.27	4.04	3.79	6.06	2.20
2015	5.07	6.84	3.60	5.72	7.64	4.07	3.45	4.61	2.64
2016	4.76	6.56	3.27	5.37	7.36	3.68	3.81	5.09	2.89

<sup>a</sup> Individual rates for diagnosis years 1975-1979 available in web browser version of [Cancer Statistics Review](#).  
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 13.8  
Acute Myeloid Leukemia

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
1975-2016	3.66	4.55	3.04	3.73	4.64	3.09	3.24	3.86	2.84
1975-1979	3.43	4.25	2.88	3.51	4.38	2.93	2.61	2.97	2.34
1980	3.14	4.10	2.43	3.17	4.11	2.49	2.88	3.28	2.53
1981	3.17	3.99	2.65	3.21	4.11	2.68	3.15	3.22	3.02
1982	3.42	4.79	2.60	3.47	4.90	2.63	2.50	3.22	2.09
1983	3.21	4.22	2.53	3.17	4.28	2.41	2.93	3.02	2.92
1984	3.30	4.06	2.73	3.35	4.17	2.77	2.35	2.10	2.44
1985	3.33	4.15	2.87	3.25	4.02	2.84	3.78	5.06	2.99
1986	3.00	3.91	2.40	2.95	3.85	2.38	3.21	4.04	2.68
1987	3.02	3.97	2.47	3.03	4.00	2.47	3.05	4.73	2.12
1988	3.03	3.79	2.52	3.08	3.87	2.57	2.79	3.14	2.49
1989	3.20	4.01	2.62	3.30	4.04	2.79	2.22	3.79	-
1990	3.04	3.91	2.43	3.12	4.07	2.46	2.49	2.89	2.19
1991	3.33	3.93	2.88	3.38	3.90	2.98	3.34	4.53	2.59
1992	3.22	3.85	2.76	3.28	4.03	2.75	3.05	2.99	3.05
1993	3.45	4.31	2.86	3.52	4.45	2.86	2.48	2.62	2.55
1994	3.46	4.14	3.02	3.48	4.24	2.97	2.94	3.24	2.77
1995	3.66	4.17	3.31	3.81	4.32	3.45	2.62	2.62	2.73
1996	3.47	4.33	2.91	3.46	4.29	2.94	3.21	4.05	2.73
1997	3.53	4.61	2.77	3.66	4.82	2.85	3.02	3.83	2.55
1998	3.93	4.94	3.21	4.06	5.06	3.32	3.05	4.64	2.11
1999	3.73	4.51	3.18	3.85	4.63	3.30	3.03	3.45	2.76
2000	4.05	4.95	3.41	4.04	4.95	3.39	4.41	4.88	4.01
2001	4.06	4.95	3.39	4.20	5.00	3.61	3.45	4.08	3.00
2002	3.63	4.58	2.98	3.78	4.78	3.11	2.91	3.31	2.67
2003	3.60	4.49	2.96	3.67	4.60	3.02	3.33	3.52	2.96
2004	3.42	4.15	2.93	3.51	4.23	3.00	3.39	4.31	3.01
2005	3.59	4.26	3.17	3.65	4.38	3.19	3.49	3.47	3.58
2006	3.55	4.11	3.15	3.67	4.22	3.27	2.84	3.34	2.57
2007	3.55	4.38	2.98	3.66	4.48	3.09	3.38	4.45	2.72
2008	3.82	4.69	3.18	3.86	4.85	3.08	3.07	3.78	2.74
2009	3.64	4.42	3.08	3.76	4.64	3.10	3.13	3.98	2.55
2010	4.24	5.39	3.41	4.44	5.68	3.50	3.36	4.54	2.62
2011	4.21	5.14	3.47	4.25	5.18	3.49	4.22	4.52	3.99
2012	4.58	5.61	3.77	4.68	5.72	3.87	3.85	4.49	3.42
2013	4.48	5.42	3.80	4.66	5.55	4.02	4.16	5.08	3.47
2014	4.39	5.31	3.71	4.60	5.48	3.95	3.78	4.53	3.18
2015	4.26	5.18	3.58	4.42	5.39	3.67	3.72	4.15	3.51
2016	4.31	5.42	3.47	4.47	5.56	3.61	4.08	4.89	3.58

<sup>a</sup> Individual rates for diagnosis years 1975-1979 available in web browser version of [Cancer Statistics Review](#).

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 13.9  
Chronic Myeloid Leukemia

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
1975-2016	1.81	2.38	1.38	1.84	2.42	1.41	1.83	2.37	1.44
1975-1979	1.83	2.44	1.41	1.84	2.47	1.41	1.80	2.39	1.36
1980	1.70	2.06	1.46	1.73	2.10	1.51	1.48	-	-
1981	1.64	1.97	1.41	1.59	1.90	1.39	2.38	3.00	1.81
1982	1.68	2.16	1.35	1.65	2.19	1.31	1.75	-	1.79
1983	1.69	2.23	1.33	1.64	2.15	1.32	2.51	3.44	1.85
1984	1.68	2.40	1.18	1.63	2.41	1.10	2.58	2.61	2.59
1985	1.97	2.76	1.43	2.00	2.80	1.47	2.06	2.89	-
1986	1.68	2.19	1.29	1.71	2.25	1.31	1.54	-	-
1987	1.88	2.33	1.58	1.91	2.39	1.58	2.14	2.88	-
1988	1.91	2.54	1.50	1.92	2.59	1.49	2.08	2.88	-
1989	1.70	2.22	1.35	1.68	2.18	1.35	2.21	3.12	-
1990	1.76	2.47	1.24	1.75	2.50	1.20	2.63	3.66	1.95
1991	1.88	2.44	1.47	1.91	2.55	1.46	1.56	-	1.75
1992	1.76	2.16	1.47	1.80	2.22	1.49	1.49	1.73	-
1993	1.92	2.53	1.48	1.95	2.52	1.55	2.28	3.56	-
1994	1.87	2.49	1.42	1.90	2.49	1.50	1.70	2.57	-
1995	1.90	2.56	1.38	1.96	2.69	1.39	1.59	2.09	-
1996	1.81	2.45	1.35	1.80	2.51	1.28	2.06	2.54	1.83
1997	1.87	2.68	1.30	1.94	2.74	1.37	1.67	2.53	-
1998	1.66	1.95	1.43	1.73	1.98	1.54	1.61	2.31	1.20
1999	1.80	2.49	1.28	1.77	2.44	1.28	1.72	2.30	1.26
2000	1.79	2.34	1.35	1.80	2.33	1.40	1.59	1.80	1.33
2001	1.80	2.36	1.38	1.85	2.37	1.46	1.97	2.83	1.36
2002	1.64	2.09	1.30	1.67	2.12	1.34	1.13	-	-
2003	1.66	2.24	1.20	1.76	2.37	1.27	1.47	2.18	-
2004	1.81	2.56	1.22	1.87	2.66	1.25	1.51	2.06	1.11
2005	1.69	2.26	1.25	1.77	2.35	1.31	1.78	2.44	1.34
2006	1.84	2.40	1.41	1.94	2.51	1.51	1.58	2.17	1.11
2007	1.71	2.32	1.23	1.80	2.49	1.23	1.43	1.83	1.19
2008	1.85	2.39	1.43	1.86	2.32	1.51	1.89	2.67	1.21
2009	1.80	2.38	1.34	1.79	2.31	1.39	1.90	2.89	1.28
2010	1.88	2.51	1.40	1.88	2.54	1.36	1.91	2.12	1.83
2011	1.95	2.55	1.47	2.06	2.71	1.51	1.66	1.95	1.39
2012	1.93	2.33	1.61	1.97	2.38	1.65	2.12	2.81	1.62
2013	1.93	2.60	1.39	1.98	2.67	1.40	1.72	2.26	1.42
2014	1.97	2.59	1.46	1.95	2.52	1.46	2.05	1.96	2.13
2015	1.85	2.30	1.46	1.94	2.41	1.52	1.69	1.85	1.56
2016	2.04	2.65	1.56	2.16	2.72	1.71	1.98	2.88	1.40

<sup>a</sup> Individual rates for diagnosis years 1975-1979 available in web browser version of [Cancer Statistics Review](#).  
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 13.10  
LeukemiaAge-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
1975-2016	7.52	10.08	5.75	7.73	10.38	5.89	6.56	8.65	5.20
1975-1979	8.12	10.92	6.24	8.29	11.20	6.34	6.78	8.80	5.36
1980	8.36	11.21	6.46	8.54	11.51	6.56	7.05	9.09	5.67
1981	8.10	10.89	6.24	8.24	11.16	6.31	7.11	8.92	5.86
1982	8.19	11.04	6.31	8.33	11.29	6.39	7.14	9.36	5.67
1983	8.11	10.93	6.26	8.24	11.19	6.32	7.22	9.21	5.90
1984	8.08	10.68	6.37	8.23	10.91	6.47	7.08	9.16	5.69
1985	8.07	10.77	6.31	8.23	10.97	6.44	7.08	9.62	5.42
1986	7.96	10.71	6.16	8.10	10.97	6.23	7.25	9.26	5.91
1987	7.80	10.31	6.14	7.91	10.50	6.20	7.24	9.41	5.85
1988	7.83	10.60	6.00	7.95	10.79	6.08	7.24	9.83	5.58
1989	7.95	10.62	6.15	8.07	10.75	6.26	7.36	10.34	5.45
1990	7.98	10.71	6.18	8.10	10.90	6.26	7.44	9.96	5.83
1991	7.99	10.50	6.32	8.12	10.64	6.44	7.45	10.05	5.80
1992	7.96	10.71	6.13	8.11	10.94	6.24	7.16	9.41	5.68
1993	7.93	10.66	6.09	8.04	10.84	6.16	7.36	9.76	5.77
1994	7.85	10.57	6.03	8.00	10.78	6.13	7.12	9.59	5.54
1995	7.90	10.80	5.98	8.04	11.03	6.05	7.17	9.75	5.53
1996	7.84	10.53	6.05	7.97	10.71	6.13	7.46	10.09	5.90
1997	7.71	10.42	5.89	7.89	10.68	6.01	6.83	9.23	5.29
1998	7.58	10.11	5.82	7.72	10.31	5.91	7.04	9.37	5.55
1999	7.68	10.22	5.96	7.87	10.47	6.09	6.74	8.78	5.43
2000	7.69	10.28	5.91	7.89	10.54	6.05	6.71	9.07	5.27
2001	7.64	10.19	5.88	7.83	10.46	6.02	6.74	8.80	5.41
2002	7.54	10.18	5.73	7.75	10.46	5.85	6.73	8.91	5.38
2003	7.45	10.02	5.63	7.68	10.37	5.76	6.54	8.47	5.30
2004	7.29	9.81	5.52	7.47	10.04	5.64	6.77	8.94	5.39
2005	7.26	9.82	5.46	7.50	10.14	5.63	6.07	8.11	4.78
2006	7.23	9.70	5.46	7.48	9.97	5.66	6.27	8.84	4.70
2007	7.08	9.54	5.33	7.30	9.86	5.46	6.19	8.07	5.05
2008	7.09	9.54	5.33	7.32	9.83	5.49	6.27	8.65	4.78
2009	7.06	9.53	5.25	7.31	9.86	5.41	6.05	8.14	4.71
2010	6.91	9.25	5.20	7.16	9.58	5.37	5.75	7.46	4.59
2011	6.95	9.28	5.24	7.18	9.60	5.39	5.99	7.74	4.85
2012	6.83	9.21	5.07	7.08	9.57	5.22	5.77	7.56	4.62
2013	6.75	9.09	5.03	7.03	9.43	5.23	5.68	7.70	4.37
2014	6.62	8.82	4.96	6.91	9.21	5.15	5.47	7.17	4.37
2015	6.28	8.46	4.64	6.55	8.82	4.82	5.20	6.84	4.15
2016	6.27	8.28	4.75	6.53	8.64	4.91	5.43	6.87	4.49

<sup>a</sup> Individual rates for years of death 1975-1979 available in web browser version of [Cancer Statistics Review](#).  
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 13.11  
LeukemiaSEER 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, 2012-2016									
All ages	14.1	18.1	10.9	14.9	19.1	11.5	10.9	13.9	8.9
Under 65	7.1	8.3	5.8	7.4	8.7	6.1	5.8	6.6	5.1
65 and over	62.5	85.5	45.7	66.8	90.9	48.7	46.0	64.1	34.9
All ages (WHO world std) <sup>c</sup>	10.9	13.7	8.6	11.6	14.5	9.0	8.5	10.5	7.1
Age-Specific Rates, 2012-2016									
<1	4.5	4.3	4.8	4.5	4.4	4.7	3.4	-	4.4
1-4	8.9	9.1	8.7	9.7	10.1	9.4	4.6	4.3	4.9
5-9	4.3	4.7	3.8	4.7	5.3	4.1	2.2	2.0	2.4
10-14	3.3	3.8	2.8	3.4	3.8	3.0	2.6	3.1	2.0
15-19	3.1	3.8	2.4	3.3	4.1	2.5	2.0	2.5	1.5
20-24	2.9	3.2	2.5	3.0	3.5	2.5	2.4	2.2	2.6
25-29	3.0	3.4	2.6	3.0	3.4	2.6	2.6	2.8	2.4
30-34	3.7	4.2	3.2	3.7	4.3	3.2	3.3	3.3	3.3
35-39	4.5	5.1	3.9	4.6	5.2	3.9	4.5	4.8	4.2
40-44	6.1	7.1	5.1	6.3	7.3	5.3	5.8	6.9	4.9
45-49	8.4	9.7	7.1	8.6	9.9	7.3	8.5	9.6	7.4
50-54	12.7	15.6	9.9	13.3	16.4	10.3	10.4	12.3	8.7
55-59	18.2	22.3	14.3	19.2	23.4	15.1	15.0	18.3	12.2
60-64	27.1	34.6	20.2	28.5	36.5	21.0	23.0	27.9	19.0
65-69	40.4	53.3	29.0	42.9	56.4	30.6	33.0	42.8	25.6
70-74	54.9	73.5	39.4	58.4	77.7	41.9	41.6	56.3	31.2
75-79	70.6	95.4	51.3	75.7	101.5	55.2	53.5	75.5	39.3
80-84	84.3	118.0	61.1	90.2	125.6	65.3	58.5	86.9	42.8
85+	88.0	126.2	68.3	94.1	135.6	72.5	56.7	81.0	46.6
<u>U.S. Mortality</u>									
<u>Age at Death</u>									
Age-Adjusted Rates, 2012-2016									
All ages	6.5	8.8	4.9	6.8	9.1	5.1	5.5	7.2	4.4
Under 65	1.8	2.2	1.5	1.8	2.2	1.5	2.0	2.3	1.7
65 and over	39.2	54.4	28.3	41.1	57.0	29.6	29.9	41.0	23.2
All ages (WHO world std) <sup>c</sup>	3.7	4.8	2.8	3.8	4.9	2.9	3.3	4.3	2.7
Age-Specific Rates, 2012-2016									
<1	0.5	0.4	0.6	0.5	0.5	0.5	0.6	-	-
1-4	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
5-9	0.5	0.5	0.4	0.5	0.6	0.4	0.4	0.4	0.3
10-14	0.6	0.6	0.5	0.6	0.6	0.5	0.5	0.6	0.5
15-19	0.7	0.9	0.6	0.8	0.9	0.6	0.5	0.6	0.4
20-24	0.9	1.1	0.6	0.9	1.1	0.7	0.9	1.0	0.7
25-29	0.9	1.1	0.7	0.9	1.1	0.8	0.8	1.0	0.7
30-34	1.0	1.2	0.8	1.0	1.2	0.8	1.1	1.3	1.0
35-39	1.2	1.4	1.0	1.2	1.4	1.0	1.4	1.5	1.2
40-44	1.6	1.7	1.4	1.6	1.7	1.5	1.8	1.8	1.7
45-49	2.2	2.5	2.0	2.3	2.5	2.1	2.6	3.0	2.2
50-54	3.4	4.0	2.8	3.4	4.1	2.8	3.9	4.4	3.5
55-59	5.6	6.8	4.3	5.6	6.9	4.4	6.2	7.7	5.0
60-64	9.3	11.8	7.0	9.5	12.1	7.0	10.1	13.0	7.7
65-69	16.0	21.5	11.1	16.6	22.3	11.4	15.0	20.3	11.0
70-74	27.2	36.4	19.4	28.5	38.0	20.2	23.1	30.2	18.1
75-79	42.8	58.9	30.0	45.0	61.8	31.4	33.3	46.0	25.1
80-84	61.5	86.3	44.1	64.7	90.3	46.2	45.7	63.3	35.8
85+	82.7	119.2	63.8	87.5	125.9	67.2	52.5	74.6	43.3

