

Section 28
Childhood Cancer by Site
Incidence, Survival and Mortality

The site groupings used in this section correspond to those used in the rest of the Cancer Statistics Review. While these groupings are not as appropriate for children as they are for adults, they are necessary in order to be able to compare incidence to mortality. Benign brain tumors(2004+) and myelodysplastic syndromes(2001+) are not included.

Childhood cancer is better categorized by groupings based on histologic type and site rather than primary site alone (see section 29 for Childhood Cancer by the International Classification of Childhood Cancer). For the leukemias and lymphomas, the categories are similar, but for solid tumors the categories can be quite different and the different terminology confusing. For example, in this section 'soft tissue' refers to any type of tumor that arises in connective or soft tissue in contrast to 'soft tissue sarcomas' in the other section, which refers to soft tissue sarcomas in any primary site.

Rates are presented per 100,000 children in this section. In contrast in the other childhood cancer section rates are presented per million children.

Table 28.1

Age-Adjusted SEER Cancer Incidence^a and U.S. Death^b Rates, 2009-2013

By Primary Cancer Site

All Races, Males and Females

Site	Ages 0-14						Ages 0-19					
	Incidence			Mortality			Incidence			Mortality		
	Total	Males	Females									
All Sites												
All Races	16.1	16.9	15.3	2.2	2.3	2.0	17.6	18.4	16.9	2.3	2.6	2.1
Whites	17.0	17.8	16.2	2.2	2.4	2.1	18.8	19.6	17.9	2.4	2.6	2.2
Blacks	13.2	13.5	12.9	2.0	2.1	2.0	13.5	13.8	13.3	2.2	2.3	2.1
Bone & Joint	0.8	0.8	0.7	0.1	0.1	0.1	0.9	1.0	0.8	0.2	0.2	0.2
Brain & Other nervous	3.4	3.5	3.3	0.7	0.8	0.7	3.1	3.2	3.0	0.7	0.7	0.6
Hodgkin lymphoma	0.6	0.7	0.4	0.0	-	-	1.2	1.3	1.1	0.0	0.0	0.0
Kidney & Renal pelvis	0.8	0.8	0.9	0.1	0.1	0.1	0.7	0.6	0.7	0.1	0.1	0.1
Leukemia	5.3	5.6	4.9	0.6	0.6	0.6	4.7	5.1	4.3	0.6	0.7	0.6
Acute lymphocytic	4.1	4.4	3.9	0.3	0.3	0.2	3.5	3.8	3.2	0.3	0.3	0.2
Non-Hodgkin lymphoma	1.0	1.4	0.7	0.1	0.1	0.0	1.2	1.6	0.8	0.1	0.1	0.1
Soft tissue	1.1	1.0	1.1	0.2	0.2	0.2	1.1	1.1	1.1	0.2	0.2	0.2

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

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).

^b US Mortality Files, National Center for Health Statistics, Centers for Disease Control and Prevention.

- Statistic could not be calculated. Rate based on less than 16 cases for the time interval.

Table 28.2

Age-Adjusted SEER Cancer Incidence Rates^a, 1975-2013

By Primary Cancer Site

All Races, Males and Females

Year of Diagnosis

Age/Site	1975	1980	1985	1990	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
<u>Ages 0-14</u>																							
All Sites																							
All Races	11.6	12.9	14.6	14.3	14.1	14.8	14.1	15.3	14.5	15.4	15.8	15.6	13.2	15.3	16.8	14.5	14.8	15.8	16.1	16.6	16.0	15.7	15.5
Whites	12.1	13.2	15.6	14.4	14.9	15.0	14.7	16.1	15.6	16.7	17.1	17.0	14.0	16.2	17.7	15.3	15.7	16.2	16.8	17.4	17.0	16.1	16.1
Blacks	8.6	11.1	10.2	12.3	11.8	11.6	11.2	10.3	10.7	12.1	11.0	11.6	10.3	13.3	13.0	11.7	12.0	15.3	13.2	13.3	13.0	15.7	12.0
Bone & Joint	0.5	0.7	0.8	0.7	0.8	0.5	0.9	0.6	0.6	0.6	0.6	0.7	0.5	0.6	0.6	0.6	0.6	0.7	0.9	0.7	0.7	0.8	0.7
Brain & Other nervous	2.3	2.8	3.0	3.5	3.4	3.2	2.8	3.2	3.5	3.4	4.0	3.8	3.0	3.3	3.4	3.1	3.4	3.6	3.8	4.1	3.4	3.1	3.5
Hodgkin lymphoma	0.7	0.5	0.7	0.7	-	0.6	0.6	0.6	0.4	0.6	0.5	0.5	0.4	0.5	0.5	0.6	0.6	0.7	0.6	0.5	0.6	0.7	0.6
Kidney & Renal pelvis	0.7	0.8	0.9	0.8	0.6	1.0	1.0	1.0	0.7	1.0	0.9	0.9	0.7	0.7	0.9	0.6	0.7	1.0	0.8	0.9	0.9	0.6	0.9
Leukemia	3.3	4.0	4.6	4.5	4.5	4.7	4.3	4.8	4.7	4.6	4.4	4.8	4.1	5.0	5.4	4.6	4.2	4.8	4.8	5.0	5.2	4.8	4.8
Acute lymphocytic	2.2	3.1	3.5	3.5	3.7	3.6	3.5	3.9	3.6	3.5	3.5	4.0	3.2	3.8	4.1	3.5	3.6	3.6	3.9	3.9	4.3	3.7	3.9
Non-Hodgkin lymphoma	1.0	0.7	0.7	0.8	0.9	0.6	0.9	0.9	0.8	1.0	1.0	1.0	0.9	0.8	1.1	0.9	1.0	1.1	1.1	1.3	0.9	1.4	1.0
Soft tissue	0.9	0.9	0.9	0.7	1.0	1.1	1.0	1.1	0.9	1.0	1.2	1.0	0.8	1.0	1.5	0.9	1.1	0.9	1.0	1.0	1.1	1.3	1.0
<u>Ages 0-19</u>																							
All Sites																							
All Races	13.0	14.4	16.0	15.7	15.8	16.2	15.8	16.3	15.7	16.9	17.1	17.6	15.7	16.5	17.9	15.7	17.0	17.6	17.8	17.7	18.2	17.7	17.3
Whites	13.4	14.9	17.1	16.0	16.7	16.6	16.9	17.3	16.7	18.3	18.5	19.5	16.8	17.8	19.2	16.7	18.3	18.4	19.1	18.5	19.9	18.5	18.1
Blacks	10.8	10.9	10.6	13.3	12.4	12.6	11.1	11.5	11.4	12.9	11.7	11.4	11.7	13.2	13.2	12.4	13.0	15.2	13.1	14.3	13.2	15.8	13.3
Bone & Joint	0.7	0.9	1.0	0.8	0.9	0.7	1.2	0.8	0.7	0.8	0.9	1.0	0.8	0.7	0.9	0.9	0.8	1.0	1.1	0.7	0.9	1.0	0.9
Brain & Other nervous	2.1	2.5	2.7	3.2	3.1	3.0	2.6	2.8	3.0	3.1	3.5	3.4	2.9	3.0	3.0	2.8	3.1	3.2	3.3	3.6	3.1	2.9	3.3
Hodgkin lymphoma	1.5	1.2	1.4	1.3	0.9	1.4	1.3	1.4	1.1	1.2	1.1	1.2	1.0	1.1	0.9	1.1	1.4	1.4	1.3	1.3	1.3	1.5	1.1
Kidney & Renal pelvis	0.5	0.6	0.7	0.6	0.5	0.7	0.8	0.8	0.6	0.8	0.7	0.7	0.6	0.6	0.8	0.5	0.6	0.9	0.7	0.7	0.7	0.5	0.7
Leukemia	3.0	3.5	4.0	3.9	4.0	4.0	3.7	4.1	4.1	4.1	4.0	4.5	3.8	4.4	4.7	4.1	4.0	4.2	4.1	4.3	4.6	4.2	4.3
Acute lymphocytic	1.9	2.5	2.9	2.9	3.1	2.9	2.9	3.3	3.0	3.1	2.9	3.5	2.9	3.3	3.4	3.0	3.2	3.1	3.1	3.2	3.7	3.0	3.2
Non-Hodgkin lymphoma	1.0	0.8	1.0	1.0	1.1	1.0	1.1	1.0	0.9	1.3	1.1	1.2	1.3	1.1	1.3	1.2	1.3	1.3	1.4	1.5	1.1	1.4	1.2
Soft tissue	0.8	0.9	0.9	0.8	1.1	1.1	1.1	1.1	1.0	1.2	1.1	1.0	0.8	1.0	1.5	1.0	1.1	0.9	1.0	0.9	1.2	1.2	1.0

^a 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 could not be calculated. Rate based on less than 16 cases for the time interval.

