

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, 2010-2014

By Primary Cancer Site

All Races, Males and Females

Site	Ages 0-14						Ages 0-19					
	Incidence			Mortality			Incidence			Mortality		
	Total	Males	Females	Total	Males	Females	Total	Males	Females	Total	Males	Females
All Sites												
All Races	16.2	16.9	15.5	2.1	2.3	2.0	17.8	18.5	17.0	2.3	2.6	2.1
Whites	17.0	17.8	16.3	2.2	2.4	2.0	18.9	19.7	18.1	2.4	2.6	2.1
Blacks	13.3	13.3	13.3	2.0	2.1	1.9	13.7	13.8	13.6	2.2	2.4	2.1
Bone & Joint	0.8	0.8	0.8	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	3.2	0.7	0.8	0.7	3.1	3.3	3.0	0.7	0.7	0.6
Hodgkin lymphoma	0.5	0.7	0.4	-	-	-	1.2	1.3	1.1	0.0	0.0	0.0
Kidney & Renal pelvis	0.9	0.8	0.9	0.1	0.1	0.1	0.7	0.6	0.8	0.1	0.1	0.1
Leukemia	5.2	5.5	4.9	0.6	0.6	0.5	4.7	5.1	4.3	0.6	0.7	0.6
Acute lymphocytic	4.1	4.3	3.9	0.2	0.3	0.2	3.5	3.8	3.2	0.3	0.3	0.2
Non-Hodgkin lymphoma	1.1	1.4	0.7	0.1	0.1	0.0	1.3	1.7	0.9	0.1	0.1	0.1
Soft tissue	1.1	1.0	1.2	0.1	0.2	0.1	1.1	1.0	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, 1975-2014

By Primary Cancer Site

All Races, Males and Females

Year of Diagnosis

Age/Site	1975	1980	1985	1990	1995	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
<u>Ages 0-14</u>																				
All Sites																				
All Races	11.6	12.9	14.6	14.3	14.1	15.4	15.8	15.6	13.2	15.3	16.8	14.5	14.8	15.9	16.2	16.7	16.1	15.8	15.7	16.0
Whites	12.1	13.2	15.6	14.4	14.9	16.7	17.0	17.0	14.1	16.2	17.7	15.3	15.7	16.3	16.8	17.5	17.1	16.2	16.4	16.8
Blacks	8.6	11.1	10.1	12.3	11.8	12.1	11.0	11.6	10.3	13.4	13.0	11.7	12.0	15.3	13.2	13.2	13.2	15.7	12.4	11.9
Bone & Joint	0.5	0.7	0.8	0.7	0.8	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	0.8
Brain & Other nervous	2.3	2.8	3.0	3.5	3.4	3.5	4.0	3.8	3.0	3.3	3.4	3.1	3.4	3.6	3.8	4.1	3.5	3.1	3.6	3.3
Hodgkin lymphoma	0.7	0.5	0.7	0.7	-	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	0.5
Kidney & Renal pelvis	0.7	0.8	0.9	0.8	0.6	1.0	0.9	0.9	0.7	0.7	0.9	0.6	0.7	1.1	0.9	0.9	0.9	0.6	0.9	1.1
Leukemia	3.3	4.0	4.6	4.5	4.5	4.6	4.4	4.8	4.1	5.0	5.3	4.6	4.2	4.8	4.8	5.0	5.2	4.8	4.9	4.7
Acute lymphocytic	2.2	3.1	3.5	3.5	3.7	3.5	3.5	4.0	3.2	3.8	4.1	3.5	3.6	3.7	3.9	3.9	4.3	3.8	3.9	3.7
Non-Hodgkin lymphoma	1.0	0.7	0.7	0.8	0.9	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	1.1	1.3
Soft tissue	0.9	0.9	0.9	0.7	1.0	1.0	1.2	1.0	0.8	1.0	1.5	0.9	1.1	0.9	1.0	1.0	1.2	1.3	1.0	1.1
<u>Ages 0-19</u>																				
All Sites																				
All Races	13.0	14.4	16.0	15.7	15.8	16.9	17.1	17.6	15.7	16.5	17.9	15.7	17.0	17.7	17.9	17.7	18.3	17.8	17.5	18.3
Whites	13.4	14.9	17.1	16.0	16.7	18.3	18.5	19.5	16.8	17.8	19.2	16.7	18.4	18.4	19.2	18.6	20.0	18.6	18.3	19.5
Blacks	10.8	10.9	10.5	13.3	12.4	12.9	11.7	11.4	11.8	13.3	13.2	12.4	13.0	15.2	13.1	14.2	13.5	15.8	13.6	12.9
Bone & Joint	0.7	0.9	1.0	0.8	0.9	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	1.1
Brain & Other nervous	2.1	2.5	2.7	3.2	3.1	3.2	3.5	3.4	2.9	3.0	3.0	2.8	3.1	3.2	3.3	3.6	3.2	2.9	3.3	3.2
Hodgkin lymphoma	1.5	1.2	1.4	1.3	0.9	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	1.2
Kidney & Renal pelvis	0.5	0.6	0.7	0.6	0.5	0.8	0.7	0.7	0.6	0.6	0.8	0.5	0.6	0.9	0.7	0.7	0.8	0.5	0.7	0.8
Leukemia	3.0	3.5	4.0	3.9	4.0	4.1	4.0	4.5	3.8	4.4	4.7	4.1	4.0	4.3	4.1	4.3	4.7	4.3	4.3	4.2
Acute lymphocytic	1.9	2.5	2.9	2.9	3.1	3.1	2.9	3.5	2.9	3.3	3.4	3.0	3.2	3.1	3.1	3.2	3.7	3.1	3.3	3.1
Non-Hodgkin lymphoma	1.0	0.8	1.0	1.0	1.1	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	1.7
Soft tissue	0.8	0.9	0.9	0.8	1.1	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	1.1