<sup>a</sup> SEER 21 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.

<sup>c</sup> 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 world (WHO 2000-2025) standard million.

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

Table 13.12  
Lymphocytic Leukemia

SEER Incidence<sup>a</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>Acute Lymphocytic Leukemia</u>									
<u>Age at Diagnosis</u>									
Age-Adjusted Rates, 2012-2016									
All ages	1.7	1.9	1.5	1.9	2.1	1.6	1.0	1.1	0.9
Under 65	1.7	2.0	1.5	1.9	2.2	1.6	1.0	1.1	0.9
65 and over	1.6	1.8	1.3	1.7	2.0	1.4	1.0	1.2	0.9
All ages (WHO world std) <sup>b</sup>	1.9	2.1	1.6	2.0	2.3	1.8	1.0	1.1	0.9
Age-Specific Rates, 2012-2016									
<1	1.9	1.6	2.2	1.9	1.6	2.3	1.4	-	-
1-4	7.6	7.7	7.4	8.4	8.7	8.1	3.3	3.0	3.7
5-9	3.6	4.0	3.3	4.1	4.6	3.6	1.8	1.5	2.0
10-14	2.3	2.6	1.9	2.4	2.7	2.1	1.4	1.9	0.9
15-19	1.8	2.4	1.2	2.0	2.7	1.3	0.7	1.2	-
20-24	1.0	1.4	0.7	1.2	1.6	0.7	0.5	0.6	0.5
25-29	0.8	1.0	0.6	0.8	1.1	0.6	0.5	-	-
30-34	0.7	0.9	0.6	0.8	0.9	0.6	0.4	-	-
35-39	0.8	1.0	0.6	0.8	1.0	0.7	0.6	0.7	-
40-44	0.8	0.9	0.6	0.8	1.0	0.6	0.6	0.7	-
45-49	0.9	0.9	0.9	0.9	0.9	1.0	0.4	-	-
50-54	0.9	1.0	0.8	0.9	1.0	0.9	0.7	0.9	-
55-59	1.1	1.2	1.1	1.2	1.3	1.1	1.1	1.2	1.0
60-64	1.3	1.5	1.1	1.3	1.5	1.1	1.1	1.3	0.9
65-69	1.4	1.4	1.3	1.5	1.6	1.4	0.7	-	-
70-74	1.6	1.9	1.3	1.7	2.0	1.4	-	-	-
75-79	1.7	2.0	1.5	1.8	2.1	1.6	1.3	-	-
80-84	1.7	2.3	1.3	1.7	2.4	1.3	-	-	-
85+	1.5	1.9	1.3	1.6	2.0	1.4	-	-	-
<u>Chronic Lymphocytic Leukemia</u>									
<u>Age at Diagnosis</u>									
Age-Adjusted Rates, 2012-2016									
All ages	4.9	6.8	3.5	5.4	7.3	3.8	3.4	4.9	2.4
Under 65	1.7	2.2	1.2	1.8	2.4	1.3	1.2	1.6	0.8
65 and over	27.5	38.3	19.5	29.8	41.1	21.2	18.5	27.3	12.9
All ages (WHO world std) <sup>b</sup>	3.5	4.7	2.4	3.8	5.1	2.7	2.4	3.4	1.7
Age-Specific Rates, 2012-2016									
<1	-	-	-	-	-	-	-	-	-
1-4	-	-	-	-	-	-	-	-	-
5-9	-	-	-	-	-	-	-	-	-
10-14	-	-	-	-	-	-	-	-	-
15-19	-	-	-	-	-	-	-	-	-
20-24	-	-	-	-	-	-	-	-	-
25-29	0.1	0.1	-	0.1	-	-	-	-	-
30-34	0.1	0.2	-	0.1	0.2	-	-	-	-
35-39	0.4	0.4	0.3	0.4	0.5	0.4	0.4	-	-
40-44	1.0	1.2	0.8	1.0	1.3	0.8	0.8	1.2	-
45-49	2.2	2.8	1.7	2.4	3.0	1.9	1.8	2.4	1.2
50-54	4.8	6.5	3.2	5.3	7.0	3.6	3.2	4.6	2.0
55-59	8.0	10.3	5.8	8.8	11.3	6.4	5.1	6.6	3.7
60-64	12.5	17.0	8.4	13.4	18.0	9.0	9.4	12.9	6.6
65-69	18.9	25.8	12.9	20.4	27.4	14.0	13.5	18.8	9.5
70-74	24.5	33.8	16.7	26.5	36.1	18.2	17.6	26.3	11.6
75-79	30.6	42.3	21.6	33.3	45.5	23.6	21.3	32.1	14.5
80-84	35.4	50.2	25.2	38.5	54.1	27.5	22.2	36.0	14.6
85+	37.9	54.3	29.4	41.3	59.4	31.8	21.8	30.2	18.3

<sup>a</sup> SEER 21 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> Rates are per 100,000 and are age-adjusted to the world (WHO 2000-2025) standard million.

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

Table 13.13  
Myeloid Leukemia

SEER Incidence<sup>a</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>Acute Myeloid Leukemia</u>									
<u>Age at Diagnosis</u>									
Age-Adjusted Rates, 2012-2016									
All ages	4.3	5.2	3.5	4.4	5.4	3.6	3.7	4.4	3.3
Under 65	2.0	2.1	1.9	2.0	2.1	1.9	2.0	2.0	2.0
65 and over	20.1	26.9	15.2	21.3	28.4	16.0	15.5	21.0	12.3
All ages (WHO world std) <sup>b</sup>	3.2	3.8	2.8	3.3	4.0	2.8	2.9	3.3	2.7
Age-Specific Rates, 2012-2016									
<1	1.6	1.6	1.6	1.5	1.5	1.5	-	-	-
1-4	1.0	1.0	1.0	0.9	0.9	0.9	1.1	1.0	1.1
5-9	0.4	0.4	0.4	0.4	0.4	0.4	0.3	-	-
10-14	0.7	0.8	0.6	0.7	0.8	0.6	0.9	0.9	0.8
15-19	0.9	0.9	0.9	0.9	1.0	0.9	0.8	0.7	0.8
20-24	1.1	1.0	1.2	1.1	1.0	1.2	1.2	1.1	1.3
25-29	1.2	1.1	1.2	1.1	1.1	1.2	1.1	1.0	1.2
30-34	1.4	1.5	1.4	1.4	1.5	1.4	1.7	1.5	1.9
35-39	1.6	1.6	1.6	1.5	1.6	1.5	1.8	1.6	2.0
40-44	2.1	2.2	2.1	2.2	2.2	2.2	2.2	2.1	2.2
45-49	2.5	2.5	2.5	2.5	2.5	2.5	2.8	2.7	2.9
50-54	3.5	3.8	3.2	3.6	4.0	3.3	3.3	3.2	3.3
55-59	4.9	5.6	4.3	4.9	5.6	4.3	4.9	5.7	4.3
60-64	7.8	9.1	6.7	8.2	9.7	6.8	7.0	7.5	6.6
65-69	12.1	15.2	9.4	12.9	16.3	9.8	10.0	11.8	8.6
70-74	18.3	23.6	13.9	19.2	24.7	14.5	15.1	18.9	12.5
75-79	23.3	31.0	17.4	24.8	32.6	18.6	18.5	25.6	14.0
80-84	28.6	39.3	21.2	30.2	41.3	22.3	20.7	31.4	14.8
85+	26.3	38.0	20.3	27.7	40.3	21.2	17.4	25.4	14.1
<u>Chronic Myeloid Leukemia</u>									
<u>Age at Diagnosis</u>									
Age-Adjusted Rates, 2012-2016									
All ages	1.9	2.4	1.4	1.9	2.5	1.5	1.8	2.2	1.5
Under 65	1.1	1.3	0.9	1.1	1.2	0.9	1.1	1.3	1.0
65 and over	7.6	10.6	5.5	8.0	11.1	5.7	6.2	8.2	4.9
All ages (WHO world std) <sup>b</sup>	1.5	1.9	1.1	1.5	1.9	1.2	1.4	1.7	1.2
Age-Specific Rates, 2012-2016									
<1	0.5	0.5	-	0.4	-	-	-	-	-
1-4	0.1	-	-	0.1	-	-	-	-	-
5-9	0.1	-	0.1	0.1	-	-	-	-	-
10-14	0.1	0.2	0.1	0.1	0.1	0.1	-	-	-
15-19	0.3	0.3	0.2	0.2	0.3	0.2	0.3	-	-
20-24	0.5	0.6	0.4	0.5	0.6	0.4	0.4	-	-
25-29	0.7	0.9	0.6	0.7	0.8	0.6	0.7	1.0	-
30-34	1.0	1.2	0.8	1.1	1.2	0.9	0.8	0.9	0.8
35-39	1.1	1.3	0.9	1.1	1.3	1.0	1.2	1.3	1.0
40-44	1.4	1.8	1.1	1.4	1.8	1.1	1.6	2.2	1.0
45-49	1.8	2.1	1.5	1.7	2.0	1.4	2.5	2.8	2.3
50-54	2.2	2.6	1.7	2.1	2.6	1.7	2.3	2.5	2.0
55-59	2.5	2.9	2.2	2.6	2.9	2.3	2.5	2.8	2.2
60-64	3.5	4.3	2.7	3.5	4.4	2.7	3.4	4.1	2.9
65-69	4.9	6.7	3.4	5.0	6.8	3.3	5.5	6.8	4.5
70-74	6.5	8.5	4.8	6.8	8.9	5.1	4.9	6.6	3.6
75-79	9.1	12.4	6.5	9.7	13.2	6.9	6.9	9.8	5.0
80-84	10.5	14.7	7.5	11.2	15.6	8.0	7.6	9.2	6.7
85+	10.2	15.5	7.5	10.7	16.4	7.6	7.5	10.9	6.0

<sup>a</sup> SEER 21 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> Rates are per 100,000 and are age-adjusted to the world (WHO 2000-2025) standard million.  
- Statistic not shown. Rate based on less than 16 cases for the time interval.

Table 13.14  
Leukemia

## 5-Year Relative and Period Survival (Percent) by Race, Sex, Diagnosis Year 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>	-	-	-	14	-	-	-	-	-
1970-1973 <sup>a</sup>	-	-	-	22	-	-	-	-	-
1975-1977 <sup>b</sup>	34.1	33.0	35.6	34.5	33.6	35.8	33.4	30.4	36.7
1978-1980 <sup>b</sup>	36.0	35.0	37.3	36.7	35.8	38.0	28.2	27.3	29.3
1981-1983 <sup>b</sup>	37.3	36.9	37.8	38.1	37.8	38.5	33.9	33.4	34.3
1984-1986 <sup>b</sup>	40.5	40.1	41.1	41.6	41.3	42.0	32.7	31.5	34.1
1987-1989 <sup>b</sup>	42.9	44.0	41.3	43.9	45.5	41.8	35.0	32.7	37.8
1990-1992 <sup>b</sup>	45.2	44.6	46.1	46.5	46.3	46.8	35.7	30.5	41.3
1993-1995 <sup>b</sup>	47.6	48.4	46.4	48.7	49.5	47.5	41.3	41.6	40.9
1996-1998 <sup>b</sup>	48.4	48.6	48.1	49.8	49.7	49.8	38.6	39.0	38.0
1999-2001 <sup>b</sup>	51.0	52.0	49.5	52.0	53.0	50.7	43.7	45.1	42.1
2002-2004 <sup>b</sup>	58.3	58.4	58.1	59.1	59.4	58.8	54.0	54.3	53.4
2005-2008 <sup>b</sup>	62.3	63.5	60.7	63.3	64.3	62.0	56.0	59.9	51.1
2009-2015 <sup>b</sup>	65.8 <sup>e</sup>	67.3 <sup>e</sup>	63.7 <sup>e</sup>	66.8 <sup>e</sup>	68.2 <sup>e</sup>	64.9 <sup>e</sup>	59.6 <sup>e</sup>	60.9 <sup>e</sup>	58.2 <sup>e</sup>
5-Year Period Survival (Percent) <sup>cd</sup>									
2015	63.2	64.3	61.9	63.4	64.0	62.4	58.2	61.7	54.4
5-Year Relative Survival (Percent), 2009-2015 <sup>c</sup>									
Age at Diagnosis:									
Ages <45	76.2	75.8	76.8	77.3	76.4	78.6	67.7	67.7	67.7
Ages 45-54	72.2	73.7	69.8	73.5	74.6	71.6	62.8	66.2	58.6
Ages 55-64	69.3	69.9	68.3	70.4	70.7	69.8	58.9	60.5	56.6
Ages 65-74	61.0	61.0	61.1	61.4	61.0	62.0	54.1	55.3	52.3
Ages 75+	42.1	42.4	41.7	42.7	42.8	42.5	33.7	35.7	31.6
Ages <65	72.9	73.1	72.5	73.9	73.8	74.1	63.7	65.0	62.1
Ages 65+	50.8	51.7	49.6	51.1	51.8	50.2	44.6	47.4	41.5

<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 2016. [Expected survival rates](#) are derived from the U.S. Annual Life Tables.