Table 28.3

Age-Adjusted Cancer U.S. Death Rates^a, 1975-2013

By Primary Cancer Site

All Races, Males and Females

Year of Death

Age/Site	1975	1980	1985	1990	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
<u>Ages 0-14</u>																							
All Sites	4.9	4.3	3.6	3.1	2.7	2.6	2.6	2.4	2.5	2.5	2.5	2.6	2.5	2.5	2.4	2.2	2.3	2.2	2.2	2.2	2.1	2.2	2.1
Bone & Joint	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Brain & Other nervous	1.0	0.9	0.8	0.9	0.7	0.8	0.7	0.7	0.7	0.7	0.7	0.8	0.8	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.8	0.7
Hodgkin lymphoma	0.0	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Kidney & Renal pelvis	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1
Leukemia	2.1	1.7	1.4	1.1	1.0	0.9	0.9	0.8	0.8	0.8	0.8	0.7	0.8	0.8	0.7	0.7	0.7	0.7	0.6	0.6	0.6	0.6	0.6
Acute lymphocytic	1.2	0.9	0.8	0.5	0.5	0.4	0.4	0.4	0.3	0.4	0.3	0.4	0.4	0.3	0.3	0.3	0.4	0.3	0.3	0.3	0.3	0.2	0.2
Non-Hodgkin lymphoma	0.4	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0
Soft tissue	0.1	0.2	0.1	0.2	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.2	0.2
<u>Ages 0-19</u>																							
All Sites	5.1	4.6	3.8	3.4	3.0	2.9	2.9	2.7	2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.5	2.5	2.4	2.3	2.3	2.3	2.4	2.3
Bone & Joint	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Brain & Other nervous	0.9	0.8	0.8	0.8	0.7	0.7	0.7	0.7	0.7	0.7	0.6	0.7	0.7	0.7	0.7	0.6	0.6	0.6	0.6	0.6	0.7	0.7	0.7
Hodgkin lymphoma	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-	0.0	-	0.0	-	-
Kidney & Renal pelvis	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1
Leukemia	2.0	1.8	1.4	1.2	1.0	0.9	1.0	0.8	0.8	0.9	0.9	0.8	0.8	0.8	0.8	0.7	0.8	0.7	0.7	0.7	0.6	0.6	0.6
Acute lymphocytic	1.0	0.9	0.7	0.6	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.4	0.3	0.3	0.3	0.3	0.3	0.2
Non-Hodgkin lymphoma	0.4	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Soft tissue	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2

^a 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 could not be calculated. Rate based on less than 16 cases for the time interval.

Table 28.4

Age-Adjusted Cancer U.S. Death Rates^a, 1975-2013

By Primary Cancer Site

Whites, Males and Females

Year of Death

Age/Site	1975	1980	1985	1990	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
<u>Ages 0-14</u>																							
All Sites	5.0	4.4	3.7	3.2	2.7	2.7	2.7	2.5	2.5	2.6	2.5	2.6	2.6	2.5	2.5	2.3	2.4	2.3	2.2	2.2	2.2	2.3	2.2
Bone & Joint	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Brain & Other nervous	1.0	0.9	0.9	0.9	0.7	0.8	0.8	0.7	0.7	0.8	0.7	0.8	0.8	0.8	0.7	0.7	0.8	0.8	0.7	0.7	0.7	0.8	0.8
Hodgkin lymphoma	0.0	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Kidney & Renal pelvis	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1
Leukemia	2.3	1.8	1.4	1.1	1.0	0.9	0.9	0.8	0.8	0.9	0.8	0.8	0.9	0.8	0.7	0.7	0.8	0.7	0.7	0.7	0.6	0.6	0.6
Acute lymphocytic	1.2	1.0	0.8	0.5	0.5	0.4	0.4	0.4	0.3	0.4	0.4	0.4	0.5	0.4	0.3	0.3	0.4	0.3	0.3	0.3	0.3	0.3	0.2
Non-Hodgkin lymphoma	0.3	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0
Soft tissue	0.1	0.2	0.2	0.2	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.2	0.1	0.2	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.2	0.2
<u>Ages 0-19</u>																							
All Sites	5.3	4.7	3.9	3.5	2.9	2.9	2.9	2.8	2.8	2.9	2.8	2.8	2.8	2.8	2.7	2.5	2.6	2.5	2.4	2.3	2.4	2.5	2.4
Bone & Joint	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Brain & Other nervous	0.9	0.8	0.8	0.8	0.7	0.8	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.6	0.7	0.7	0.7
Hodgkin lymphoma	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-	-	0.0	-	-	-	-
Kidney & Renal pelvis	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.0	0.1
Leukemia	2.1	1.8	1.4	1.2	1.0	1.0	1.0	0.9	0.9	0.9	0.9	0.9	0.9	0.8	0.8	0.8	0.8	0.7	0.7	0.7	0.7	0.7	0.6
Acute lymphocytic	1.1	1.0	0.7	0.6	0.5	0.4	0.5	0.4	0.4	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.2
Non-Hodgkin lymphoma	0.4	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Soft tissue	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2

^a 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 could not be calculated. Rate based on less than 16 cases for the time interval.

Table 28.5

Age-Adjusted Cancer U.S. Death Rates^a, 1975-2013

By Primary Cancer Site

Blacks, Males and Females

Year of Death

Age/Site	1975	1980	1985	1990	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
<u>Ages 0-14</u>																							
All Sites	4.5	3.8	3.3	3.0	2.9	2.5	2.5	2.4	2.5	2.3	2.3	2.6	2.4	2.4	2.5	2.2	2.1	2.2	2.0	2.0	2.0	2.2	1.9
Bone & Joint	0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	0.2	-	-	-	-	-	-	-	-
Brain & Other nervous	0.9	0.9	0.6	0.7	0.8	0.7	0.6	0.7	0.7	0.7	0.5	0.8	0.7	0.7	0.7	0.7	0.5	0.6	0.6	0.6	0.7	0.7	0.6
Hodgkin lymphoma	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Kidney & Renal pelvis	-	-	0.2	-	-	-	0.2	-	-	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-
Leukemia	1.6	1.2	1.2	0.9	1.0	0.8	0.7	0.7	0.7	0.5	0.8	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.5	0.5	0.4	0.6	0.5
Acute lymphocytic	0.8	0.6	0.7	0.5	0.4	0.4	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	-	0.2	0.2	0.2
Non-Hodgkin lymphoma	0.4	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Soft tissue	-	-	-	0.3	-	-	0.2	0.2	0.2	-	0.2	0.2	-	0.2	-	-	-	0.2	0.2	-	-	0.2	0.2
<u>Ages 0-19</u>																							
All Sites	4.8	4.2	3.5	3.4	3.1	2.9	2.9	2.6	3.0	2.8	2.6	2.8	2.5	2.8	2.6	2.4	2.3	2.4	2.3	2.2	2.1	2.3	2.2
Bone & Joint	0.4	0.3	0.2	0.2	0.2	0.2	0.1	0.3	0.2	0.3	0.2	0.2	0.2	0.3	0.2	0.2	0.1	0.1	0.2	0.2	0.2	0.2	0.2
Brain & Other nervous	0.9	0.8	0.6	0.7	0.7	0.7	0.6	0.6	0.7	0.7	0.5	0.8	0.6	0.6	0.6	0.6	0.5	0.5	0.6	0.6	0.7	0.7	0.6
Hodgkin lymphoma	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Kidney & Renal pelvis	0.2	-	0.2	-	-	-	0.1	0.1	-	0.1	0.2	-	-	-	-	-	-	-	-	0.1	-	-	-
Leukemia	1.6	1.4	1.1	1.0	1.1	0.8	0.8	0.7	0.8	0.8	0.8	0.7	0.6	0.7	0.7	0.7	0.7	0.7	0.5	0.5	0.5	0.5	0.5
Acute lymphocytic	0.7	0.6	0.6	0.5	0.5	0.4	0.3	0.2	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Non-Hodgkin lymphoma	0.4	0.3	0.2	0.2	0.2	0.1	0.2	-	0.2	0.1	0.2	0.2	0.2	0.1	0.1	0.1	-	-	0.1	0.1	-	-	-
Soft tissue	0.2	0.2	0.2	0.3	0.2	0.2	0.3	0.2	0.3	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.2

^a 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 could not be calculated. Rate based on less than 16 cases for the time interval.