^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, 1975-2014

By Primary Cancer Site

All Races, Males and Females

Year of Death

Age/Site	1975	1980	1985	1990	1995	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
<u>Ages 0-14</u>																				
All Sites	4.9	4.3	3.6	3.1	2.7	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	2.0
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
Brain & Other nervous	1.0	0.9	0.8	0.9	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	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	0.0	0.1	0.0
Leukemia	2.1	1.7	1.4	1.1	1.0	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	0.5
Acute lymphocytic	1.2	0.9	0.8	0.5	0.5	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	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	0.0	0.1
Soft tissue	0.1	0.2	0.1	0.2	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	0.1
<u>Ages 0-19</u>																				
All Sites	5.1	4.6	3.8	3.4	3.0	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	2.2
Bone & Joint	0.3	0.3	0.3	0.2	0.2	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	0.2
Brain & Other nervous	0.9	0.8	0.8	0.8	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	0.7
Hodgkin lymphoma	0.1	0.1	0.1	0.1	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	0.0	0.1	0.0
Leukemia	2.0	1.8	1.4	1.2	1.0	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	0.6
Acute lymphocytic	1.0	0.9	0.7	0.6	0.5	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.4	0.3	0.3	0.3	0.3	0.3	0.2	0.3
Non-Hodgkin lymphoma	0.4	0.3	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

^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, 1975-2014

By Primary Cancer Site

Whites, Males and Females

Year of Death

Age/Site	1975	1980	1985	1990	1995	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
<u>Ages 0-14</u>																				
All Sites	5.0	4.4	3.7	3.2	2.7	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	2.1
Bone & Joint	0.2	0.2	0.2	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	0.1
Brain & Other nervous	1.0	0.9	0.9	0.9	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	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	0.0	0.1	0.0
Leukemia	2.3	1.8	1.4	1.1	1.0	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	0.5
Acute lymphocytic	1.2	1.0	0.8	0.5	0.5	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	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	0.0	0.1
Soft tissue	0.1	0.2	0.2	0.2	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	0.1
<u>Ages 0-19</u>																				
All Sites	5.3	4.7	3.9	3.5	2.9	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	2.3
Bone & Joint	0.3	0.3	0.3	0.2	0.2	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	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	0.7	0.7	0.7	0.7	0.7	0.6	0.7	0.7	0.7	0.7
Hodgkin lymphoma	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	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	0.0	0.1	0.1	0.1	0.1	0.0	0.1	0.0
Leukemia	2.1	1.8	1.4	1.2	1.0	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	0.6
Acute lymphocytic	1.1	1.0	0.7	0.6	0.5	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	0.3
Non-Hodgkin lymphoma	0.4	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
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