<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). Expected survival rates are derived from life tables by socio-economic status, geography and race developed by the SEER program.

<sup>d</sup> Based on follow-up of patients into 2016.

Period survival provides a 2015 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> The difference between 1975-1977 and 2009-2015 is statistically significant ( $p < .05$ ).

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

<sup>g</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 13.15  
Lymphocytic Leukemia

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

	All Races			Whites			Blacks		
	Total	Males	Females	Total	Males	Females	Total	Males	Females
<u>Acute Lymphocytic Leukemia</u>									
5-Year Relative Survival (Percent)									
Year of Diagnosis:									
1975-1977 <sup>a</sup>	40.6	36.9	45.6	40.8	37.4	45.7	33.5 <sup>e</sup>	-	-
...									
1987-1989 <sup>a</sup>	54.4	53.7	55.2	55.0	54.7	55.3	44.7 <sup>e</sup>	42.0 <sup>e</sup>	47.1 <sup>e</sup>
1990-1992 <sup>a</sup>	58.0	54.5	63.1	57.7	54.9	62.0	57.1 <sup>e</sup>	50.4 <sup>e</sup>	63.3 <sup>e</sup>
1993-1995 <sup>a</sup>	60.2	57.8	63.6	59.8	57.8	62.7	53.2 <sup>e</sup>	45.9 <sup>e</sup>	63.8 <sup>e</sup>
1996-1998 <sup>a</sup>	65.5	64.4	66.9	66.4	64.3	69.0	55.6 <sup>e</sup>	59.1 <sup>e</sup>	50.2 <sup>e</sup>
1999-2001 <sup>a</sup>	63.5	63.4	63.5	64.8	65.2	64.2	56.6 <sup>e</sup>	50.3 <sup>e</sup>	63.0 <sup>e</sup>
2002-2004 <sup>a</sup>	67.3	66.1	68.9	67.6	66.6	69.1	64.5 <sup>e</sup>	59.4 <sup>e</sup>	69.7 <sup>e</sup>
2005-2008 <sup>a</sup>	70.1	69.3	71.3	70.0	68.6	72.0	65.2	70.0	55.1 <sup>e</sup>
2009-2015 <sup>a</sup>	71.7 <sup>d</sup>	72.3 <sup>d</sup>	71.0 <sup>d</sup>	72.6 <sup>d</sup>	73.7 <sup>d</sup>	71.3 <sup>d</sup>	62.5 <sup>d</sup>	60.7	64.7 <sup>e</sup>
5-Year Period Survival (Percent) <sup>bc</sup>									
2015	69.1	68.4	69.8	68.5	67.4	70.0	65.0	65.0	64.8
5-Year Relative Survival (Percent), 2009-2015 <sup>b</sup>									
Age at Diagnosis:									
Ages <45	80.6	79.5	82.1	80.7	79.1	82.8	76.3	75.7	77.0
Ages 45-54	38.1	36.5	40.3	37.9	37.3	38.9	25.7 <sup>e</sup>	-	-
Ages 55-64	28.0	27.5	28.4	29.4	28.8	29.8	17.3 <sup>e</sup>	22.8 <sup>e</sup>	-
Ages 65-74	23.9	18.8	29.1	21.4	17.0	25.9	-	-	-
Ages 75+	9.1	9.7	8.3	10.0	9.6	10.0	0.0	-	-
Ages <65	73.3	72.5	74.3	73.5	72.4	74.9	66.8	66.8	66.8
Ages 65+	17.4	15.1	19.6	16.6	14.1	19.1	15.4 <sup>e</sup>	-	18.9 <sup>e</sup>
<u>Chronic Lymphocytic Leukemia</u>									
5-Year Relative Survival (Percent)									
Year of Diagnosis:									
1975-1977 <sup>a</sup>	67.1	64.7	70.3	67.9	65.4	71.1	56.9 <sup>e</sup>	55.1 <sup>e</sup>	59.0 <sup>e</sup>
...									
1987-1989 <sup>a</sup>	72.7	72.7	72.9	73.9	74.0	73.7	58.1	55.5 <sup>e</sup>	61.5 <sup>e</sup>
1990-1992 <sup>a</sup>	74.1	71.8	77.3	75.3	73.1	78.4	52.2	43.4 <sup>e</sup>	60.9 <sup>e</sup>
1993-1995 <sup>a</sup>	77.2	77.1	77.3	78.3	78.1	78.6	63.3	64.0 <sup>e</sup>	62.1 <sup>e</sup>
1996-1998 <sup>a</sup>	75.6	73.9	77.8	76.7	75.2	78.7	58.1	51.5 <sup>e</sup>	66.0 <sup>e</sup>
1999-2001 <sup>a</sup>	78.6	78.2	79.2	79.4	78.8	80.3	66.6	65.5 <sup>e</sup>	66.6 <sup>e</sup>
2002-2004 <sup>a</sup>	84.0	83.2	85.2	84.5	83.7	85.6	77.0	74.2 <sup>e</sup>	80.7 <sup>e</sup>
2005-2008 <sup>a</sup>	86.2	86.1	86.3	86.4	86.3	86.4	84.1	85.7	81.2
2009-2015 <sup>a</sup>	88.2 <sup>d</sup>	88.7 <sup>d</sup>	87.5 <sup>d</sup>	88.6 <sup>d</sup>	88.9 <sup>d</sup>	88.3 <sup>d</sup>	78.5 <sup>d</sup>	80.1 <sup>d</sup>	76.3
5-Year Period Survival (Percent) <sup>bc</sup>									
2015	85.6	85.5	85.8	85.3	84.8	86.0	77.2	81.8	71.0
5-Year Relative Survival (Percent), 2009-2015 <sup>b</sup>									
Age at Diagnosis:									
Ages <45	94.0	92.7	96.0	94.2	93.2	95.4	90.5 <sup>e</sup>	87.9 <sup>e</sup>	-
Ages 45-54	93.9	93.4	94.8	94.5	93.5	96.4	84.0	88.9	76.1 <sup>e</sup>
Ages 55-64	92.2	91.6	93.3	92.4	91.6	93.8	83.6	83.1	84.3
Ages 65-74	87.4	85.6	90.5	87.6	85.3	91.3	77.3	78.4	75.6
Ages 75+	73.1	72.7	73.6	72.9	72.4	73.4	58.4	58.6 <sup>e</sup>	56.4 <sup>e</sup>
Ages <65	92.8	92.2	93.9	93.1	92.3	94.7	84.3	85.4	82.4
Ages 65+	80.1	79.6	80.7	79.9	79.2	80.7	69.1	71.3	66.2

<sup>a</sup> SEER 9 areas (San Francisco, Connecticut, Detroit, Hawaii, Iowa, New Mexico, Seattle, Utah, Atlanta).  
Based on follow-up of patients into 2016. [Expected survival rates](#) are derived from the U.S. Annual Life Tables.

<sup>b</sup> SEER 18 areas (San Francisco, Connecticut, Detroit, Hawaii, Iowa, New Mexico, Seattle, Utah, San Jose-Monterey, Los Angeles, Alaska Native Registry, Rural Georgia, California excluding SF/SJM/LA, Kentucky, Louisiana, New Jersey and Georgia excluding ATL/RG). Expected survival rates are derived from life tables by socio-economic status, geography and race developed by the SEER program.

<sup>c</sup> Based on follow-up of patients into 2016.  
Period survival provides a 2015 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>d</sup> The difference between 1975-1977 and 2009-2015 is statistically significant (p<.05).

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

- 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 13.16  
Myeloid Leukemia

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

	All Races			Whites			Blacks		
	Total	Males	Females	Total	Males	Females	Total	Males	Females
<u>Acute Myeloid Leukemia</u>									
5-Year Relative Survival (Percent)									
Year of Diagnosis:									
1975-1977 <sup>a</sup>	6.2	5.5	7.0	5.8	5.4	6.2	10.1	8.2	11.7
...									
1987-1989 <sup>a</sup>	11.5	9.2	14.1	11.3	9.7	13.2	9.2	4.4	15.7 <sup>e</sup>
1990-1992 <sup>a</sup>	13.8	12.6	15.2	13.5	12.2	15.0	13.5	12.9	13.9
1993-1995 <sup>a</sup>	16.1	14.9	17.4	15.3	14.1	16.7	21.5	20.6 <sup>e</sup>	22.0
1996-1998 <sup>a</sup>	17.0	15.9	18.3	15.6	14.5	17.1	22.1	25.2	18.2
1999-2001 <sup>a</sup>	19.2	18.8	19.7	18.7	17.6	19.9	19.3	24.8	14.2
2002-2004 <sup>a</sup>	23.4	20.9	26.4	23.2	20.8	26.0	25.3	26.5	24.0
2005-2008 <sup>a</sup>	24.9	23.5	26.5	24.2	22.8	25.7	23.9	19.3	27.7
2009-2015 <sup>a</sup>	29.4 <sup>d</sup>	29.1 <sup>d</sup>	29.8 <sup>d</sup>	29.0 <sup>d</sup>	28.4 <sup>d</sup>	29.9 <sup>d</sup>	29.2 <sup>d</sup>	28.0 <sup>d</sup>	30.1 <sup>d</sup>
5-Year Period Survival (Percent) <sup>bc</sup>									
2015	28.6	27.8	29.4	28.2	27.6	28.9	28.3	26.2	30.1
5-Year Relative Survival (Percent), 2009-2015 <sup>b</sup>									
Age at Diagnosis:									
Ages <45	60.4	58.5	62.4	62.1	59.9	64.5	51.1	48.2	53.8
Ages 45-54	44.1	43.9	44.4	45.6	45.0	46.3	33.7	34.2	33.6
Ages 55-64	30.0	28.1	32.5	30.8	28.5	33.8	23.1	23.4	22.4
Ages 65-74	13.9	13.7	14.1	14.5	14.4	14.6	10.3	7.8	13.1
Ages 75+	3.4	4.0	2.7	3.4	4.1	2.7	2.4	-	2.0
Ages <65	46.6	44.4	49.1	47.4	44.9	50.4	39.3	37.1	41.4
Ages 65+	7.9	8.5	7.2	8.2	8.9	7.3	6.4	5.8	7.1
<u>Chronic Myeloid Leukemia</u>									
5-Year Relative Survival (Percent)									
Year of Diagnosis:									
1975-1977 <sup>a</sup>	21.8	19.3	25.1	20.5	18.4	23.4	27.7 <sup>e</sup>	21.6 <sup>e</sup>	35.5 <sup>e</sup>
...									
1987-1989 <sup>a</sup>	30.3	30.6	29.8	30.1	31.0	29.0	33.3 <sup>e</sup>	28.1 <sup>e</sup>	41.3 <sup>e</sup>
1990-1992 <sup>a</sup>	30.7	29.6	32.2	30.3	30.0	30.6	34.9 <sup>e</sup>	25.5 <sup>e</sup>	44.9 <sup>e</sup>
1993-1995 <sup>a</sup>	35.5	35.3	35.8	35.2	35.1	35.2	35.6 <sup>e</sup>	32.8 <sup>e</sup>	40.2 <sup>e</sup>
1996-1998 <sup>a</sup>	37.1	37.7	36.3	38.0	37.6	38.5	31.0	30.4 <sup>e</sup>	31.4 <sup>e</sup>
1999-2001 <sup>a</sup>	47.3	45.9	49.2	45.9	44.1	48.3	49.0 <sup>e</sup>	49.6 <sup>e</sup>	48.1 <sup>e</sup>
2002-2004 <sup>a</sup>	54.3	53.0	56.1	52.6	51.4	54.1	63.0 <sup>e</sup>	62.1 <sup>e</sup>	64.0 <sup>e</sup>
2005-2008 <sup>a</sup>	63.1	63.2	62.9	61.7	61.5	62.1	64.3	66.4 <sup>e</sup>	60.8 <sup>e</sup>
2009-2015 <sup>a</sup>	69.7 <sup>d</sup>	68.1 <sup>d</sup>	71.8 <sup>d</sup>	69.0 <sup>d</sup>	67.7 <sup>d</sup>	70.7 <sup>d</sup>	73.6 <sup>d</sup>	71.1 <sup>d</sup>	76.3 <sup>d</sup>
5-Year Period Survival (Percent) <sup>bc</sup>									
2015	69.5	68.3	71.2	68.1	66.6	70.2	72.3	71.4	73.5
5-Year Relative Survival (Percent), 2009-2015 <sup>b</sup>									
Age at Diagnosis:									
Ages <45	89.9	88.9	91.3	91.6	90.5	93.4	79.7	78.6	81.2
Ages 45-54	87.4	86.0	89.1	87.1	85.8	88.8	87.1	84.2	90.0
Ages 55-64	77.6	74.8	81.6	78.1	75.0	82.6	69.8	67.6 <sup>e</sup>	71.9 <sup>e</sup>
Ages 65-74	61.1	57.9	65.6	60.9	57.8	65.4	58.4 <sup>e</sup>	52.6 <sup>e</sup>	63.7 <sup>e</sup>
Ages 75+	32.6	30.5	34.6	32.1	30.2	33.6	36.2 <sup>e</sup>	36.2 <sup>f</sup>	36.2 <sup>e</sup>
Ages <65	85.1	83.6	87.3	85.6	83.9	88.3	79.0	77.3	80.8 <sup>e</sup>
Ages 65+	46.2	44.4	48.4	45.6	44.1	47.5	49.5	47.1 <sup>e</sup>	51.5 <sup>e</sup>

a

SEER 9 areas (San Francisco, Connecticut, Detroit, Hawaii, Iowa, New Mexico, Seattle, Utah, Atlanta).

Based on follow-up of patients into 2016. [Expected survival rates](#) are derived from the U.S. Annual Life Tables.

b

SEER 18 areas (San Francisco, Connecticut, Detroit, Hawaii, Iowa, New Mexico, Seattle, Utah, San Jose-Monterey, Los Angeles, Alaska Native Registry, Rural Georgia, California excluding SF/SJM/LA, Kentucky, Louisiana, New Jersey and Georgia excluding ATL/RG). Expected survival rates are derived from life tables by socio-economic status, geography and race developed by the SEER program.

c

Based on follow-up of patients into 2016.