Table 28.6

Trends in SEER Incidence^a Using the Joinpoint Regression Program,
1975-2013 With up to Five Joinpoints By Primary Cancer Site And Age At Diagnosis
Males and Females

	JP Trend 1		JP Trend 2		JP Trend 3		JP Trend 4		JP Trend 5		JP Trend 6		AAPC ^b
	Years	APC	Years	APC	Years	APC	Years	APC	Years	APC	Years	APC	2009-13
<u>Ages 0-14</u>													
All Sites													
All Races	1975-13	0.6*											0.6*
White	1975-13	0.7*											0.7*
Black	1975-13	0.7*											0.7*
Bone & Joint	1975-13	0.3											0.3
Brain & Other nervous system	1975-89	2.2*	1989-13	0.3									0.3
Hodgkin lymphoma	1975-13	-0.5*											-0.5*
Kidney & Renal pelvis	1975-13	-0.2											-0.2
Leukemia	1975-13	0.7*											0.7*
Acute lymphocytic leukemia	1975-13	0.8*											0.8*
Non-Hodgkin lymphoma	1975-13	0.9*											0.9*
Soft tissue	1975-13	1.1*											1.1*
<u>Ages 0-19</u>													
All Sites													
All Races	1975-13	0.6*											0.6*
White	1975-13	0.7*											0.7*
Black	1975-02	0.2	2002-13	1.5*									1.5*
Bone & Joint	1975-13	0.2											0.2
Brain & Other nervous system	1975-83	-0.5	1983-86	8.3	1986-13	0.2							0.2
Hodgkin lymphoma	1975-13	-0.6*											-0.6*
Kidney & Renal pelvis	1975-13	-0.1											-0.1
Leukemia	1975-13	0.7*											0.7*
Acute lymphocytic leukemia	1975-13	0.8*											0.8*
Non-Hodgkin lymphoma	1975-13	1.0*											1.0*
Soft tissue	1975-13	1.0*											1.0*

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

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

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

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

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

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

Table 28.7

Trends in U.S. Mortality^a Using the Joinpoint Regression Program,
1975-2013 With up to Five Joinpoints By Primary Cancer Site and Age at Death
All Races, Both Sexes

	JP Trend 1		JP Trend 2		JP Trend 3		JP Trend 4		JP Trend 5		JP Trend 6		AAPC ^b
	Years	APC	Years	APC	Years	APC	Years	APC	Years	APC	Years	APC	2009-13
<u>Ages 0-14</u>													
All Sites	1975-96	-2.9*	1996-13	-1.3*									-1.3*
Bone & Joint	1975-89	-3.5*	1989-13	-0.5									-0.5
Brain & Other nervous system	1975-13	-0.9*											-0.9*
Hodgkin lymphoma	1975-13	-4.9*											-4.9*
Kidney & Renal pelvis	1975-13	-2.7*											-2.7*
Leukemia	1975-90	-4.4*	1990-13	-2.8*									-2.8*
Acute lymphocytic leukemia	1975-93	-5.2*	1993-13	-3.1*									-3.1*
Non-Hodgkin lymphoma	1975-13	-5.0*											-5.0*
Soft tissue	1975-79	11.2*	1979-96	-2.6*	1996-13	0.5							0.5
<u>Ages 0-19</u>													
All Sites	1975-96	-2.7*	1996-13	-1.4*									-1.4*
Bone & Joint	1975-89	-3.1*	1989-13	-0.3									-0.3
Brain & Other nervous system	1975-10	-1.0*	2010-13	4.0									2.7
Hodgkin lymphoma	1975-13	-5.0*											-5.0*
Kidney & Renal pelvis	1975-13	-2.5*											-2.5*
Leukemia	1975-89	-3.9*	1989-92	-0.8	1992-98	-4.9*	1998-01	1.0	2001-13	-3.1*			-3.1*
Acute lymphocytic leukemia	1975-99	-4.4*	1999-02	2.2	2002-13	-4.4*							-4.4*
Non-Hodgkin lymphoma	1975-13	-4.2*											-4.2*
Soft tissue	1975-79	9.0*	1979-10	-1.0*	2010-13	8.9							6.4

Joinpoint Regression Program Version 4.3.0.0, April 2016, National Cancer Institute. (<http://surveillance.cancer.gov/joinpoint/>).
The APC is the Annual Percent Change based on rates age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130).
Trends are from US Mortality Files, National Center for Health Statistics, Centers for Disease Control and Prevention.
The AAPC is the Average Annual Percent Change and is based on the APCs calculated by Joinpoint over the time range of 1975-2013.
* The APC/AAPC is significantly different from zero (p<.05).
- Joinpoint regression line analysis could not be performed on data series.

Table 28.7 - continued

Trends in U.S. Mortality^a Using the Joinpoint Regression Program,
1975-2013 With up to Five Joinpoints By Primary Cancer Site and Age at Death
White, Both Sexes

	JP Trend 1		JP Trend 2		JP Trend 3		JP Trend 4		JP Trend 5		JP Trend 6		AAPC ^b 2009-13
	Years	APC	Years	APC	Years	APC	Years	APC	Years	APC	Years	APC	
<u>Ages 0-14</u>													
All Sites	1975-96	-3.0*	1996-13	-1.2*									-1.2*
Bone & Joint	1975-89	-3.1*	1989-13	-0.5									-0.5
Brain & Other nervous system	1975-13	-0.8*											-0.8*
Hodgkin lymphoma	-	-											-
Kidney & Renal pelvis	1975-13	-2.6*											-2.6*
Leukemia	1975-90	-4.5*	1990-13	-2.8*									-2.8*
Acute lymphocytic leukemia	1975-90	-5.6*	1990-13	-3.1*									-3.1*
Non-Hodgkin lymphoma	1975-13	-5.0*											-5.0*
Soft tissue	1975-79	12.8*	1979-95	-2.8*	1995-13	0.7							0.7
<u>Ages 0-19</u>													
All Sites	1975-96	-2.7*	1996-13	-1.3*									-1.3*
Bone & Joint	1975-89	-2.7*	1989-13	-0.3									-0.3
Brain & Other nervous system	1975-13	-0.9*											-0.9*
Hodgkin lymphoma	1975-13	-5.0*											-5.0*
Kidney & Renal pelvis	1975-13	-2.4*											-2.4*
Leukemia	1975-88	-4.1*	1988-13	-2.7*									-2.7*
Acute lymphocytic leukemia	1975-99	-4.4*	1999-03	2.1	2003-13	-4.9*							-4.9*
Non-Hodgkin lymphoma	1975-13	-4.3*											-4.3*
Soft tissue	1975-79	11.7*	1979-96	-1.7*	1996-13	0.4							0.4

Joinpoint Regression Program Version 4.3.0.0, April 2016, National Cancer Institute. (<http://surveillance.cancer.gov/joinpoint/>).
The APC is the Annual Percent Change based on rates age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130).

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

^b The AAPC is the Average Annual Percent Change and is based on the APCs calculated by Joinpoint over the time range of 1975-2013.

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

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

Table 28.7 - continued

Trends in U.S. Mortality^a Using the Joinpoint Regression Program,
1975-2013 With up to Five Joinpoints By Primary Cancer Site and Age at Death
Black, Both Sexes

	JP Trend 1		JP Trend 2		JP Trend 3		JP Trend 4		JP Trend 5		JP Trend 6		AAPC ^b 2009-13
	Years	APC	Years	APC	Years	APC	Years	APC	Years	APC	Years	APC	
<u>Ages 0-14</u>													
All Sites	1975-96	-2.6*	1996-13	-1.5*									-1.5*
Bone & Joint	1975-13	-1.8*											-1.8*
Brain & Other nervous system	1975-13	-1.0*											-1.0*
Hodgkin lymphoma	-	-											-
Kidney & Renal pelvis	1975-13	-2.7*											-2.7*
Leukemia	1975-13	-3.2*											-3.2*
Acute lymphocytic leukemia	1975-85	-1.1	1985-93	-8.8*	1993-13	-3.3*							-3.3*
Non-Hodgkin lymphoma	1975-13	-4.4*											-4.4*
Soft tissue	1975-13	-1.1*											-1.1*
<u>Ages 0-19</u>													
All Sites	1975-13	-2.1*											-2.1*
Bone & Joint	1975-84	-6.6*	1984-13	-0.4									-0.4
Brain & Other nervous system	1975-13	-1.0*											-1.0*
Hodgkin lymphoma	-	-											-
Kidney & Renal pelvis	1975-13	-2.5*											-2.5*
Leukemia	1975-13	-2.9*											-2.9*
Acute lymphocytic leukemia	1975-13	-4.0*											-4.0*
Non-Hodgkin lymphoma	1975-13	-3.5*											-3.5*
Soft tissue	1975-13	-0.9*											-0.9*

Joinpoint Regression Program Version 4.3.0.0, April 2016, National Cancer Institute. (<http://surveillance.cancer.gov/joinpoint/>).
The APC is the Annual Percent Change based on rates age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130).

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

^b The AAPC is the Average Annual Percent Change and is based on the APCs calculated by Joinpoint over the time range of 1975-2013.

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

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

Table 28.8

5-Year Relative Survival (Percent)
By Selected Primary Cancer Site and Year of Diagnosis
All Races, Males and Females

Site	Ages 0-14										
	1975-1977	1978-1980	1981-1983	1984-1986	1987-1989	1990-1992	1993-1995	1996-1998	1999-2001	2002-2005	2006-2012
All Sites											
All Races	58.0	62.4	67.0	68.1	71.6	75.8	77.4	79.2	80.8	82.6	84.5 ^c
Whites	57.9	63.0	67.7	69.8	72.4	76.8	78.3	80.6	81.8	84.5	85.3 ^c
Blacks	57.3	57.7	62.2	57.0	65.3	70.8	73.3	75.6	73.9	72.7	82.1 ^c
Bone & Joint	49.9 ^d	47.8	56.8 ^d	57.3 ^d	66.8 ^d	67.4	74.1	70.3	70.0	78.4	78.4 ^c
Brain & ONS	56.9	57.7	56.7	61.7	64.3	64.4	70.7	75.2	74.0	75.5	74.7 ^c
Hodgkin lymphoma	80.9	86.8	88.1	89.9	87.1	96.8	94.6	96.1	94.4	97.2	97.7 ^c
Leukemia	49.7	58.0	62.9	63.6	71.0	75.5	75.9	80.3	82.8	85.7	88.0 ^c
Acute lymphocytic	57.2	65.7	71.3	72.2	77.7	83.1	83.9	86.9	88.5	90.8	92.3 ^c
Acute myeloid	18.8	25.8	26.7 ^d	30.6 ^d	37.1 ^d	42.2	40.6 ^d	48.7	58.6	63.3	66.8 ^c
Neuroblastoma ^a	52.5	56.6	54.5	52.3	63.2	76.0	66.8	66.5	72.1	72.2	77.3 ^c
Non-Hodgkin lymphoma	43.2	52.7	66.9	69.8	70.7	76.9	80.7	83.2	89.8	83.9	90.8 ^c
Soft tissue	61.3	74.2	69.2	72.9	66.4	79.8	76.7	70.5	76.9	82.5	81.4 ^c
Wilms' tumor ^b	73.1	79.0	86.7	90.7	92.2	91.9	91.7	91.5	93.8	90.8	93.0 ^c