^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, 1975-2014

By Primary Cancer Site

Blacks, Males and Females

Year of Death

Age/Site	1975	1980	1985	1990	1995	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
<u>Ages 0-14</u>																				
All Sites	4.5	3.8	3.3	3.0	2.9	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	2.1
Bone & Joint	0.3	-	-	-	-	-	-	-	-	-	0.2	-	-	-	-	-	-	-	-	0.2
Brain & Other nervous	0.9	0.9	0.6	0.7	0.8	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	0.7
Hodgkin lymphoma	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Kidney & Renal pelvis	-	-	0.2	-	-	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-
Leukemia	1.6	1.2	1.2	0.9	1.0	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	0.5
Acute lymphocytic	0.8	0.6	0.7	0.5	0.4	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	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	-
<u>Ages 0-19</u>																				
All Sites	4.8	4.2	3.5	3.4	3.1	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	2.3
Bone & Joint	0.4	0.3	0.2	0.2	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	0.2
Brain & Other nervous	0.9	0.8	0.6	0.7	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	0.6
Hodgkin lymphoma	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Kidney & Renal pelvis	0.2	-	0.2	-	-	0.1	0.2	-	-	-	-	-	-	-	-	0.1	-	-	-	-
Leukemia	1.6	1.4	1.1	1.0	1.1	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	0.5
Acute lymphocytic	0.7	0.6	0.6	0.5	0.5	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	0.2
Non-Hodgkin lymphoma	0.4	0.3	0.2	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	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.2	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,
1975-2014 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 2010-14
	Years	APC	Years	APC	Years	APC	Years	APC	Years	APC	Years	APC	
<u>Ages 0-14</u>													
All Sites													
All Races	1975-14	0.6*											0.6*
White	1975-14	0.7*											0.7*
Black	1975-14	0.6*											0.6*
Bone & Joint	1975-14	0.4											0.4
Brain & Other nervous system	1975-90	2.1*	1990-14	0.3									0.3
Hodgkin lymphoma	1975-14	-0.6*											-0.6*
Kidney & Renal pelvis	1975-14	-0.1											-0.1
Leukemia	1975-14	0.7*											0.7*
Acute lymphocytic leukemia	1975-14	0.8*											0.8*
Non-Hodgkin lymphoma	1975-14	1.0*											1.0*
Soft tissue	1975-14	1.1*											1.1*
<u>Ages 0-19</u>													
All Sites													
All Races	1975-14	0.6*											0.6*
White	1975-14	0.7*											0.7*
Black	1975-14	0.5*											0.5*
Bone & Joint	1975-14	0.3											0.3
Brain & Other nervous system	1975-83	-0.5	1983-86	8.2	1986-14	0.2							0.2
Hodgkin lymphoma	1975-14	-0.5*											-0.5*
Kidney & Renal pelvis	1975-14	0.1											0.1
Leukemia	1975-14	0.7*											0.7*
Acute lymphocytic leukemia	1975-14	0.8*											0.8*
Non-Hodgkin lymphoma	1975-14	1.2*											1.2*
Soft tissue	1975-14	1.0*											1.0*

Joinpoint Regression Program Version 4.4, January 2017, 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).

^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,
1975-2014 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	2010-14
<u>Ages 0-14</u>													
All Sites	1975-96	-2.9*	1996-14	-1.4*									-1.4*
Bone & Joint	1975-89	-3.6*	1989-14	-0.3									-0.3
Brain & Other nervous system	1975-14	-0.9*											-0.9*
Hodgkin lymphoma	-	-											-
Kidney & Renal pelvis	1975-14	-2.7*											-2.7*
Leukemia	1975-90	-4.3*	1990-14	-2.9*									-2.9*
Acute lymphocytic leukemia	1975-93	-5.2*	1993-14	-3.1*									-3.1*
Non-Hodgkin lymphoma	1975-14	-4.9*											-4.9*
Soft tissue	1975-79	11.3*	1979-95	-2.6*	1995-14	0.2							0.2
<u>Ages 0-19</u>													
All Sites	1975-96	-2.7*	1996-14	-1.4*									-1.4*
Bone & Joint	1975-89	-3.1*	1989-14	-0.3									-0.3
Brain & Other nervous system	1975-09	-1.0*	2009-14	2.0									2.0
Hodgkin lymphoma	1975-14	-5.1*											-5.1*
Kidney & Renal pelvis	1975-14	-2.5*											-2.5*
Leukemia	1975-98	-3.6*	1998-01	0.0	2001-14	-3.2*							-3.2*
Acute lymphocytic leukemia	1975-99	-4.4*	1999-02	2.0	2002-14	-4.2*							-4.2*
Non-Hodgkin lymphoma	1975-14	-4.2*											-4.2*
Soft tissue	1975-79	8.0	1979-14	-0.8*									-0.8*