Period survival provides a 2015 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).

d

The difference between 1975-1977 and 2009-2015 is statistically significant (p&lt;.05).

e

The standard error is between 5 and 10 percentage points.

f

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 13.17  
LeukemiaSEER<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	2013	2014	2015
Survival Time																									
1-year	60.8	62.6	64.8	66.9	68.1	68.2	67.9	66.7	65.9	66.9	70.6	72.2	73.2	75.1	74.2	76.5	76.9	76.6	77.4	78.3	79.4	79.1	79.0	79.1	80.6
2-year	50.1	52.5	55.3	57.5	58.9	59.9	59.8	58.0	58.3	59.0	63.0	64.9	66.2	67.7	68.4	70.5	70.6	70.2	70.9	72.5	73.2	72.5	73.2	73.4	
3-year	43.7	46.5	49.6	52.8	54.3	55.4	54.9	54.1	54.7	55.1	59.0	61.9	62.4	64.3	64.7	67.3	67.6	66.5	68.4	69.2	70.3	69.2	69.8		
4-year	38.8	41.7	45.5	49.1	50.7	51.9	50.9	50.3	51.6	52.0	56.7	59.6	59.5	61.9	62.7	64.7	65.3	63.9	65.8	67.6	68.3	67.3			
5-year	34.6	37.6	42.3	46.1	48.1	48.7	48.3	48.2	48.4	49.9	54.3	57.8	57.5	59.6	61.0	62.6	63.7	61.9	63.5	65.9	66.5				
6-year	31.4	35.1	39.9	43.5	45.7	46.5	45.8	46.1	46.2	48.5	52.4	56.0	55.6	57.2	59.3	60.7	62.2	60.4	61.3	64.7					
7-year	29.1	32.5	37.1	40.9	44.2	45.1	43.8	44.6	44.4	47.3	51.0	54.4	53.7	56.0	57.9	59.1	61.4	58.7	60.1						
8-year	27.0	30.4	35.0	38.8	41.7	43.8	43.2	43.1	43.0	45.7	49.6	53.5	51.9	54.6	56.1	57.3	60.3	57.6							
9-year	25.0	28.5	33.0	37.3	40.6	42.0	41.8	42.1	42.1	44.9	48.3	51.9	50.7	53.0	54.6	56.1	59.3								
10-year	23.7	26.9	31.6	36.0	39.0	40.6	40.6	41.0	40.6	43.8	47.1	50.4	48.9	51.5	53.2	54.5									
11-year	22.4	25.7	29.9	34.7	37.8	39.8	38.7	39.7	39.2	42.6	45.9	49.2	47.3	49.9	52.7										
12-year	21.2	24.6	28.8	33.6	37.1	38.7	37.7	39.0	38.3	41.9	44.9	48.3	46.0	49.2											
13-year	20.4	23.6	28.0	32.7	36.7	38.2	37.0	38.0	37.2	40.4	44.2	46.6	45.4												
14-year	19.8	22.9	27.2	31.8	35.6	37.1	36.8	37.0	36.7	39.2	43.4	45.6													
15-year	19.2	22.3	26.7	31.3	35.3	36.1	36.2	35.8	35.9	38.3	42.3														
16-year	18.5	21.4	26.1	30.6	35.0	35.9	36.1	35.0	35.3	37.4															
17-year	18.1	20.7	25.6	30.0	34.0	35.5	35.2	34.6	34.7																
18-year	17.7	20.1	25.3	29.4	33.0	35.1	34.6	34.3																	
19-year	17.1	19.5	24.8	29.1	32.6	34.3	34.4																		
20-year	16.6	19.1	24.4	28.6	31.9	33.8																			

<sup>a</sup> Based on the SEER 9 areas (San Francisco, Connecticut, Detroit, Hawaii, Iowa, New Mexico, Seattle, Utah, and Atlanta). [Expected survival rates](#) are derived from the U.S. Annual Life Tables.

Table 13.18  
LeukemiaSEER<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	2013	2014	2015
Survival Time																									
1-year	60.4	62.8	65.5	67.9	69.2	69.7	68.8	66.7	66.8	68.8	72.9	73.1	74.2	76.7	76.1	77.0	78.0	77.5	79.1	79.3	80.6	79.7	80.3	81.2	81.7
2-year	49.4	52.4	56.1	58.3	60.4	61.6	61.1	58.5	59.0	60.8	64.8	65.2	66.9	68.7	70.1	70.6	71.9	71.6	72.7	74.0	74.6	73.3	74.9	75.1	
3-year	42.7	46.0	49.9	53.2	55.6	57.3	55.2	54.6	55.2	57.3	60.8	62.4	62.7	65.3	66.4	67.4	68.9	67.9	69.9	71.2	71.9	69.8	71.4		
4-year	37.7	41.1	45.9	49.4	51.6	53.5	50.5	50.5	52.0	53.9	58.1	59.8	60.1	62.7	65.0	64.8	66.7	65.0	67.7	69.0	69.7	67.7			
5-year	33.4	37.1	42.9	46.2	48.2	49.5	47.9	48.4	48.0	52.3	55.3	57.3	57.8	60.2	63.0	62.6	65.3	63.2	65.6	67.3	68.4				
6-year	30.3	34.3	40.4	43.5	45.2	47.1	45.9	46.1	46.1	50.8	52.9	55.4	55.7	57.5	60.9	60.2	63.5	61.5	63.1	66.1					
7-year	27.7	31.8	37.3	40.9	43.9	45.8	43.8	44.4	43.9	49.8	51.4	53.1	53.5	56.4	59.4	58.8	62.5	59.5	61.6						
8-year	25.4	29.4	35.4	38.5	41.7	44.6	43.0	43.0	42.3	47.8	50.0	52.0	51.4	54.9	57.2	56.3	61.6	58.3							
9-year	23.2	27.5	33.2	37.1	40.4	42.3	42.1	41.9	41.5	46.4	48.6	50.7	50.1	52.6	55.3	54.8	60.5								
10-year	21.9	26.0	31.7	35.8	38.2	40.7	41.3	41.0	40.1	45.4	47.3	49.0	47.9	51.1	53.9	52.6									
11-year	20.5	24.9	30.2	34.6	37.7	39.8	39.1	39.3	38.3	44.4	46.1	47.4	46.4	49.6	53.3										
12-year	19.3	24.2	29.0	33.4	37.1	39.0	38.0	38.4	37.5	43.7	45.2	46.7	45.5	49.1											
13-year	18.6	23.4	28.3	32.5	36.7	38.9	37.3	36.9	36.3	42.0	44.2	45.5	44.7												
14-year	17.9	22.7	27.7	31.5	35.7	37.9	37.0	35.8	35.7	41.0	43.3	44.7													
15-year	17.5	22.1	26.9	30.9	35.2	37.1	36.5	34.9	35.1	39.9	42.2														
16-year	16.8	21.2	26.3	30.3	34.7	36.9	36.0	34.1	34.6	38.7															
17-year	16.4	20.4	26.0	29.6	33.9	36.6	34.8	33.5	34.3																
18-year	15.9	19.9	25.7	29.0	32.4	36.4	34.5	33.1																	
19-year	15.4	19.2	25.3	28.8	32.2	35.5	34.1																		
20-year	14.6	18.7	24.9	28.3	31.6	34.7																			

<sup>a</sup> Based on the SEER 9 areas (San Francisco, Connecticut, Detroit, Hawaii, Iowa, New Mexico, Seattle, Utah, and Atlanta). [Expected survival rates](#) are derived from the U.S. Annual Life Tables.

Table 13.19  
LeukemiaSEER<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	2013	2014	2015
Survival Time																									
1-year	61.3	62.3	63.8	65.5	66.5	66.4	66.6	66.7	64.6	64.3	67.5	71.0	71.9	72.9	71.5	75.9	75.5	75.4	75.1	76.9	77.8	78.2	77.2	76.1	79.1
2-year	50.9	52.7	54.2	56.4	56.9	57.8	58.0	57.4	57.3	56.4	60.6	64.5	65.3	66.4	66.0	70.5	68.9	68.4	68.4	70.5	71.4	71.6	70.9	70.9	
3-year	45.0	47.1	49.2	52.3	52.5	52.9	54.4	53.4	53.9	52.2	56.4	61.2	61.9	62.8	62.4	67.3	65.7	64.7	66.3	66.6	68.1	68.5	67.7		
4-year	40.2	42.4	44.9	48.5	49.5	49.8	51.4	50.0	51.1	49.4	54.8	59.4	58.7	60.8	59.5	64.6	63.3	62.4	63.3	65.8	66.4	66.8			
5-year	36.1	38.4	41.4	45.9	48.0	47.5	48.9	47.9	48.9	46.6	53.0	58.4	57.0	58.8	58.2	62.7	61.5	60.1	60.7	64.1	63.9				
6-year	32.8	36.0	39.2	43.5	46.4	45.7	45.6	46.1	46.3	45.5	51.6	56.7	55.6	56.9	57.2	61.3	60.2	58.9	58.8	62.9					
7-year	30.9	33.4	36.7	41.0	44.7	44.3	43.8	44.8	45.0	43.8	50.4	56.1	53.9	55.6	55.8	59.4	59.8	57.5	57.9						
8-year	29.0	31.6	34.4	39.1	41.6	42.8	43.3	43.3	43.8	42.8	49.0	55.6	52.6	54.2	54.6	58.5	58.2	56.3							
9-year	27.3	29.9	32.6	37.6	40.9	41.6	41.3	42.4	42.9	42.8	47.7	53.5	51.5	53.4	53.5	57.6	57.6								
10-year	25.9	28.1	31.5	36.4	39.9	40.5	39.6	40.9	41.4	41.6	46.8	52.2	50.2	52.1	52.1	56.8									
11-year	24.7	26.9	29.5	34.7	37.8	39.8	38.3	40.3	40.3	40.1	45.6	51.5	48.6	50.3	51.8										
12-year	23.5	25.0	28.5	33.8	37.2	38.2	37.3	39.7	39.3	39.5	44.5	50.5	46.8	49.3											
13-year	22.8	23.9	27.6	32.9	36.5	37.3	36.6	39.2	38.5	38.3	44.2	48.1	46.3												
14-year	22.0	23.2	26.7	32.3	35.5	36.1	36.3	38.5	38.0	36.7	43.4	46.8													
15-year	21.4	22.5	26.4	31.8	35.3	34.8	35.9	36.9	36.8	36.3	42.4														
16-year	20.6	21.7	25.8	31.0	35.3	34.4	35.9	36.1	36.3	35.8															
17-year	20.1	21.0	25.2	30.5	34.2	34.0	35.7	35.8	35.0																
18-year	19.8	20.5	24.8	30.1	33.6	33.4	34.7	35.8																	
19-year	19.3	19.8	24.1	29.6	33.0	32.6	34.6																		
20-year	19.0	19.5	23.8	29.0	32.1	32.3																			

<sup>a</sup> Based on the SEER 9 areas (San Francisco, Connecticut, Detroit, Hawaii, Iowa, New Mexico, Seattle, Utah, and Atlanta). [Expected survival rates](#) are derived from the U.S. Annual Life Tables.

Table 13.20  
Leukemia

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, 2014-2016 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	0.06	0.09	0.12	1.56	0.82	Asian/ Pacific Islander	0	0.05	0.08	0.11	0.99	0.58
	10	0.03	0.06	0.10	1.52	0.82		10	0.03	0.06	0.09	0.95	0.58
	20	0.03	0.07	0.14	1.49	0.82		20	0.03	0.06	0.10	0.92	0.58
	30	0.04	0.11	0.26	1.47	0.82		30	0.03	0.08	0.16	0.90	0.57
	40	0.07	0.22	0.51	1.45	0.82		40	0.04	0.12	0.26	0.87	0.57
	50	0.15	0.45	0.89	1.41	0.82		50	0.08	0.22	0.47	0.83	0.56
	60	0.31	0.79	1.21	1.34	0.82		60	0.14	0.40	0.66	0.78	0.54
	70	0.53	1.01	-	1.15	0.80		70	0.28	0.55	-	0.67	0.51
80	0.62	-	-	0.82	0.68	80	0.32	-	-	0.47	0.40		
White	0	0.06	0.10	0.13	1.64	0.85	American Indian/ Alaska Native <sup>a</sup>	0	0.05	0.07	0.09	0.85	0.40
	10	0.03	0.07	0.11	1.59	0.86		10	0.02	0.04	0.08	0.81	0.40
	20	0.03	0.07	0.14	1.56	0.85		20	0.02	0.06	0.10	0.79	0.39
	30	0.04	0.11	0.27	1.55	0.85		30	0.04	0.08	0.19	0.78	0.39
	40	0.07	0.23	0.53	1.53	0.85		40	0.04	0.15	0.30	0.76	0.40
	50	0.16	0.47	0.95	1.49	0.86		50	0.12	0.27	0.51	0.75	0.40
	60	0.33	0.83	1.27	1.41	0.86		60	0.17	0.42	0.61	0.68	0.40
	70	0.57	1.06	-	1.21	0.84		70	0.29	0.51	-	0.58	0.38
80	0.66	-	-	0.86	0.71	80	0.29	-	-	0.38	0.25		
Black	0	0.03	0.06	0.08	1.07	0.58	Hispanic <sup>b</sup>	0	0.07	0.11	0.15	1.24	0.66
	10	0.02	0.05	0.09	1.05	0.59		10	0.05	0.08	0.12	1.18	0.66
	20	0.03	0.06	0.13	1.04	0.59		20	0.04	0.08	0.14	1.14	0.65
	30	0.04	0.11	0.22	1.02	0.58		30	0.04	0.10	0.21	1.11	0.64
	40	0.07	0.19	0.41	1.00	0.58		40	0.06	0.17	0.37	1.08	0.64
	50	0.13	0.35	0.66	0.97	0.58		50	0.11	0.31	0.63	1.04	0.63
	60	0.25	0.58	0.83	0.91	0.58		60	0.21	0.54	0.85	0.97	0.62
	70	0.39	0.69	-	0.79	0.57		70	0.37	0.70	-	0.83	0.58
80	0.42	-	-	0.56	0.48	80	0.42	-	-	0.58	0.49		

Devcan 6.7.7, April 2019, National Cancer Institute (<https://surveillance.cancer.gov/devcan/>).