Site	Ages 0-19										
	1975-1977	1978-1980	1981-1983	1984-1986	1987-1989	1990-1992	1993-1995	1996-1998	1999-2001	2002-2005	2006-2012
All Sites											
All Races	61.5	65.2	68.3	70.5	73.5	76.3	77.8	79.8	80.3	82.7	84.7 ^c
Whites	61.3	65.8	69.2	72.4	74.9	77.6	78.5	81.1	81.4	84.3	85.8 ^c
Blacks	59.5	60.3	62.5	58.5	64.4	68.6	74.2	73.9	74.6	73.1	80.5 ^c
Bone & Joint	50.4	48.1	51.2	56.1	64.0	68.8	68.9	67.0	66.7	75.0	74.5 ^c
Brain & ONS	58.9	58.1	58.4	63.9	65.9	66.4	71.5	76.0	74.4	75.5	75.1 ^c
Hodgkin lymphoma	86.2	88.3	85.5	90.6	88.7	94.2	93.9	95.2	95.0	96.6	97.3 ^c
Leukemia	44.9	53.2	58.0	60.3	67.6	71.3	71.9	76.6	77.7	82.2	86.1 ^c
Acute lymphocytic	53.8	61.9	67.1	69.9	75.0	79.8	81.4	84.3	84.8	87.8	91.0 ^c
Acute myeloid	18.7	26.2	26.4	31.4	37.6	41.9	38.6	46.3	51.9	61.5	66.2 ^c
Neuroblastoma ^a	53.1	56.7	53.4	52.5	61.7	75.7	66.8	66.7	71.9	72.2	76.8 ^c
Non-Hodgkin lymphoma	44.6	53.4	63.6	67.6	70.4	72.7	78.0	81.0	84.3	83.9	88.0 ^c
Soft tissue	64.8	68.9	68.2	72.6	68.0	69.7	73.8	72.3	73.0	77.0	78.2 ^c
Wilms' tumor ^b	72.6	78.4	86.8	91.0	92.2	91.3	91.8	91.6	93.8	91.0	92.6 ^c

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

Based on follow-up of patients into 2013.

Note: Neuroblastoma and Wilms' tumor are not mutually exclusive from the other tumors presented in table.

^a Neuroblastoma is defined as histologies 9490-9509.

^b Wilms' tumor is defined as histologies 8959-8960.

^c The difference between 1975-1977 and 2006-2012 is statistically significant ($p < .05$).

^d The standard error is between 5 and 10 percentage points.

^e 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 28.9

Childhood Cancer
SEER Incidence Rates, U.S. Death Rates and 5-Year Relative Survival Percentages
For Top Cancer Sites^f By 5-Year Age Groups
All Races, Males and Females

Age/Site	SEER Incidence ^a					US Mortality ^b					5-year Relative Survival ^a	
	2009-2013 Num Cases	2009-2013 Rate	1975-2013 APC	1975-1994 APC	1995-2013 APC	2009-2013 Num Deaths	2009-2013 Rate	1975-2013 APC	1975-1994 APC	1995-2013 APC	1975-1977	2006-2012
Ages 0-4												
All Sites	6,399	22.2	0.7*	1.1*	0.5 [®]	2,102	2.1	-2.5*	-2.9*	-1.6* [#]	57.2	84.6 ^c
Soft tissue	498	1.7	1.2*	0.0	1.6	126	0.1	-1.6*	-1.6	0.0	62.0 ^d	82.8 ^c
Kidney and Renal pelvis	542	1.9	-0.3	0.6	-1.1	68	0.1	-	-5.9*	-	71.9	92.0 ^c
Eye and Orbit	403	1.4	0.1	1.9*	-0.4 [#]	19	0.0	-	-	-	87.2 ^d	94.6
Brain and Other nervous	1,177	4.1	1.1*	2.3*	0.5 [#]	572	0.6	-1.3*	-1.1*	-1.4*	52.0	72.6 ^c
Other endocrine ^g	414	1.4	-	-	-	329	0.3	-	-	-	35.7 ^d	78.9 ^c
Leukemia	2,410	8.3	0.8*	0.7	0.5	671	0.7	-2.8*	-3.6*	-1.8* [#]	55.4	89.2 ^c
Acute lymphocytic	1,922	6.7	0.8*	0.7*	0.3	204	0.2	-4.0*	-5.7*	-2.3* [#]	63.2	94.1 ^c
Ages 5-9												
All Sites	3,692	12.7	0.5*	0.5	0.9*	2,244	2.2	-2.4*	-3.2*	-1.1* [#]	58.3	83.4 ^c
Brain and Other nervous	1,014	3.5	0.6*	1.2	1.3*	936	0.9	-0.5*	-0.6	0.5 [#]	58.4	71.8 ^c
Leukemia	1,256	4.3	0.4*	0.9	0.1	517	0.5	-4.6*	-5.3*	-3.4* [#]	51.0	89.9 ^c
Acute lymphocytic	1,062	3.7	0.7*	1.1	0.3	250	0.2	-5.3*	-6.4*	-4.0* [#]	54.8	93.1 ^c
Ages 10-14												
All Sites	4,062	13.8	0.6*	1.0*	0.5	2,235	2.2	-2.0*	-2.5*	-1.3* [#]	58.6	85.3 ^c
Bone and Joint	418	1.4	0.2	1.2	0.6	258	0.2	-1.3*	-2.7*	-0.7 [#]	52.8 ^d	78.3 ^c
Brain and Other nervous	788	2.7	0.7*	1.9*	-0.5 [#]	638	0.6	-1.1*	-1.6*	-0.5 [#]	59.5	81.9 ^c
Hodgkin lymphoma	343	1.2	-0.5	-0.8	0.8	-	-	-	-	-	79.0	98.0 ^c
Leukemia	960	3.3	0.7*	0.7	1.1*	661	0.6	-2.9*	-3.1*	-2.6*	34.0	82.2 ^c
Acute lymphocytic	657	2.2	1.0*	1.5	1.4*	330	0.3	-3.3*	-3.5*	-3.1*	43.0 ^d	85.0 ^c
Ages 15-19												
All Sites	6,819	22.2	0.6*	0.9*	0.8*	3,139	2.9	-1.9*	-2.1*	-1.7* [#]	67.8	85.2 ^c
Bone and Joint	439	1.4	0.1	1.1	-0.3	512	0.5	-1.0*	-2.4*	-0.6 [#]	51.0 ^d	69.5 ^c
Melanoma of the skin	308	1.0	0.7*	2.0*	-0.6 [®]	24	0.0	-	-	-	76.2 ^d	95.1 ^c
Testis(males)	633	4.0	1.3*	1.8	1.6*	34	0.1	-	-	-	66.0 ^d	94.4 ^c
Brain and Other nervous	684	2.2	0.3	1.2	0.4	555	0.5	-1.1*	-1.0*	-0.6	65.3	77.1 ^c
Thyroid	854	2.8	2.4*	0.5	4.3* [#]	-	-	-	-	-	100.0	99.2
Hodgkin lymphoma	938	3.0	-0.6*	0.0	0.2	55	0.1	-	-4.2*	-	89.0	97.1 ^c
Non-Hodgkin lymphoma	545	1.8	1.3*	2.7*	0.5 [#]	164	0.2	-3.1*	-2.4*	-4.3* [#]	47.7 ^d	83.7 ^c
Leukemia	950	3.1	0.7*	0.7	0.6	827	0.8	-2.3*	-1.8*	-2.4*	23.8	76.4 ^c
Acute lymphocytic	522	1.7	1.0*	0.9	0.5	325	0.3	-2.4*	-1.6*	-3.0* [#]	30.0 ^d	81.8 ^c

The APC is the Annual Percent Change over the time interval.

Note: Incidence and death rates are per 100,000 and are age-adjusted(as appropriate) to the 2000 US Std Population (19 age groups - Census P25-1130).

^a Incidence data used in calculating the rates are from the SEER 18 areas (San Francisco, Connecticut, Detroit, Hawaii, Iowa, New Mexico, Seattle, Utah, Atlanta, San Jose-Monterey, Los Angeles, Alaska Native Registry, Rural Georgia, California excluding SF/SJM/LA, Kentucky, Louisiana, New Jersey and Georgia excluding ATL/RG).

Incidence data used in calculating the trends and survival estimates are from the 9 SEER areas (San Francisco, Connecticut, Detroit, Hawaii, Iowa, New Mexico, Seattle, Utah, and Atlanta).

^b US Mortality Files, National Center for Health Statistics, Centers for Disease Control and Prevention.

^c The difference between 1975-1977 and 2006-2012 is statistically significant (p<.05).

^d The standard error is between 5 and 10 percentage points.

^e The standard error is greater than 10 percentage points.

^f Sites were chosen based on more than 100 SEER incidence cases between 2009-2013.

^g APCs suppressed because of inconsistent classification across ICD: ICD-8 (1975-1978), ICD-9 (1979-1998), ICD-10 (1999-2008).

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

The APC for 1995-2013 is significantly different from the APC for 1975-1994 (p<.05).

® The APC for 1995-2013 is significantly different from the APC for 1975-1994 (p<.10).

- Statistic not shown. Age-adjusted 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. Survival rate based on less than 25 cases for the time interval.

Table 28.10
All Cancer Sites (Invasive)

SEER^a Relative Survival (Percent)
By Year of Diagnosis

All Races, Males and Females

Ages 0-14

Year of Diagnosis

	1975- 1979	1980- 1984	1985- 1989	1990- 1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Survival Time																						
1-year	80.5	84.5	86.7	89.6	90.4	92.7	90.9	90.7	91.1	92.5	92.0	91.5	93.3	92.7	92.5	94.0	92.3	92.5	92.2	93.0	95.1	93.6
2-year	70.9	75.5	78.4	83.0	84.6	86.5	84.7	84.3	85.3	86.0	86.9	87.3	89.2	88.3	87.9	89.3	87.8	88.1	86.6	89.5	90.9	
3-year	65.2	70.7	74.3	79.7	81.0	83.7	82.3	81.5	82.9	83.2	84.1	84.0	86.1	85.4	84.9	87.8	86.2	86.1	84.0	86.8		
4-year	62.0	67.5	71.9	77.6	79.0	80.9	80.5	78.8	81.4	81.6	82.5	82.4	85.2	83.9	83.4	86.4	84.7	84.2	83.1			
5-year	59.8	65.9	70.7	76.4	77.4	80.5	79.3	78.0	79.6	80.7	81.9	81.4	84.1	83.1	82.1	85.7	83.5	83.3				
6-year	58.1	64.7	69.7	75.8	76.4	79.8	78.4	76.6	79.1	79.5	81.1	80.6	83.7	82.8	81.1	85.0	82.1					
7-year	57.1	63.8	68.7	75.2	75.9	79.2	78.0	76.1	78.4	79.0	80.1	80.1	83.1	82.0	80.6	84.6						
8-year	56.4	63.1	68.2	74.7	75.0	78.7	76.9	75.7	78.1	78.3	80.0	79.5	82.4	81.4	79.9							
9-year	56.0	62.6	67.8	74.3	74.7	78.4	76.7	75.1	77.6	78.3	79.5	79.3	81.7	81.1								
10-year	55.8	62.1	67.4	74.1	74.6	78.1	76.1	74.8	77.2	78.0	79.4	78.8	81.6									
11-year	55.4	61.8	67.1	73.8	74.3	78.0	75.9	74.3	76.8	77.7	79.1	78.0										
12-year	55.1	61.2	66.8	73.6	74.1	77.9	75.6	74.1	76.7	77.7	79.0											
13-year	54.8	60.9	66.6	73.3	74.0	77.8	75.4	73.6	76.4	77.2												
14-year	54.5	60.6	66.2	73.1	74.0	77.6	75.3	73.6	76.4													
15-year	54.3	60.3	66.0	72.8	73.9	77.4	75.2	73.5														
16-year	53.9	60.1	65.8	72.5	73.2	77.4	75.0															
17-year	53.6	59.8	65.6	72.3	72.9	77.2																
18-year	53.3	59.5	65.4	72.1	72.8																	
19-year	53.0	59.3	65.3	71.9																		
20-year	52.9	59.1	65.0																			

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

Table 28.11
All Cancer Sites (Invasive)

SEER^a Relative Survival (Percent)
By Year of Diagnosis

All Races, Males and Females

Ages 0-19

Year of Diagnosis

	1975- 1979	1980- 1984	1985- 1989	1990- 1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Survival Time																						
1-year	82.5	85.7	88.2	90.2	90.1	93.1	91.4	91.7	90.8	91.2	92.3	92.3	93.5	92.4	92.8	94.1	93.1	93.8	93.6	93.0	95.3	94.6
2-year	73.0	77.2	80.3	83.3	84.6	87.5	85.1	85.3	85.8	84.3	87.3	87.3	89.1	88.0	88.6	89.0	88.4	89.3	88.5	89.4	91.3	
3-year	67.9	72.4	76.5	80.0	81.3	85.1	82.0	82.5	83.0	81.9	84.3	84.1	86.2	84.7	86.0	87.3	86.6	87.1	86.0	86.8		
4-year	64.9	69.5	74.0	78.0	79.8	82.4	80.4	79.9	81.3	80.3	82.6	82.2	85.2	83.6	84.5	85.8	84.8	85.1	85.0			
5-year	62.8	67.8	72.9	76.7	78.4	81.8	78.8	78.8	79.8	79.2	81.8	81.1	84.1	82.4	83.3	85.0	83.5	83.8				
6-year	61.1	66.5	71.9	76.0	77.4	81.2	77.7	77.7	79.4	78.4	81.2	80.2	83.7	82.1	82.0	83.9	82.2					
7-year	60.3	65.7	71.1	75.4	76.9	80.8	77.5	77.4	78.9	77.7	80.2	79.8	83.1	81.4	81.6	83.4						
8-year	59.5	64.9	70.5	74.9	76.0	80.2	76.7	77.0	78.7	77.1	80.0	79.0	82.4	80.9	80.8							
9-year	59.0	64.3	70.0	74.5	75.7	79.8	76.5	76.5	78.3	77.0	79.6	78.7	82.0	80.4								
10-year	58.6	63.8	69.6	74.3	75.5	79.5	75.8	76.1	78.0	76.7	79.5	78.3	81.8									
11-year	58.3	63.5	69.3	74.0	75.4	79.3	75.7	75.7	77.7	76.6	79.3	77.7										
12-year	57.9	63.0	69.1	73.8	75.1	79.3	75.5	75.3	77.5	76.3	79.1											
13-year	57.7	62.7	68.8	73.4	75.0	79.1	75.2	74.9	77.2	75.9												
14-year	57.5	62.3	68.3	73.2	75.0	79.0	75.1	74.8	77.2													
15-year	57.2	62.1	68.1	73.0	74.9	78.8	74.9	74.8														
16-year	56.9	61.6	67.8	72.7	74.3	78.7	74.6															
17-year	56.6	61.4	67.6	72.5	74.1	78.4																
18-year	56.3	61.2	67.4	72.3	74.0																	
19-year	56.1	60.9	67.1	72.0																		
20-year	55.8	60.6	66.8																			

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

Table 28.12
Childhood Cancer (Invasive, <20 Years old at diagnosis)

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

Years Since Diagnosis		0 to <5	5 to <10	10 to <15	15 to <20	20 to <25	25 to <30	0 to <20 ^e	0 to <38 ^e	>=38 ^f	Complete ^g
<u>Race</u>	<u>Sex</u>										
All Races ^b	Both Sexes	66,771	56,113	52,196	45,861	39,730	33,795	245,597	337,686	+	+
	Males	34,885	29,802	26,799	23,976	20,735	16,999	128,572	173,483	+	+
	Females	31,886	26,311	25,397	21,885	18,995	16,796	117,025	164,203	+	+
White ^b	Both Sexes	53,357	46,327	44,082	38,388	33,831	29,635	203,123	283,768	+	+
	Males	28,049	24,840	22,579	20,048	17,788	14,965	106,787	146,395	+	+
	Females	25,308	21,487	21,503	18,340	16,043	14,670	96,336	137,373	+	+
Black ^b	Both Sexes	8,264	6,170	5,071	4,649	3,813	2,673	26,476	34,244	+	+
	Males	4,181	3,169	2,583	2,372	1,909	1,283	13,479	16,982	+	+
	Females	4,083	3,001	2,488	2,277	1,904	1,390	12,997	17,262	+	+
Asian/ Pacific Islander ^c	Both Sexes	2,933	2,281	1,967	+	+	+	9,192	+	+	+
	Males	1,518	1,179	1,053	+	+	+	4,778	+	+	+
	Females	1,415	1,102	914	+	+	+	4,414	+	+	+
Hispanic ^d	Both Sexes	14,118	10,853	8,919	+	+	+	42,077	+	+	+
	Males	7,461	6,089	4,733	+	+	+	22,698	+	+	+
	Females	6,657	4,764	4,186	+	+	+	19,379	+	+	+

^a US 2013 cancer prevalence counts are based on 2013 cancer prevalence proportions from the SEER registries and 1/1/2013 US population estimates based on the average of 2012 and 2013 population estimates from the US Bureau of the Census.

^{b c d} Prevalence was calculated using the First Malignant Primary Only for a person.
Statistics based on (b) SEER 9 Areas (c) SEER 13 Areas excluding the Alaska Native Registry

^e (d) NHIA for Hispanic for SEER 13 Areas excluding the Alaska Native Registry.
Maximum limited-duration prevalence: 38 years for 1975-2013 SEER 9 data; 21 years for 1992-2013 SEER 13 data (excluding the Alaska Native Registry) used to calculate prevalence for Hispanics and Asian Pacific Islanders.