Source: Incidence data are from the SEER 21 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, Georgia excluding ATL/RG, Idaho, New York and Massachusetts). 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 PRCD (Purchased/Referred Care Delivery Areas) 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 13.21  
Leukemia

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, 2014-2016 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	0.06	0.10	0.13	1.86	0.96	Asian/ Pacific Islander	0	0.05	0.09	0.11	1.19	0.72
	10	0.04	0.07	0.12	1.82	0.97		10	0.04	0.07	0.10	1.15	0.72
	20	0.03	0.08	0.16	1.79	0.97		20	0.03	0.07	0.12	1.11	0.71
	30	0.05	0.13	0.30	1.77	0.97		30	0.04	0.09	0.19	1.09	0.71
	40	0.08	0.26	0.62	1.76	0.98		40	0.05	0.15	0.33	1.06	0.70
	50	0.18	0.56	1.12	1.73	0.99		50	0.10	0.28	0.62	1.02	0.69
	60	0.40	1.01	1.52	1.66	1.01		60	0.19	0.54	0.84	0.96	0.68
	70	0.71	1.29	-	1.46	1.01		70	0.38	0.71	-	0.84	0.65
80	0.82	-	-	1.05	0.88	80	0.40	-	-	0.56	0.52		
White	0	0.07	0.11	0.14	1.95	1.01	American Indian/ Alaska Native <sup>a</sup>	0	0.06	0.09	0.11	1.10	0.48
	10	0.04	0.08	0.12	1.90	1.02		10	0.03	0.05	0.10	1.05	0.48
	20	0.04	0.08	0.16	1.87	1.01		20	0.02	0.07	0.11	1.03	0.48
	30	0.05	0.13	0.31	1.86	1.01		30	0.05	0.09	0.21	1.03	0.48
	40	0.09	0.27	0.65	1.84	1.02		40	0.05	0.17	0.41	1.02	0.49
	50	0.19	0.58	1.18	1.81	1.03		50	0.13	0.39	0.75	1.02	0.51
	60	0.42	1.07	1.60	1.74	1.06		60	0.28	0.67	0.87	0.97	0.51
	70	0.75	1.36	-	1.53	1.05		70	0.46	0.70	-	0.81	0.49
80	0.87	-	-	1.10	0.91	80	0.34	-	-	0.49	0.30		
Black	0	0.03	0.06	0.08	1.22	0.65	Hispanic <sup>b</sup>	0	0.07	0.13	0.17	1.41	0.80
	10	0.03	0.06	0.09	1.22	0.66		10	0.05	0.10	0.15	1.35	0.80
	20	0.03	0.06	0.14	1.20	0.65		20	0.05	0.09	0.16	1.30	0.79
	30	0.04	0.11	0.25	1.19	0.66		30	0.05	0.11	0.23	1.27	0.78
	40	0.08	0.22	0.48	1.18	0.66		40	0.07	0.18	0.40	1.24	0.78
	50	0.15	0.42	0.79	1.15	0.67		50	0.12	0.34	0.72	1.20	0.78
	60	0.31	0.71	1.02	1.12	0.68		60	0.24	0.64	1.00	1.14	0.78
	70	0.51	0.89	-	1.01	0.68		70	0.46	0.86	-	1.02	0.77
80	0.58	-	-	0.77	0.61	80	0.53	-	-	0.74	0.70		

Devcan 6.7.7, April 2019, National Cancer Institute (<https://surveillance.cancer.gov/devcan/>).

Source: Incidence data are from the SEER 21 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, Georgia excluding ATL/RG, Idaho, New York and Massachusetts). 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 PRCDA (Purchased/Referred Care Delivery Areas) 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 13.22  
Leukemia

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, 2014-2016 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	0.06	0.08	0.11	1.29	0.68	Asian/ Pacific Islander	0	0.05	0.08	0.10	0.83	0.48
	10	0.03	0.05	0.09	1.25	0.69		10	0.03	0.05	0.08	0.78	0.47
	20	0.03	0.06	0.12	1.22	0.68		20	0.02	0.05	0.09	0.75	0.47
	30	0.03	0.09	0.21	1.20	0.68		30	0.03	0.06	0.13	0.73	0.46
	40	0.06	0.18	0.39	1.18	0.68		40	0.04	0.10	0.21	0.71	0.46
	50	0.12	0.34	0.68	1.14	0.67		50	0.07	0.17	0.35	0.68	0.45
	60	0.23	0.59	0.93	1.06	0.67		60	0.11	0.29	0.51	0.63	0.44
	70	0.39	0.77	-	0.91	0.64		70	0.19	0.42	-	0.54	0.40
80	0.48	-	-	0.66	0.55	80	0.26	-	-	0.40	0.33		
White	0	0.06	0.09	0.11	1.35	0.71	American Indian/ Alaska Native <sup>a</sup>	0	0.03	0.05	0.07	0.61	0.31
	10	0.03	0.05	0.09	1.31	0.71		10	0.02	0.03	0.07	0.58	0.31
	20	0.03	0.06	0.12	1.28	0.71		20	0.02	0.05	0.08	0.56	0.31
	30	0.03	0.10	0.22	1.26	0.71		30	0.04	0.07	0.17	0.55	0.31
	40	0.06	0.19	0.42	1.24	0.70		40	0.03	0.14	0.20	0.53	0.31
	50	0.13	0.36	0.72	1.20	0.70		50	0.11	0.17	0.30	0.51	0.31
	60	0.24	0.62	0.99	1.12	0.69		60	0.07	0.21	0.38	0.42	0.30
	70	0.42	0.81	-	0.96	0.67		70	0.15	0.35	-	0.39	0.29
80	0.51	-	-	0.69	0.57	80	0.25	-	-	0.30	0.22		
Black	0	0.04	0.06	0.08	0.95	0.53	Hispanic <sup>b</sup>	0	0.06	0.10	0.13	1.10	0.56
	10	0.02	0.04	0.08	0.93	0.54		10	0.04	0.07	0.10	1.05	0.56
	20	0.02	0.06	0.12	0.91	0.53		20	0.03	0.06	0.12	1.01	0.55
	30	0.04	0.10	0.20	0.89	0.53		30	0.03	0.09	0.19	0.99	0.54
	40	0.06	0.16	0.35	0.87	0.53		40	0.06	0.16	0.34	0.96	0.54
	50	0.11	0.29	0.54	0.83	0.52		50	0.10	0.28	0.55	0.91	0.52
	60	0.20	0.47	0.69	0.77	0.51		60	0.19	0.46	0.73	0.84	0.50
	70	0.30	0.55	-	0.65	0.49		70	0.30	0.59	-	0.70	0.46
80	0.33	-	-	0.46	0.42	80	0.35	-	-	0.48	0.37		

Devcan 6.7.7, April 2019, National Cancer Institute (<https://surveillance.cancer.gov/devcan/>).

Source: Incidence data are from the SEER 21 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, Georgia excluding ATL/RG, Idaho, New York and Massachusetts). 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 PRCDA (Purchased/Referred Care Delivery Areas) 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 13.23  
Leukemia

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

SEER Incidence	SEER 21 Areas <sup>b</sup>			SEER 21 Areas <sup>b</sup>			SEER 9 Areas <sup>b</sup>		
	Rate 2012-2016			Trend 2007-2016 <sup>c</sup>			Trend 2007-2016 <sup>d</sup>		
	Rate per 100,000 persons			AAPC (%)			AAPC (%)		
Race/Ethnicity	Total	Males	Females	Total	Males	Females	Total	Males	Females
All Races	14.1	18.1	10.9	-0.4	-0.2	-0.6	-0.3	0.2*	0.3*
White	14.9	19.1	11.5	-0.5	-0.5	-0.7	0.4*	0.3*	0.5*
White Hispanic <sup>e</sup>	11.2	13.4	9.4	0.1	-0.2	0.3	-	-	-
White Non-Hispanic <sup>e</sup>	15.3	19.7	11.6	-0.5	-0.5	-0.8	-	-	-
Black	10.9	13.9	8.9	0.6	0.2	0.7	0.1	0.1	0.2
Asian/Pacific Islander	7.8	9.7	6.3	0.1	0.0	0.2	-	-	-
Amer Ind/Alaska Nat <sup>f</sup>	8.6	11.0	6.6	0.8	2.1	-0.1	-	-	-
Hispanic <sup>e</sup>	10.8	13.0	9.1	0.2	0.0	0.3	-	-	-
<u>U.S. Mortality<sup>g</sup></u>									
Race/Ethnicity	Rate 2012-2016			Trend 2007-2016 <sup>h</sup>					
	Rate per 100,000 persons			AAPC (%)					
	Total	Males	Females	Total	Males	Females			
All Races	6.5	8.8	4.9	-1.6*	-1.7*	-1.3*			
White	6.8	9.1	5.1	-1.4*	-1.6*	-1.2*			
White Hispanic <sup>e</sup>	5.0	6.3	4.1	-0.7*	-0.8*	-0.6*			
White Non-Hispanic <sup>e</sup>	6.9	9.3	5.1	-1.4*	-1.5*	-1.2*			
Black	5.5	7.2	4.4	-1.5*	-1.7*	-1.5*			
Asian/Pacific Islander	3.6	4.7	2.8	-1.8*	-0.7	-2.3*			
Amer Ind/Alaska Nat									
Total U.S.	3.1	4.2	2.3	-2.2*	-0.9	-3.6*			
PRCDA Counties	4.1	5.4	3.0	-1.6*	-0.5	-2.8*			
Non-PRCDA Counties	2.0	2.8	1.5	-3.1*	-1.3	-5.0*			
Hispanic <sup>e</sup>	4.7	6.0	3.8	-0.8*	-0.9*	-0.7*			

The AAPC is the Average Annual Percent Change over the time interval. The AAPCs are calculated by the Joinpoint Regression Program Version 4.7, February 2019, 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.

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).

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

The SEER 21 areas comprise the SEER 9 areas plus San Jose-Monterey, Los Angeles, the Alaska Native Registry, Rural Georgia, California excluding SF/SJM/LA, Kentucky, Louisiana, New Jersey, Georgia excluding ATL/RG, Idaho, New York and Massachusetts.

The 2007-2016 AAPC estimates are based on a Joinpoint analysis with up to 3 Joinpoints over diagnosis years 2000-2016.

The 2007-2016 AAPC estimates are based on a Joinpoint analysis with up to 5 Joinpoints over diagnosis years 1975-2016.

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.

Incidence data for American Indian/Alaska Native are based on the Purchased/Referred Care Delivery Area (PRCDA) counties.

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

The 2007-2016 mortality AAPCs are based on a Joinpoint analysis using years of death 2000-2016.

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

Table 13.24  
LeukemiaAge-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>, 2012-2016</u>									
California	12.39	15.90	9.49	13.37	17.15	10.20	10.39	13.34	8.13
Greater Bay Area	12.31	16.19	9.15	14.00	18.44	10.28	10.98	14.06	8.59
San Francisco-Oakland	12.12	15.96	9.06	13.89	18.23	10.34	10.77	13.36	8.81
San Jose-Monterey	12.59	16.51	9.25	14.10	18.69	10.11	12.39	17.87	-
Los Angeles	11.73	14.69	9.33	12.91	16.22	10.16	10.50	12.94	8.84
Greater California	12.71	16.33	9.68	13.34	17.09	10.17	10.07	13.38	7.29
Connecticut	14.06	17.68	11.17	14.31	17.90	11.42	9.76	11.26	8.67
Detroit	15.84	20.50	12.30	17.07	22.22	13.00	12.04	14.85	10.18
Georgia	14.30	18.41	11.20	15.37	19.70	11.89	11.39	14.87	9.35
Atlanta	13.82	18.19	10.64	15.63	20.17	12.07	11.38	15.57	8.84
Rural Georgia	14.11	15.86	12.06	15.10	17.73	11.96	12.48	-	12.36
Greater Georgia	14.55	18.63	11.44	15.31	19.65	11.82	11.40	14.50	9.68
Hawaii	10.73	13.39	8.43	13.88	16.12	11.39	-	-	-
Idaho	15.88	19.50	12.63	16.04	19.73	12.72	-	-	-
Iowa	16.27	21.27	12.22	16.30	21.33	12.21	14.16	17.43	10.76
Kentucky	15.66	19.83	12.34	15.77	19.95	12.41	11.59	14.46	9.22
Louisiana	14.05	17.89	11.04	15.18	19.18	11.97	11.03	13.93	8.90
Massachusetts	11.08	14.29	8.54	11.18	14.48	8.56	7.87	10.50	6.20
New Jersey	15.24	19.62	11.88	15.41	19.82	11.99	11.36	14.69	9.28
New Mexico	12.99	15.50	10.86	13.10	15.56	11.01	10.45	-	-
New York	16.23	21.19	12.44	17.52	22.81	13.35	10.68	13.60	8.87
Seattle-Puget Sound	15.68	20.20	11.88	16.34	20.84	12.49	14.86	19.29	10.77
Utah	13.75	17.93	10.09	14.01	18.25	10.29	-	-	-
SEER 9 Areas <sup>b</sup>	14.19	18.23	10.94	15.21	19.45	11.71	11.54	14.60	9.41
SEER 13 Areas <sup>b</sup>	13.57	17.37	10.49	14.73	18.82	11.34	11.26	14.19	9.22
SEER 18 Areas <sup>b</sup>	13.76	17.61	10.66	14.61	18.67	11.27	11.14	14.14	9.07
SEER 21 Areas <sup>b</sup>	14.07	18.07	10.88	14.91	19.12	11.47	10.89	13.86	8.89

<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.

The SEER 21 areas comprise the SEER 18 areas plus Idaho, New York and Massachusetts.