^{f g} (f) Cases diagnosed more than 38 years ago were estimated using the completeness index method (Capocaccia et. al. 1997, Merrill et. al. 2000). (g) Complete prevalence is obtained by summing 0 to <38 and >=38.

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

+ Not available.

Table 28.13
Age-Specific Rates^a and Counts for the Top 5 Cancer Sites^b by Single Year of Age at Diagnosis

SEER Cancer Incidence^c 2009-2013

Age <1			Age 1			Age 2		
	Rate	Cases		Rate	Cases		Rate	Cases
All Sites	23.6	1,341	All Sites	21.5	1,233	All Sites	24.4	1,413
Leukemia	4.8	271	Leukemia	6.7	382	Leukemia	10.3	598
Acute Lymphocytic Leukemia	2.0	112	Acute Lymphocytic Leukemia	4.2	243	Acute Lymphocytic Leukemia	9.1	528
Brain and ONS ^d	3.7	213	Brain and ONS ^d	4.2	241	Brain and ONS ^d	4.8	275
Soft Tissue	3.5	198	Kidney and Renal Pelvis	2.1	122	Kidney and Renal Pelvis	2.2	128
Eye and Orbit	3.2	181	Soft Tissue	1.7	99	Eye and Orbit	1.5	84
Other Endocrine	2.6	146	Eye and Orbit	1.5	87	Soft Tissue	1.4	82
Age 3			Age 4			Age 5		
	Rate	Cases		Rate	Cases		Rate	Cases
All Sites	23.4	1,353	All Sites	18.1	1,059	All Sites	14.4	842
Leukemia	11.5	664	Leukemia	8.5	495	Leukemia	5.7	335
Acute Lymphocytic Leukemia	10.3	597	Acute Lymphocytic Leukemia	7.6	442	Acute Lymphocytic Leukemia	4.8	284
Brain and ONS ^d	4.1	236	Brain and ONS ^d	3.6	212	Brain and ONS ^d	3.8	223
Kidney and Renal Pelvis	2.1	122	Kidney and Renal Pelvis	1.4	81	Non-Hodgkin Lymphoma	1.0	59
Other Endocrine	1.3	73	Soft Tissue	1.0	57	Kidney and Renal Pelvis	1.0	57
Soft Tissue	1.1	62	Non-Hodgkin Lymphoma	0.8	48	Soft Tissue	0.6	34
Age 6			Age 7			Age 8		
	Rate	Cases		Rate	Cases		Rate	Cases
All Sites	14.1	821	All Sites	11.6	674	All Sites	11.4	662
Leukemia	4.9	288	Leukemia	3.9	225	Leukemia	3.4	196
Acute Lymphocytic Leukemia	4.3	252	Acute Lymphocytic Leukemia	3.3	190	Acute Lymphocytic Leukemia	2.9	171
Brain and ONS ^d	4.0	233	Brain and ONS ^d	3.5	201	Brain and ONS ^d	3.2	188
Non-Hodgkin Lymphoma	1.2	70	Non-Hodgkin Lymphoma	1.0	60	Non-Hodgkin Lymphoma	1.2	67
Kidney and Renal Pelvis	0.8	47	Soft Tissue	0.8	44	Bones and Joints	0.6	36
Bones and Joints	0.6	35	Bones and Joints	0.5	29	Soft Tissue	0.6	35
Age 9			Age 10			Age 11		
	Rate	Cases		Rate	Cases		Rate	Cases
All Sites	12.0	693	All Sites	11.8	688	All Sites	11.9	699
Leukemia	3.7	212	Leukemia	3.1	182	Brain and ONS ^d	2.9	167
Acute Lymphocytic Leukemia	2.9	165	Acute Lymphocytic Leukemia	2.4	141	Leukemia	2.8	161
Brain and ONS ^d	2.9	169	Brain and ONS ^d	2.8	163	Acute Lymphocytic Leukemia	1.8	108
Non-Hodgkin Lymphoma	1.5	84	Non-Hodgkin Lymphoma	1.2	68	Bones and Joints	1.2	73
Bones and Joints	1.0	55	Bones and Joints	1.0	61	Non-Hodgkin Lymphoma	1.2	71
Hodgkin Lymphoma	0.7	40	Soft Tissue	0.8	46	Hodgkin Lymphoma	0.7	42

^a Rates are per 100,000 per year.

^b Top 5 cancer sites were determined based on the 2009-2013 age-specific rate.

^c 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).

^d ONS = Other Nervous System. IBD = Intrahepatic Bile Duct.

^e The rates for sex-specific cancer sites are calculated using the population for both sexes combined.

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

Table 28.13 - continued
Age-Specific Rates^a and Counts for the Top 5 Cancer Sites^b by Single Year of Age at Diagnosis

SEER Cancer Incidence^c 2009-2013

Age 12			Age 13			Age 14		
	Rate	Cases		Rate	Cases		Rate	Cases
All Sites	13.8	814	All Sites	14.9	882	All Sites	16.5	979
Leukemia	3.3	195	Leukemia	3.4	202	Leukemia	3.7	220
Acute Lymphocytic Leukemia	2.3	136	Acute Lymphocytic Leukemia	2.1	127	Acute Lymphocytic Leukemia	2.4	145
Brain and ONS ^d	2.8	163	Brain and ONS ^d	2.4	140	Brain and ONS ^d	2.6	155
Bones and Joints	1.6	93	Bones and Joints	1.7	103	Hodgkin Lymphoma	1.7	99
Non-Hodgkin Lymphoma	1.3	78	Hodgkin Lymphoma	1.5	88	Non-Hodgkin Lymphoma	1.5	92
Hodgkin Lymphoma	1.2	71	Non-Hodgkin Lymphoma	1.4	85	Bones and Joints	1.5	88
Age 15			Age 16			Age 17		
	Rate	Cases		Rate	Cases		Rate	Cases
All Sites	19.1	1,146	All Sites	19.5	1,193	All Sites	23.3	1,444
Leukemia	3.4	206	Leukemia	3.3	199	Hodgkin Lymphoma	3.6	221
Acute Lymphocytic Leukemia	2.0	121	Acute Lymphocytic Leukemia	2.0	123	Leukemia	3.1	190
Brain and ONS ^d	2.4	147	Brain and ONS ^d	2.5	152	Acute Lymphocytic Leukemia	1.6	99
Hodgkin Lymphoma	2.3	138	Hodgkin Lymphoma	2.5	151	Thyroid	2.6	164
Non-Hodgkin Lymphoma	2.1	124	Thyroid	2.3	141	Brain and ONS ^d	2.5	153
Bones and Joints	2.0	119	Non-Hodgkin Lymphoma	1.4	86	Testis ^e	2.2	137
Age 18			Age 19					
	Rate	Cases		Rate	Cases			
All Sites	23.0	1,433	All Sites	25.9	1,603			
Thyroid	3.2	200	Thyroid	3.9	244			
Hodgkin Lymphoma	3.2	197	Hodgkin Lymphoma	3.7	231			
Leukemia	3.0	187	Testis ^e	3.0	186			
Acute Lymphocytic Leukemia	1.6	98	Leukemia	2.7	168			
Testis ^e	2.9	178	Acute Lymphocytic Leukemia	1.3	81			
Brain and ONS ^d	1.8	114	Brain and ONS ^d	1.9	118			

^a Rates are per 100,000 per year.

^b Top 5 cancer sites were determined based on the 2009-2013 age-specific rate.

^c 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).

^d ONS = Other Nervous System. IBD = Intrahepatic Bile Duct.

^e The rates for sex-specific cancer sites are calculated using the population for both sexes combined.

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

Table 28.14
Age-Specific Rates^a and Deaths for the Top 5 Cancer Sites^b by Single Year of Age at Death
U.S. Mortality^c 2009-2013