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



Table 13.25  
LeukemiaAge-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>, 2012-2016</u>									
California	6.17	8.11	4.70	6.71	8.85	5.07	5.60	7.11	4.61
Greater Bay Area	5.63	7.59	4.19	6.40	8.69	4.70	5.51	7.42	4.24
San Francisco-Oakland	5.51	7.53	4.05	6.31	8.71	4.55	5.44	7.26	4.21
San Jose-Monterey	5.84	7.68	4.46	6.53	8.63	4.95	6.04	-	-
Los Angeles	6.08	7.97	4.68	6.75	8.94	5.13	5.71	7.17	4.83
Greater California	6.39	8.35	4.89	6.77	8.86	5.15	5.53	6.87	4.58
Connecticut	6.22	8.37	4.65	6.39	8.62	4.74	5.36	6.65	4.49
Detroit	6.62	9.15	4.85	6.91	9.67	4.94	5.73	7.23	4.75
Georgia	6.14	8.17	4.67	6.42	8.55	4.78	5.38	7.06	4.38
Atlanta	5.68	7.57	4.37	6.15	8.02	4.83	4.87	6.58	3.74
Rural Georgia	5.81	6.28	5.38	5.79	6.35	-	-	-	-
Greater Georgia	6.39	8.51	4.82	6.54	8.79	4.77	5.76	7.45	4.83
Hawaii	4.63	5.93	3.62	5.43	6.32	4.40	-	-	-
Idaho	6.55	8.46	4.97	6.61	8.65	4.92	-	-	-
Iowa	6.93	9.61	4.98	7.00	9.63	5.08	-	-	-
Kentucky	7.42	9.49	5.92	7.50	9.53	6.03	6.33	8.94	4.55
Louisiana	6.77	9.06	5.14	7.05	9.53	5.20	6.03	7.76	4.98
Massachusetts	6.22	8.30	4.78	6.47	8.69	4.90	4.63	5.24	4.44
New Jersey	6.15	8.10	4.78	6.57	8.71	5.04	4.74	5.49	4.29
New Mexico	5.60	7.59	4.00	5.89	7.94	4.21	-	-	-
New York	6.21	8.42	4.66	6.75	9.10	5.06	4.50	6.02	3.56
Seattle-Puget Sound	6.18	7.95	4.81	6.37	8.07	5.03	7.08	9.75	4.99
Utah	6.79	8.65	5.26	6.93	8.76	5.42	-	-	-
SEER 9 Areas <sup>b</sup>	6.10	8.18	4.57	6.51	8.69	4.87	5.40	7.11	4.27
SEER 13 Areas <sup>b</sup>	6.09	8.10	4.60	6.58	8.74	4.94	5.44	7.08	4.37
SEER 18 Areas <sup>b</sup>	6.30	8.32	4.80	6.71	8.87	5.08	5.52	7.05	4.55
SEER 21 Areas <sup>b</sup>	6.28	8.34	4.77	6.70	8.89	5.06	5.20	6.70	4.26
Total U.S.	6.54	8.76	4.89	6.81	9.12	5.06	5.50	7.21	4.39

<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.

The SEER 21 areas comprise the SEER 18 areas plus Idaho, New York and Massachusetts.

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

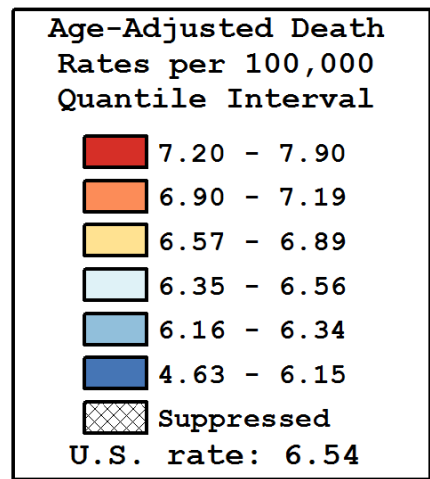
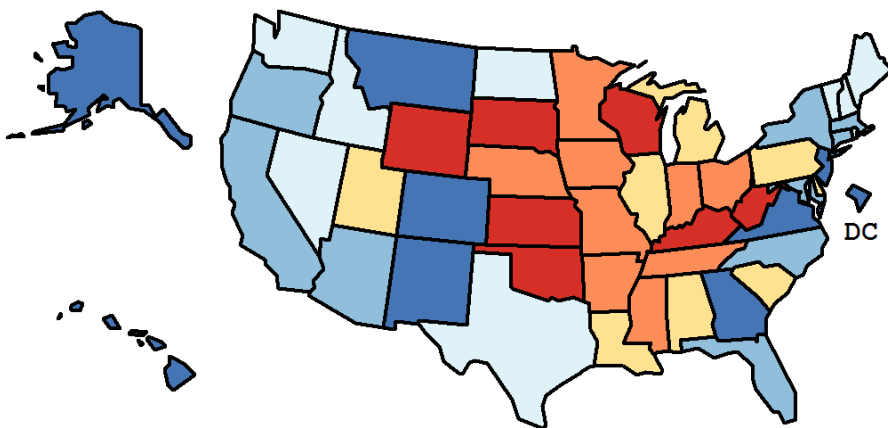
Table 13.26  
Leukemia

Age-Adjusted Cancer Death<sup>a</sup> Rates By State, All Races, 2012-2016

Males and Females

State	Rate	SE	Rank(CI) <sup>d</sup>	PD
TOTAL U.S.	6.54	0.02		
High Five States				
Oklahoma	7.90	0.19	01(01,08)	20.83 <sup>c</sup>
West Virginia	7.49	0.25	02(01,23)	14.49
South Dakota	7.47	0.40	03(01,33)	14.15
Kentucky	7.42	0.18	04(01,16)	13.52
Kansas	7.42	0.22	05(01,22)	13.50
Low Five States				
Colorado	6.09	0.16	47(26,49)	-6.92
Alaska	5.96	0.50	48(04,51)	-8.85
New Mexico	5.60	0.22	49(36,50)	-14.30
D.C.	5.04	0.41	50(32,51)	-22.93 <sup>c</sup>
Hawaii	4.63	0.24	51(49,51)	-29.13 <sup>c</sup>

State	Rate	SE	Rank(CI) <sup>d</sup>	PD	State	Rate	SE	Rank(CI) <sup>d</sup>	PD
Alabama	6.89	0.16	17(05,32)	5.33	Montana	6.13	0.32	45(09,50)	-6.34
Alaska	5.96	0.50	48(04,51)	-8.85	Nebraska	7.18	0.26	10(01,31)	9.83
Arizona	6.32	0.13	36(22,48)	-3.29	Nevada	6.44	0.21	28(11,48)	-1.57
Arkansas	7.19	0.21	09(01,27)	9.93	New Hampshire	6.38	0.29	31(07,49)	-2.38
California	6.17	0.06	42(32,48)	-5.72	New Jersey	6.15	0.11	43(28,49)	-5.92
Colorado	6.09	0.16	47(26,49)	-6.92	New Mexico	5.60	0.22	49(36,50)	-14.30
Connecticut	6.22	0.17	40(22,49)	-4.90	New York	6.21	0.07	41(29,48)	-4.99
Delaware	6.64	0.35	24(02,49)	1.52	North Carolina	6.34	0.11	34(23,47)	-3.10
D.C.	5.04	0.41	50(32,51)	-22.93 <sup>c</sup>	North Dakota	6.56	0.40	26(02,49)	0.29
Florida	6.30	0.07	38(26,45)	-3.70	Ohio	6.94	0.10	13(06,26)	6.08
Georgia	6.14	0.12	44(28,49)	-6.04	Oklahoma	7.90	0.19	01(01,08)	20.83 <sup>c</sup>
Hawaii	4.63	0.24	51(49,51)	-29.13 <sup>c</sup>	Oregon	6.32	0.17	37(19,48)	-3.31
Idaho	6.55	0.28	27(05,48)	0.12	Pennsylvania	6.80	0.09	21(10,29)	3.96
Illinois	6.84	0.10	19(09,28)	4.63	Rhode Island	6.56	0.33	25(03,49)	0.37
Indiana	7.19	0.14	08(02,22)	9.94	South Carolina	6.82	0.16	20(06,34)	4.35
Iowa	6.93	0.19	14(03,34)	6.04	South Dakota	7.47	0.40	03(01,33)	14.15
Kansas	7.42	0.22	05(01,22)	13.50	Tennessee	7.02	0.14	12(03,27)	7.29
Kentucky	7.42	0.18	04(01,16)	13.52	Texas	6.40	0.07	30(23,42)	-2.15
Louisiana	6.77	0.17	23(06,37)	3.56	Utah	6.79	0.24	22(03,46)	3.87
Maine	6.38	0.27	32(09,49)	-2.40	Vermont	6.36	0.41	33(03,50)	-2.77
Maryland	6.33	0.14	35(21,48)	-3.23	Virginia	6.11	0.12	46(28,49)	-6.61
Massachusetts	6.22	0.13	39(25,48)	-4.82	Washington	6.40	0.13	29(20,47)	-2.09
Michigan	6.85	0.11	18(08,29)	4.76	West Virginia	7.49	0.25	02(01,23)	14.49
Minnesota	6.91	0.15	16(04,30)	5.64	Wisconsin	7.27	0.15	06(02,19)	11.10
Mississippi	6.92	0.21	15(03,37)	5.80	Wyoming	7.21	0.49	07(01,48)	10.28
Missouri	7.11	0.14	11(03,24)	8.74					



<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.

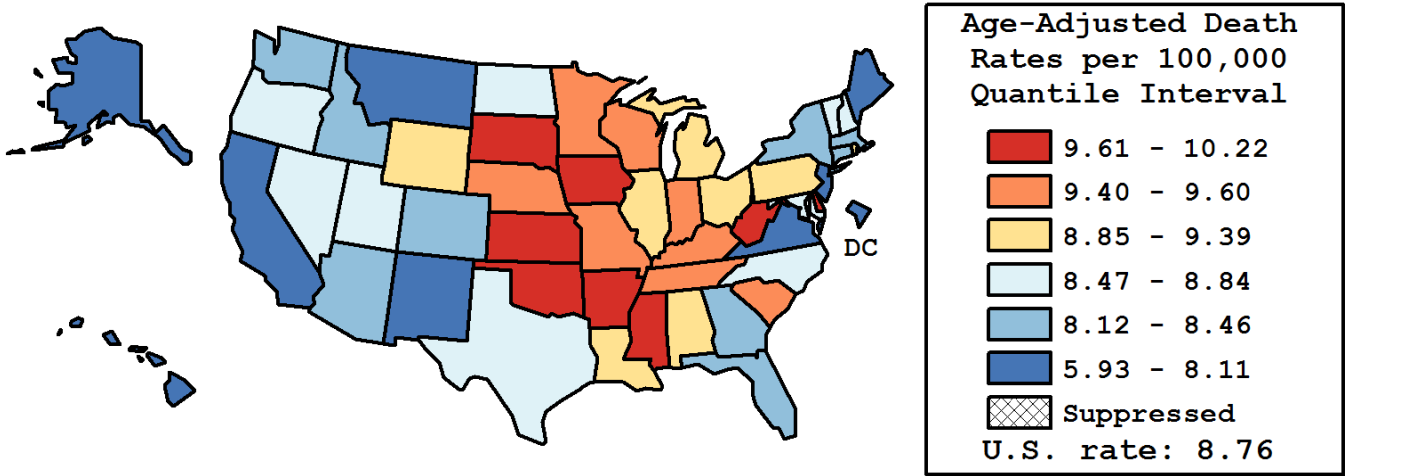
Table 13.27  
Leukemia

Age-Adjusted Cancer Death<sup>a</sup> Rates By State, All Races, 2012-2016

Males

State	Rate	SE	Rank(CI) <sup>d</sup>	PD
TOTAL U.S.	8.76	0.03		
High Five States				
Oklahoma	10.22	0.34	01(01,20)	16.69 <sup>c</sup>
Kansas	10.18	0.39	02(01,23)	16.25 <sup>c</sup>
Arkansas	9.91	0.37	03(01,27)	13.09
South Dakota	9.85	0.68	04(01,47)	12.49
Delaware	9.84	0.65	05(01,44)	12.36
Low Five States				
Montana	7.95	0.53	47(11,50)	-9.21
New Mexico	7.59	0.39	48(26,50)	-13.36
Alaska	7.11	0.81	49(08,51)	-18.87 <sup>c</sup>
D.C.	7.04	0.78	50(10,51)	-19.59 <sup>c</sup>
Hawaii	5.93	0.40	51(49,51)	-32.28 <sup>c</sup>

State	Rate	SE	Rank(CI) <sup>d</sup>	PD	State	Rate	SE	Rank(CI) <sup>d</sup>	PD
Alabama	9.39	0.29	17(02,33)	7.25	Montana	7.95	0.53	47(11,50)	-9.21
Alaska	7.11	0.81	49(08,51)	-18.87 <sup>c</sup>	Nebraska	9.58	0.46	12(01,41)	9.35
Arizona	8.27	0.22	41(24,49)	-5.55	Nevada	8.58	0.37	33(08,49)	-2.10
Arkansas	9.91	0.37	03(01,27)	13.09	New Hampshire	8.84	0.51	25(01,49)	0.88
California	8.11	0.10	43(33,48)	-7.38	New Jersey	8.10	0.20	44(27,49)	-7.47
Colorado	8.34	0.28	39(20,49)	-4.84	New Mexico	7.59	0.39	48(26,50)	-13.36
Connecticut	8.37	0.31	37(15,49)	-4.41	New York	8.42	0.13	35(25,46)	-3.87
Delaware	9.84	0.65	05(01,44)	12.36	North Carolina	8.63	0.20	31(19,45)	-1.49
D.C.	7.04	0.78	50(10,51)	-19.59 <sup>c</sup>	North Dakota	8.73	0.70	27(01,50)	-0.30
Florida	8.39	0.12	36(26,45)	-4.22	Ohio	9.31	0.18	19(05,29)	6.27
Georgia	8.17	0.21	42(26,49)	-6.77	Oklahoma	10.22	0.34	01(01,20)	16.69 <sup>c</sup>
Hawaii	5.93	0.40	51(49,51)	-32.28 <sup>c</sup>	Oregon	8.66	0.29	29(11,47)	-1.12
Idaho	8.46	0.47	34(05,50)	-3.39	Pennsylvania	9.12	0.16	21(09,31)	4.16
Illinois	9.28	0.18	20(05,29)	5.94	Rhode Island	9.11	0.59	22(01,49)	4.00
Indiana	9.60	0.25	11(01,27)	9.59	South Carolina	9.51	0.29	13(01,31)	8.53
Iowa	9.61	0.35	08(01,31)	9.69	South Dakota	9.85	0.68	04(01,47)	12.49
Kansas	10.18	0.39	02(01,23)	16.25 <sup>c</sup>	Tennessee	9.60	0.25	10(01,27)	9.59
Kentucky	9.49	0.31	15(01,33)	8.32	Texas	8.70	0.13	28(21,39)	-0.69
Louisiana	9.06	0.30	23(04,42)	3.42	Utah	8.65	0.41	30(05,49)	-1.22
Maine	8.03	0.46	46(14,50)	-8.36	Vermont	8.74	0.74	26(01,50)	-0.26
Maryland	8.61	0.26	32(14,47)	-1.76	Virginia	8.09	0.21	45(26,50)	-7.70
Massachusetts	8.30	0.23	40(23,49)	-5.29	Washington	8.35	0.23	38(22,48)	-4.63
Michigan	9.37	0.20	18(04,28)	7.02	West Virginia	9.72	0.44	06(01,35)	10.95
Minnesota	9.48	0.27	16(02,29)	8.26	Wisconsin	9.60	0.26	09(01,27)	9.61
Mississippi	9.70	0.39	07(01,32)	10.77	Wyoming	8.85	0.81	24(01,50)	1.02
Missouri	9.51	0.25	14(02,28)	8.52					



<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.