Age <1			Age 1			Age 2		
	Rate	Deaths		Rate	Deaths		Rate	Deaths
All Sites	1.7	333	All Sites	2.0	396	All Sites	2.1	418
Leukemia	0.6	114	Leukemia	0.8	162	Leukemia	0.7	149
Acute Lymphocytic Leukemia	0.1	27	Acute Lymphocytic Leukemia	0.3	54	Acute Lymphocytic Leukemia	0.2	38
Brain and ONS ^d	0.4	76	Brain and ONS ^d	0.4	84	Brain and ONS ^d	0.5	103
Other Endocrine	0.2	30	Other Endocrine	0.2	47	Other Endocrine	0.4	74
Soft Tissue	0.1	23	Soft Tissue	0.1	23	Soft Tissue	0.1	27
Liver & IBD ^d	0.1	19	Liver & IBD ^d	0.1	21	Liver & IBD ^d	0.1	25
Age 3			Age 4			Age 5		
	Rate	Deaths		Rate	Deaths		Rate	Deaths
All Sites	2.5	498	All Sites	2.2	457	All Sites	2.5	509
Leukemia	0.7	142	Brain and ONS ^d	0.9	175	Brain and ONS ^d	1.1	229
Acute Lymphocytic Leukemia	0.3	51	Leukemia	0.5	104	Leukemia	0.6	121
Brain and ONS ^d	0.7	134	Acute Lymphocytic Leukemia	0.2	34	Acute Lymphocytic Leukemia	0.2	50
Other Endocrine	0.5	101	Other Endocrine	0.4	77	Other Endocrine	0.3	65
Liver & IBD ^d	0.1	28	Soft Tissue	0.1	28	Soft Tissue	0.1	22
Soft Tissue	0.1	25	Kidney and Renal Pelvis	0.1	24	Kidney and Renal Pelvis	0.1	19
Age 6			Age 7			Age 8		
	Rate	Deaths		Rate	Deaths		Rate	Deaths
All Sites	2.1	433	All Sites	2.1	417	All Sites	2.1	422
Brain and ONS ^d	0.9	183	Brain and ONS ^d	0.8	170	Brain and ONS ^d	0.9	179
Leukemia	0.4	79	Leukemia	0.5	107	Leukemia	0.5	101
Acute Lymphocytic Leukemia	0.2	36	Acute Lymphocytic Leukemia	0.3	57	Acute Lymphocytic Leukemia	0.3	53
Other Endocrine	0.4	73	Other Endocrine	0.2	48	Other Endocrine	0.2	38
Soft Tissue	0.1	22	Soft Tissue	0.1	26	Soft Tissue	0.2	32
Kidney and Renal Pelvis	0.1	21	Bones and Joints	-	-	Bones and Joints	-	-
Age 9			Age 10			Age 11		
	Rate	Deaths		Rate	Deaths		Rate	Deaths
All Sites	2.3	463	All Sites	2.0	409	All Sites	2.1	438
Brain and ONS ^d	0.9	175	Brain and ONS ^d	0.7	150	Brain and ONS ^d	0.7	138
Leukemia	0.5	109	Leukemia	0.6	118	Leukemia	0.6	127
Acute Lymphocytic Leukemia	0.3	54	Acute Lymphocytic Leukemia	0.3	60	Acute Lymphocytic Leukemia	0.3	65
Other Endocrine	0.2	46	Other Endocrine	0.2	34	Bones and Joints	0.2	43
Bones and Joints	0.2	42	Soft Tissue	0.2	32	Other Endocrine	0.2	35
Soft Tissue	0.2	36	Bones and Joints	0.2	31	Soft Tissue	0.2	33

^a Rates are per 100,000 per year. Deaths are for the entire United States over the time period 2009-2013.

^b Top 5 cancer sites were determined based on the 2009-2013 age-specific rate.

^c US Mortality Files, National Center for Health Statistics, Centers for Disease Control and Prevention.

^d ONS = Other Nervous System. IBD = Intrahepatic Bile Duct.

^e The rates for sex-specific cancer sites are calculated using the population for both sexes combined.

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

Table 28.14 - continued
Age-Specific Rates^a and Deaths for the Top 5 Cancer Sites^b by Single Year of Age at DeathU.S. Mortality^c 2009-2013

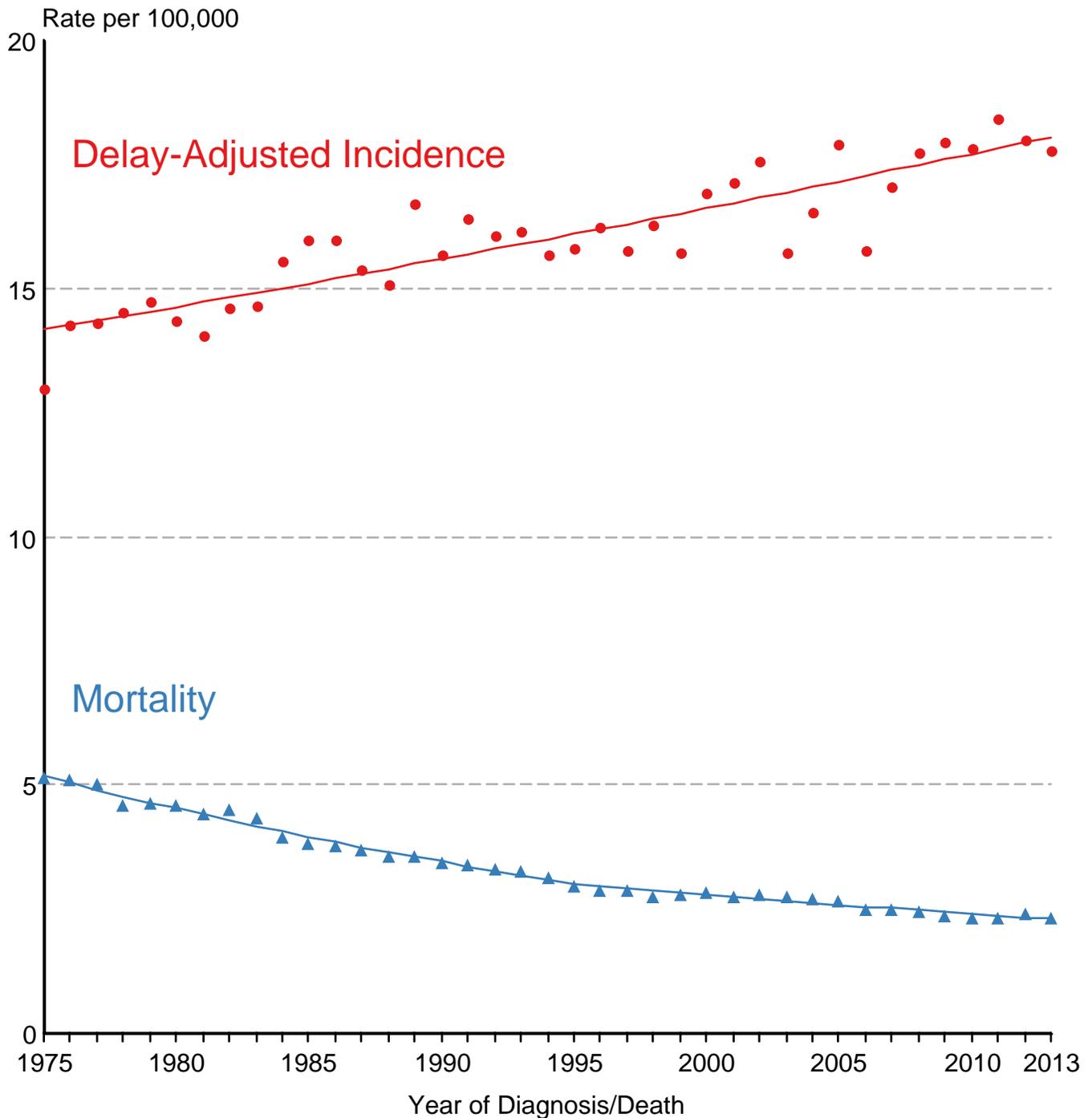
Age 12			Age 13			Age 14		
	<u>Rate</u>	<u>Deaths</u>		<u>Rate</u>	<u>Deaths</u>		<u>Rate</u>	<u>Deaths</u>
All Sites	2.1	436	All Sites	2.1	441	All Sites	2.5	511
Leukemia	0.7	135	Leukemia	0.6	125	Leukemia	0.8	156
Acute Lymphocytic Leukemia	0.4	73	Acute Lymphocytic Leukemia	0.3	62	Acute Lymphocytic Leukemia	0.3	70
Brain and ONS ^d	0.6	119	Brain and ONS ^d	0.5	114	Brain and ONS ^d	0.6	117
Bones and Joints	0.3	52	Bones and Joints	0.2	47	Bones and Joints	0.4	85
Soft Tissue	0.2	38	Soft Tissue	0.2	46	Soft Tissue	0.2	50
Non-Hodgkin Lymphoma	0.1	20	Non-Hodgkin Lymphoma	0.1	24	Other Endocrine	0.1	20
Age 15			Age 16			Age 17		
	<u>Rate</u>	<u>Deaths</u>		<u>Rate</u>	<u>Deaths</u>		<u>Rate</u>	<u>Deaths</u>
All Sites	2.6	553	All Sites	2.5	542	All Sites	2.9	622
Leukemia	0.8	166	Leukemia	0.6	136	Leukemia	0.8	173
Acute Lymphocytic Leukemia	0.3	64	Acute Lymphocytic Leukemia	0.2	51	Acute Lymphocytic Leukemia	0.3	74
Brain and ONS ^d	0.6	118	Brain and ONS ^d	0.5	107	Bones and Joints	0.5	108
Bones and Joints	0.4	74	Bones and Joints	0.5	102	Brain and ONS ^d	0.5	107
Soft Tissue	0.3	53	Soft Tissue	0.2	52	Soft Tissue	0.3	68
Non-Hodgkin Lymphoma	0.1	29	Non-Hodgkin Lymphoma	0.1	31	Non-Hodgkin Lymphoma	0.1	29
Age 18			Age 19					
	<u>Rate</u>	<u>Deaths</u>		<u>Rate</u>	<u>Deaths</u>			
All Sites	3.0	663	All Sites	3.4	759			
Leukemia	0.8	177	Leukemia	0.8	175			
Acute Lymphocytic Leukemia	0.3	74	Acute Lymphocytic Leukemia	0.3	62			
Bones and Joints	0.5	120	Brain and ONS ^d	0.6	129			
Brain and ONS ^d	0.4	94	Bones and Joints	0.5	108			
Soft Tissue	0.4	88	Soft Tissue	0.4	94			
Non-Hodgkin Lymphoma	0.2	37	Non-Hodgkin Lymphoma	0.2	38			

^a Rates are per 100,000 per year. Deaths are for the entire United States over the time period 2009-2013.^b Top 5 cancer sites were determined based on the 2009-2013 age-specific rate.^c US Mortality Files, National Center for Health Statistics, Centers for Disease Control and Prevention.^d ONS = Other Nervous System. IBD = Intrahepatic Bile Duct.^e The rates for sex-specific cancer sites are calculated using the population for both sexes combined.