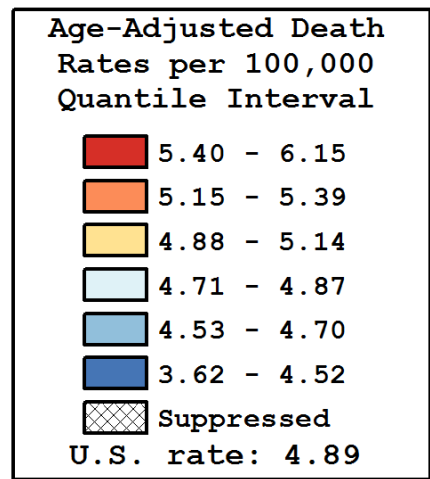
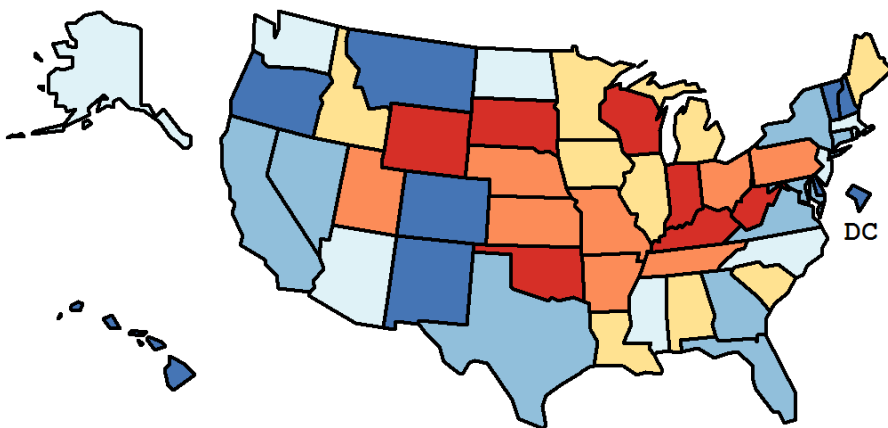
Table 13.28  
Leukemia

Age-Adjusted Cancer Death<sup>a</sup> Rates By State, All Races, 2012-2016

Females

State	Rate	SE	Rank(CI) <sup>d</sup>	PD
TOTAL U.S.	4.89	0.02		
High Five States				
Oklahoma	6.15	0.23	01(01,08)	25.84 <sup>c</sup>
Wyoming	5.96	0.60	02(01,47)	21.94 <sup>c</sup>
Kentucky	5.92	0.21	03(01,11)	21.26 <sup>c</sup>
West Virginia	5.76	0.30	04(01,26)	17.92 <sup>c</sup>
South Dakota	5.64	0.47	05(01,45)	15.51 <sup>c</sup>
Low Five States				
Colorado	4.41	0.18	47(22,50)	-9.72
Delaware	4.28	0.37	48(07,51)	-12.47
New Mexico	4.00	0.25	49(31,51)	-18.03 <sup>c</sup>
D.C.	3.81	0.46	50(12,51)	-22.03 <sup>c</sup>
Hawaii	3.62	0.29	51(41,51)	-25.98 <sup>c</sup>

State	Rate	SE	Rank(CI) <sup>d</sup>	PD	State	Rate	SE	Rank(CI) <sup>d</sup>	PD
Alabama	5.12	0.19	18(04,40)	4.83	Montana	4.52	0.37	43(05,51)	-7.45
Alaska	4.85	0.62	27(01,51)	-0.73	Nebraska	5.31	0.30	10(01,44)	8.64
Arizona	4.73	0.15	31(13,47)	-3.08	Nevada	4.55	0.25	42(11,50)	-6.95
Arkansas	5.16	0.24	15(03,44)	5.54	New Hampshire	4.49	0.33	45(06,51)	-8.07
California	4.70	0.07	34(23,45)	-3.83	New Jersey	4.78	0.13	30(13,46)	-2.23
Colorado	4.41	0.18	47(22,50)	-9.72	New Mexico	4.00	0.25	49(31,51)	-18.03 <sup>c</sup>
Connecticut	4.65	0.20	40(12,49)	-4.87	New York	4.66	0.09	38(22,46)	-4.56
Delaware	4.28	0.37	48(07,51)	-12.47	North Carolina	4.71	0.12	32(17,47)	-3.50
D.C.	3.81	0.46	50(12,51)	-22.03 <sup>c</sup>	North Dakota	4.79	0.46	28(01,51)	-1.89
Florida	4.60	0.08	41(26,47)	-5.82	Ohio	5.20	0.12	12(05,29)	6.53
Georgia	4.67	0.13	37(17,47)	-4.33	Oklahoma	6.15	0.23	01(01,08)	25.84 <sup>c</sup>
Hawaii	3.62	0.29	51(41,51)	-25.98 <sup>c</sup>	Oregon	4.49	0.19	44(18,50)	-7.99
Idaho	4.97	0.33	22(02,49)	1.74	Pennsylvania	5.16	0.11	14(06,29)	5.56
Illinois	5.14	0.11	16(06,31)	5.26	Rhode Island	4.71	0.37	33(03,51)	-3.63
Indiana	5.40	0.17	07(02,26)	10.52	South Carolina	4.95	0.18	23(06,45)	1.33
Iowa	4.98	0.22	20(05,47)	2.00	South Dakota	5.64	0.47	05(01,45)	15.51 <sup>c</sup>
Kansas	5.39	0.25	08(01,37)	10.32	Tennessee	5.17	0.16	13(04,35)	5.90
Kentucky	5.92	0.21	03(01,11)	21.26 <sup>c</sup>	Texas	4.67	0.08	36(22,46)	-4.31
Louisiana	5.14	0.20	17(04,42)	5.20	Utah	5.26	0.29	11(01,46)	7.78
Maine	5.08	0.32	19(02,48)	4.03	Vermont	4.44	0.45	46(03,51)	-9.06
Maryland	4.70	0.16	35(14,48)	-3.89	Virginia	4.65	0.14	39(18,48)	-4.74
Massachusetts	4.78	0.15	29(12,47)	-2.20	Washington	4.87	0.16	25(09,46)	-0.22
Michigan	4.98	0.13	21(09,39)	1.92	West Virginia	5.76	0.30	04(01,26)	17.92 <sup>c</sup>
Minnesota	4.94	0.17	24(07,45)	1.21	Wisconsin	5.45	0.17	06(02,25)	11.62
Mississippi	4.85	0.23	26(05,48)	-0.67	Wyoming	5.96	0.60	02(01,47)	21.94 <sup>c</sup>
Missouri	5.35	0.17	09(03,27)	9.53					



<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 13.29  
LeukemiaEstimated United States Cancer Prevalence Counts<sup>a</sup> on January 1, 2016  
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 <24	0 to <24 <sup>b</sup>	>=24 <sup>d</sup>	Complete <sup>e</sup>
<u>Race</u>	<u>Sex</u>								
All Races	Both Sexes	153,253	100,309	63,581	38,012	21,353	376,508	38,265	414,773
	Males	90,192	57,683	36,029	21,220	12,020	217,145	18,411	235,556
	Females	63,061	42,625	27,552	16,792	9,333	159,363	19,854	179,217
White	Both Sexes	132,173	87,961	56,051	33,596	19,035	328,814	32,999	370,135
	Males	78,368	50,894	32,033	18,770	10,845	190,910	15,102	210,930
	Females	53,805	37,067	24,018	14,826	8,190	137,905	17,897	159,205
Black	Both Sexes	12,734	6,564	4,233	2,487	1,259	27,277	4,070	31,347
	Males	6,847	3,556	2,204	1,334	637	14,578	1,776	16,354
	Females	5,887	3,008	2,029	1,153	622	12,699	2,294	14,992
Asian/ Pacific Islander	Both Sexes	3,926	2,561	1,778	1,164	690	10,120	+	+
	Males	2,235	1,462	936	646	351	5,630	+	+
	Females	1,691	1,100	842	519	339	4,490	+	+
Hispanic	Both Sexes	14,464	9,581	6,796	4,462	2,630	37,933	+	+
	Males	8,166	5,374	3,794	2,408	1,538	21,280	+	+
	Females	6,298	4,207	3,002	2,055	1,092	16,654	+	+

Estimated prevalence percent<sup>a</sup> on January 1, 2016, of the SEER population diagnosed in the previous 24 years  
By Age at Prevalence, Race/Ethnicity and Sex

Age at Prevalence		Age Specific (Crude)									Age-Adjusted <sup>c</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	Both Sexes	0.1168	0.0328	0.0640	0.0628	0.0377	0.0561	0.1053	0.2263	0.4023	0.5111	0.1054
	Males	0.1369	0.0339	0.0706	0.0685	0.0419	0.0657	0.1287	0.2888	0.5282	0.7048	0.1306
	Females	0.0974	0.0317	0.0572	0.0570	0.0333	0.0466	0.0829	0.1696	0.2974	0.3919	0.0844
White	Both Sexes	0.1304	0.0369	0.0715	0.0712	0.0410	0.0584	0.1106	0.2389	0.4249	0.5386	0.1127
	Males	0.1528	0.0379	0.0789	0.0771	0.0457	0.0682	0.1349	0.3042	0.5558	0.7387	0.1389
	Females	0.1084	0.0359	0.0637	0.0650	0.0362	0.0484	0.0869	0.1784	0.3135	0.4133	0.0904
Black	Both Sexes	0.0605	0.0145	0.0322	0.0320	0.0267	0.0463	0.0752	0.1455	0.2470	0.3076	0.0660
	Males	0.0674	0.0142	0.0357	0.0338	0.0281	0.0530	0.0919	0.1737	0.3249	0.4580	0.0816
	Females	0.0541	0.0148	0.0286	0.0301	0.0255	0.0402	0.0605	0.1230	0.1927	0.2334	0.0552
Asian/ Pacific Islander	Both Sexes	0.0497	0.0264	0.0531	0.0426	0.0230	0.0390	0.0553	0.0882	0.1245	0.1389	0.0513
	Males	0.0577	0.0298	0.0555	0.0507	0.0249	0.0461	0.0665	0.1122	0.1552	0.1904	0.0613
	Females	0.0423	0.0228	0.0507	0.0345	0.0212	0.0327	0.0456	0.0688	0.0999	0.1057	0.0430
Hispanic	Both Sexes	0.0664	0.0375	0.0737	0.0728	0.0395	0.0485	0.0723	0.1191	0.1987	0.2074	0.0746
	Males	0.0737	0.0397	0.0827	0.0807	0.0471	0.0576	0.0831	0.1350	0.2221	0.2551	0.0854
	Females	0.0589	0.0352	0.0642	0.0641	0.0312	0.0391	0.0617	0.1050	0.1809	0.1780	0.0647

<sup>a</sup> US 2016 cancer prevalence counts are based on 2016 cancer prevalence proportions from the SEER 13 Areas (excluding the Alaska Native Registry) and 1/1/2016 US population estimates based on the average of 2015 and 2016 population estimates from the US Bureau of the Census.

<sup>b</sup> Prevalence was calculated using the first invasive tumor for each cancer site diagnosed during the previous 24 years. Maximum limited-duration prevalence is 24 years for 1992-2016 data.

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

<sup>d</sup> Cases diagnosed more than 24 years ago were estimated using the completeness index method (Capocaccia et. al. 1997, Merrill et. al. 2000).

<sup>e</sup> Complete prevalence is obtained by summing 0 to <24 and >=24.

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

+ Not available.

Table 13.30  
Acute Lymphocytic Leukemia

Estimated United States Cancer Prevalence Counts<sup>a</sup> on January 1, 2016  
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 <24	0 to <24 <sup>b</sup>	>=24 <sup>d</sup>	Complete <sup>e</sup>
<u>Race</u>	<u>Sex</u>								
All Races	Both Sexes	20,277	16,033	13,721	12,074	8,203	70,308	25,456	95,764
	Males	11,203	9,049	7,751	6,542	4,634	39,179	12,997	52,176
	Females	9,074	6,984	5,971	5,531	3,568	31,129	12,460	43,589
White	Both Sexes	17,123	13,855	11,870	10,663	7,154	60,665	21,823	83,282
	Males	9,549	7,741	6,768	5,696	4,084	33,839	11,286	45,559
	Females	7,573	6,114	5,102	4,967	3,070	26,826	10,537	37,723
Black	Both Sexes	1,590	1,133	923	727	553	4,926	1,609	6,535
	Males	809	734	473	411	290	2,716	592	3,308
	Females	781	399	450	317	263	2,210	1,017	3,227
Asian/ Pacific Islander	Both Sexes	998	720	669	486	361	3,234	+	+
	Males	527	406	369	313	178	1,793	+	+
	Females	472	314	300	173	183	1,441	+	+
Hispanic	Both Sexes	5,905	4,543	3,352	2,717	1,749	18,266	+	+
	Males	3,302	2,686	1,899	1,465	1,058	10,409	+	+
	Females	2,603	1,857	1,454	1,252	692	7,857	+	+

Estimated prevalence percent<sup>a</sup> on January 1, 2016, of the SEER population diagnosed in the previous 24 years  
By Age at Prevalence, Race/Ethnicity and Sex

Age at Prevalence		Age Specific (Crude)										Age-Adjusted <sup>c</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	Both Sexes	0.0218	0.0276	0.0541	0.0467	0.0139	0.0078	0.0059	0.0065	0.0053	0.0033	0.0228
	Males	0.0247	0.0286	0.0591	0.0520	0.0163	0.0095	0.0066	0.0069	0.0056	0.0035	0.0251
	Females	0.0190	0.0266	0.0488	0.0410	0.0115	0.0062	0.0053	0.0062	0.0050	0.0032	0.0204
White	Both Sexes	0.0241	0.0315	0.0612	0.0542	0.0161	0.0086	0.0063	0.0070	0.0056	0.0033	0.0259
	Males	0.0271	0.0323	0.0670	0.0598	0.0186	0.0107	0.0069	0.0074	0.0060	0.0032	0.0284
	Females	0.0211	0.0306	0.0551	0.0482	0.0135	0.0064	0.0057	0.0066	0.0053	0.0033	0.0232
Black	Both Sexes	0.0109	0.0107	0.0250	0.0197	0.0067	0.0042	0.0039	0.0029	0.0012	0.0027	0.0102
	Males	0.0126	0.0112	0.0281	0.0224	0.0079	0.0035	0.0052	0.0026	0.0012	0.0027	0.0112
	Females	0.0094	0.0102	0.0219	0.0171	0.0056	0.0047	0.0028	0.0032	0.0013	0.0027	0.0092
Asian/ Pacific Islander	Both Sexes	0.0159	0.0208	0.0418	0.0289	0.0071	0.0064	0.0045	0.0050	0.0054	0.0036	0.0163
	Males	0.0184	0.0226	0.0427	0.0360	0.0086	0.0069	0.0055	0.0054	0.0033	0.0055	0.0180
	Females	0.0136	0.0190	0.0408	0.0219	0.0058	0.0059	0.0036	0.0047	0.0071	0.0023	0.0146
Hispanic	Both Sexes	0.0320	0.0328	0.0637	0.0574	0.0165	0.0107	0.0093	0.0100	0.0084	0.0012	0.0279
	Males	0.0361	0.0342	0.0710	0.0648	0.0205	0.0131	0.0110	0.0063	0.0072	-	0.0309
	Females	0.0278	0.0312	0.0562	0.0494	0.0122	0.0082	0.0077	0.0133	0.0093	0.0020	0.0246

<sup>a</sup> US 2016 cancer prevalence counts are based on 2016 cancer prevalence proportions from the SEER 13 Areas (excluding the Alaska Native Registry) and 1/1/2016 US population estimates based on the average of 2015 and 2016 population estimates from the US Bureau of the Census.

<sup>b</sup> Prevalence was calculated using the first invasive tumor for each cancer site diagnosed during the previous 24 years. Maximum limited-duration prevalence is 24 years for 1992-2016 data.

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

<sup>d</sup> Cases diagnosed more than 24 years ago were estimated using the completeness index method (Capocaccia et. al. 1997, Merrill et. al. 2000).

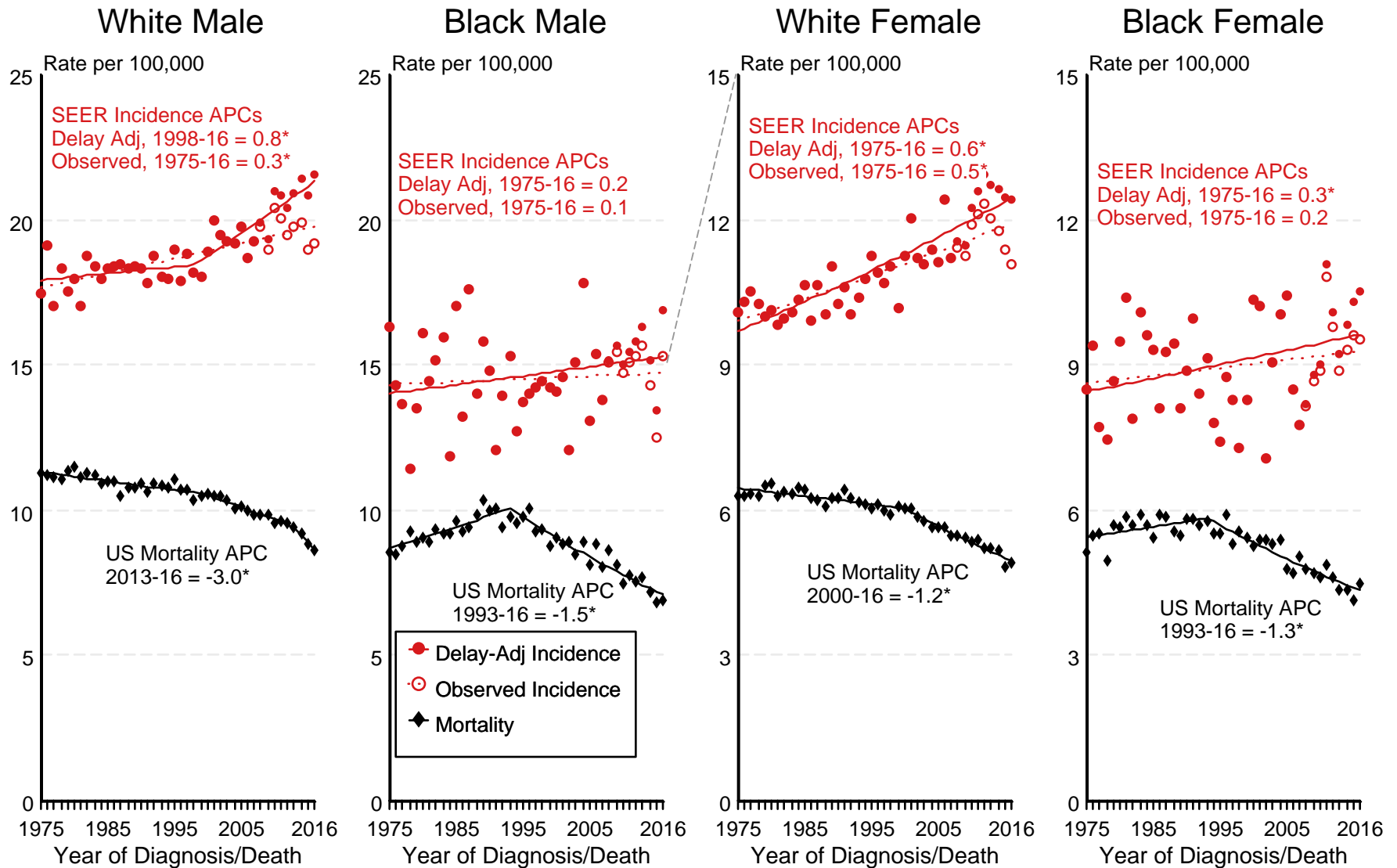
<sup>e</sup> Complete prevalence is obtained by summing 0 to <24 and >=24.

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

+ Not available.

Figure 13.1

# SEER Observed Incidence, SEER Delay Adjusted Incidence and US Death Rates<sup>a</sup> Leukemia, 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).

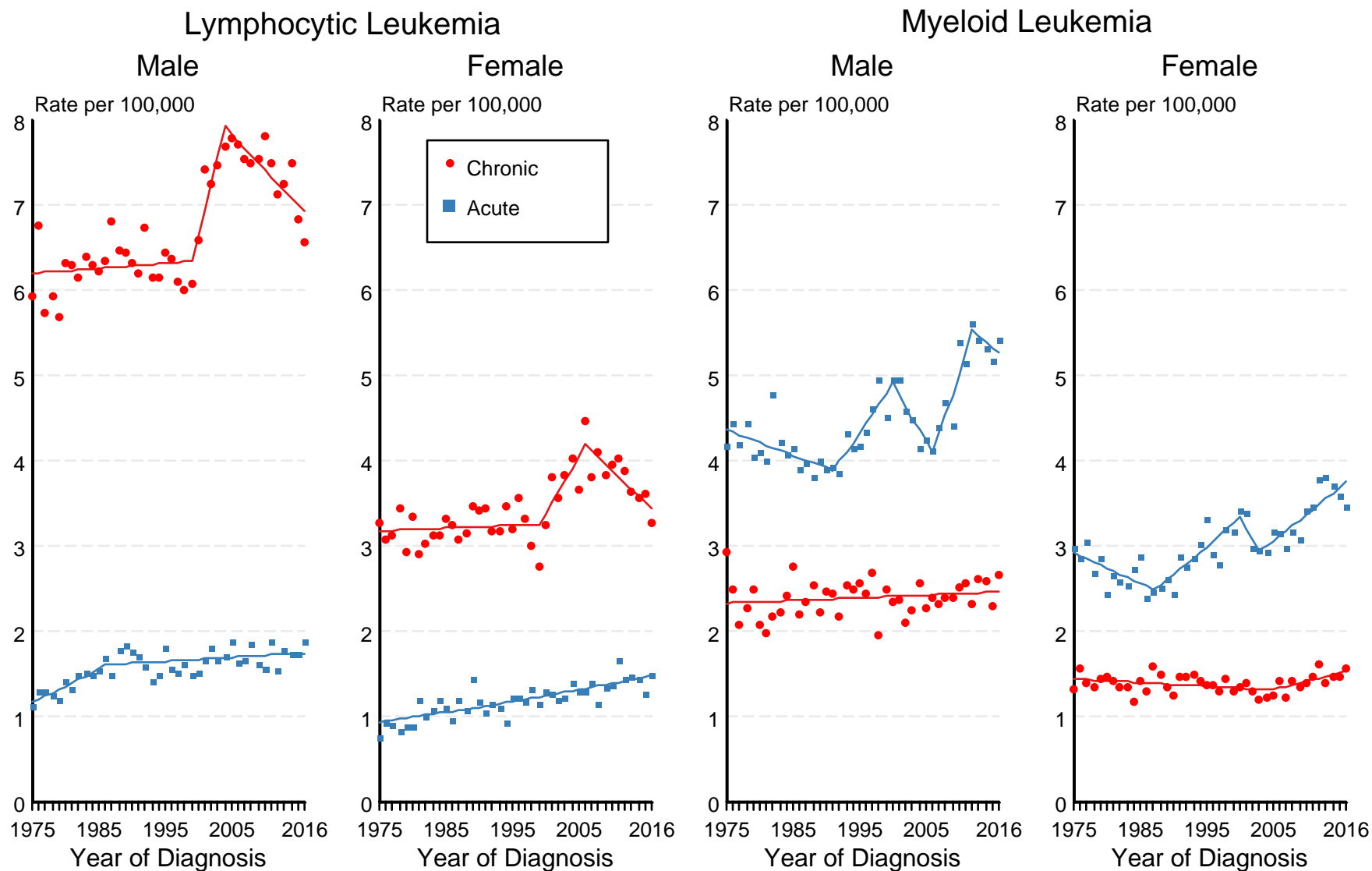
Regression lines and APCs are calculated using the Joinpoint Regression Program Version 4.7, February 2019, National Cancer Institute.

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 13.2

# SEER Observed Incidence Rates<sup>a</sup> Lymphocytic and Myeloid Leukemia (Acute and Chronic), by Sex



Source: SEER 9 areas.

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

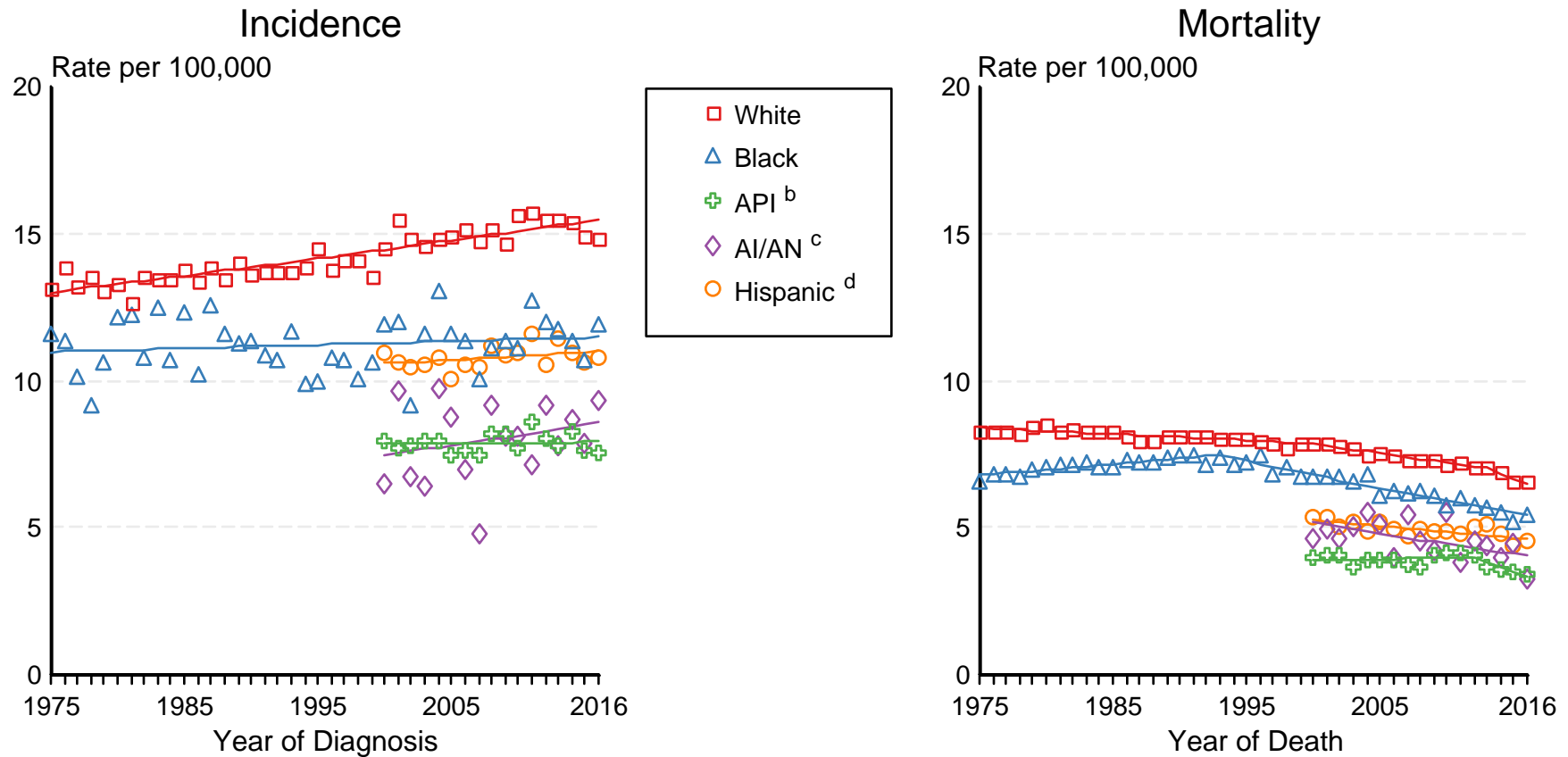
Regression lines and APCs are calculated using the Joinpoint Regression Program Version 4.7, February 2019, National Cancer Institute.



Figure 13.3

# SEER Incidence and US Death Rates<sup>a</sup> Leukemia, Both Sexes

Joinpoint Analyses for Whites and Blacks from 1975-2016  
and for Asian/Pacific Islanders, American Indians/Alaska Natives and Hispanics from 2000-2016



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 21 areas (SEER 9 areas, San Jose-Monterey, Los Angeles, Alaska Native Registry, Rural Georgia, California excluding SF/SJM/LA, Kentucky, Louisiana, New Jersey, Georgia excluding ATL/RG, Idaho, New York and Massachusetts).

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 4.7, February 2019, National Cancer Institute. Joinpoint analyses for Whites and Blacks during the 1975-2016 period allow a maximum of 5 joinpoints. Analyses for other ethnic groups during the period 2000-2016 allow a maximum of 3 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 Purchased/Referred Care Delivery Area (PRCDA) 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.