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

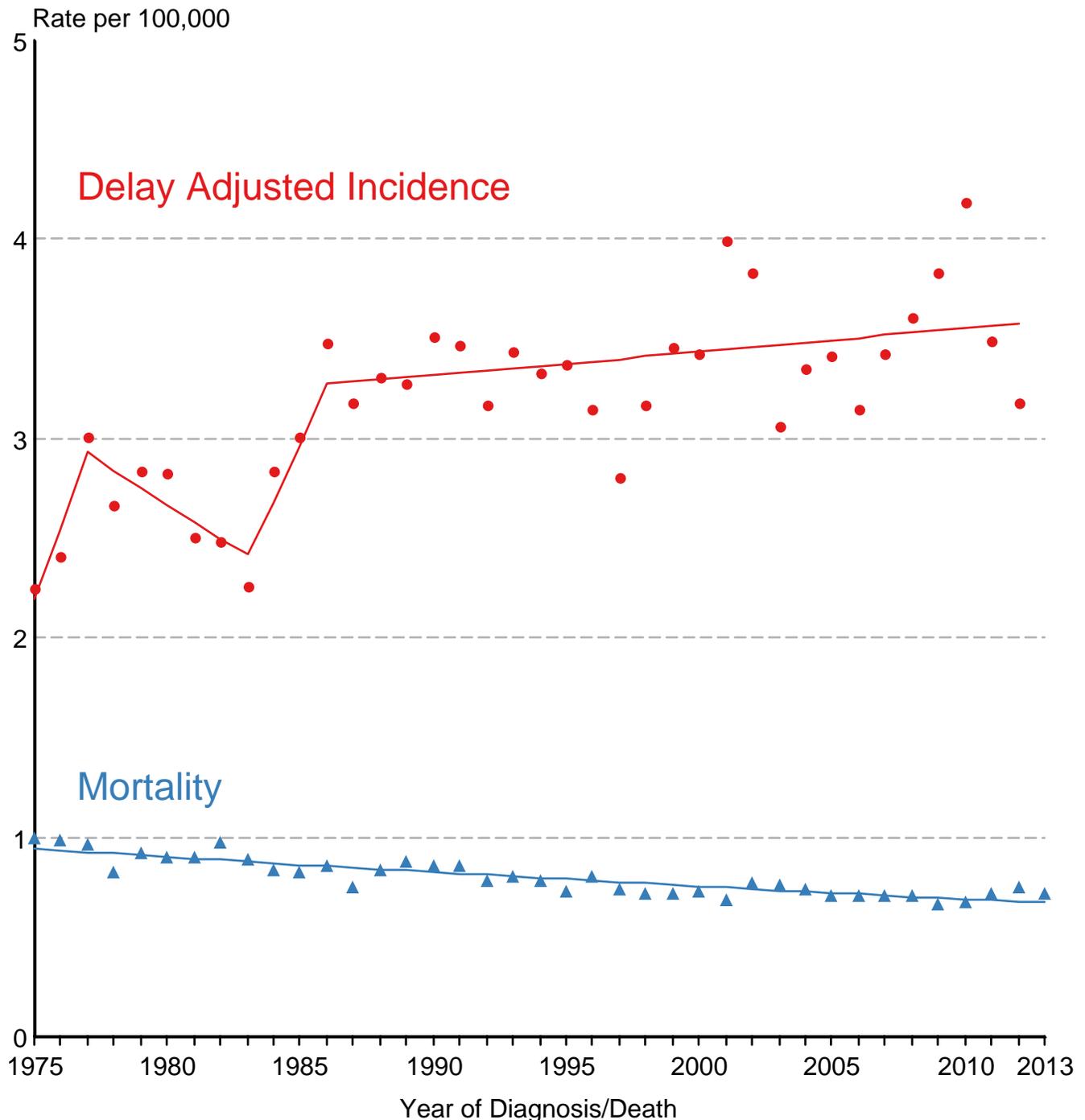
Figure 28.1

SEER Delay-Adjusted Incidence and US Mortality All Childhood Cancers, Under 20 Years of Age Both Sexes, All Races, 1975-2013



Source: SEER 9 areas and US Mortality Files (National Center for Health Statistics, CDC).
Rates are age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1103).
Regression lines are calculated using the Joinpoint Regression Program Version 4.3.0.0, April 2016,
National Cancer Institute.

SEER Delay-Adjusted Incidence and US Mortality Brain and CNS, Under 15 Years of Age Both Sexes, All Races, 1975-2013

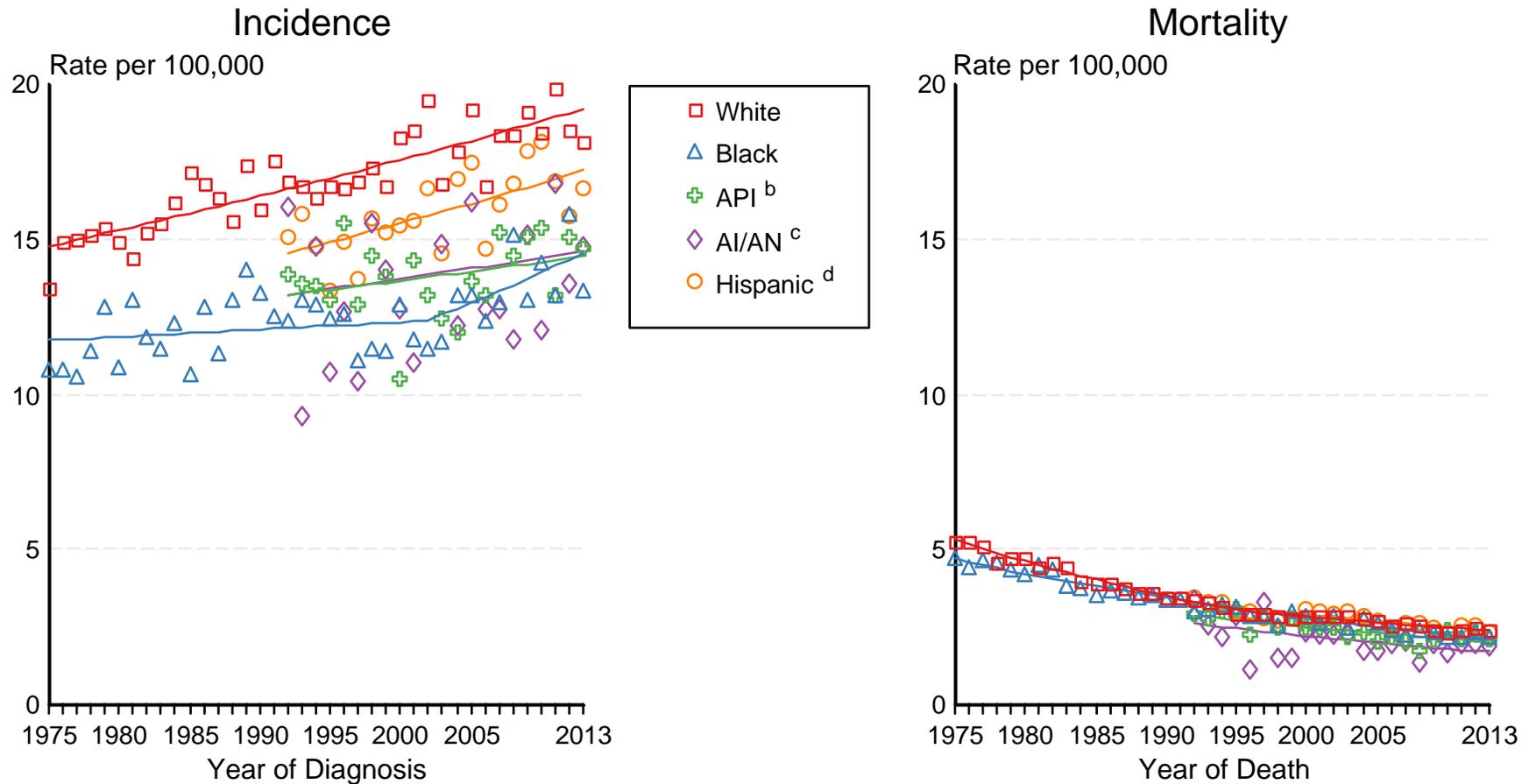


Source: SEER 9 areas and US Mortality Files (National Center for Health Statistics, CDC). Rates are age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1103). Regression lines are calculated using the Joinpoint Regression Program Version 4.3.0.0, April 2016, National Cancer Institute.

Figure 28.3

SEER Incidence and US Death Rates^a All Cancer Sites, Ages <20, Both Sexes

Joinpoint Analyses for Whites and Blacks from 1975-2013 and for Asian/Pacific Islanders, American Indians/Alaska Natives and Hispanics from 1992-2013



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

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