Joinpoint Regression Program Version 4.4, January 2017, 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).
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 1975-2014.
* 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,
1975-2014 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 2010-14
	Years	APC	Years	APC	Years	APC	Years	APC	Years	APC	Years	APC	
<u>Ages 0-14</u>													
All Sites	1975-96	-3.0*	1996-14	-1.3*									-1.3*
Bone & Joint	1975-90	-3.0*	1990-14	-0.4									-0.4
Brain & Other nervous system	1975-14	-0.8*											-0.8*
Hodgkin lymphoma	-	-											-
Kidney & Renal pelvis	1975-14	-2.6*											-2.6*
Leukemia	1975-89	-4.6*	1989-14	-2.9*									-2.9*
Acute lymphocytic leukemia	1975-90	-5.6*	1990-14	-3.2*									-3.2*
Non-Hodgkin lymphoma	1975-14	-5.0*											-5.0*
Soft tissue	1975-79	12.7*	1979-95	-2.8*	1995-14	0.5							0.5
<u>Ages 0-19</u>													
All Sites	1975-96	-2.7*	1996-14	-1.3*									-1.3*
Bone & Joint	1975-89	-2.7*	1989-14	-0.3									-0.3
Brain & Other nervous system	1975-10	-1.0*	2010-14	3.0									3.0
Hodgkin lymphoma	1975-14	-5.1*											-5.1*
Kidney & Renal pelvis	1975-14	-2.5*											-2.5*
Leukemia	1975-88	-4.0*	1988-14	-2.8*									-2.8*
Acute lymphocytic leukemia	1975-99	-4.4*	1999-03	2.0	2003-14	-4.8*							-4.8*
Non-Hodgkin lymphoma	1975-14	-4.3*											-4.3*
Soft tissue	1975-79	11.6*	1979-96	-1.6*	1996-14	0.3							0.3

Joinpoint Regression Program Version 4.4, January 2017, 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).

^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 1975-2014.

* 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,
1975-2014 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 2010-14
	Years	APC	Years	APC	Years	APC	Years	APC	Years	APC	Years	APC	
<u>Ages 0-14</u>													
All Sites	1975-96	-2.6*	1996-14	-1.4*									-1.4*
Bone & Joint	1975-81	-10.7*	1981-14	-0.5									-0.5
Brain & Other nervous system	1975-14	-1.0*											-1.0*
Hodgkin lymphoma	-	-											-
Kidney & Renal pelvis	1975-14	-2.8*											-2.8*
Leukemia	1975-14	-3.1*											-3.1*
Acute lymphocytic leukemia	1975-82	-0.8	1982-10	-5.4*	2010-14	13.3							13.3
Non-Hodgkin lymphoma	1975-14	-4.3*											-4.3*
Soft tissue	1975-14	-1.2*											-1.2*
<u>Ages 0-19</u>													
All Sites	1975-14	-2.0*											-2.0*
Bone & Joint	1975-84	-6.8*	1984-14	-0.3									-0.3
Brain & Other nervous system	1975-14	-0.9*											-0.9*
Hodgkin lymphoma	-	-											-
Kidney & Renal pelvis	1975-14	-2.6*											-2.6*
Leukemia	1975-14	-2.9*											-2.9*
Acute lymphocytic leukemia	1975-82	-0.5	1982-14	-4.3*									-4.3*
Non-Hodgkin lymphoma	1975-14	-3.5*											-3.5*
Soft tissue	1975-14	-0.9*											-0.9*

Joinpoint Regression Program Version 4.4, January 2017, 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).

^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 1975-2014.

* 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	2002-2006	2007-2013
All Sites											
All Races	58.0	62.4	67.1	68.1	71.6	75.8	77.4	79.3	80.8	83.2	84.5 ^c
Whites	57.9	63.0	67.8	69.9	72.4	76.8	78.3	80.7	81.8	84.9	85.2 ^c
Blacks	57.3	57.7	62.2	56.9	65.3	70.8	73.3	75.6	73.9	74.9	81.9 ^c
Bone & Joint	49.9 ^d	47.8	56.8 ^d	57.3 ^d	66.8 ^d	67.4	74.2	70.3	70.0	79.8	77.4 ^c
Brain & ONS	57.2	57.7	56.9	61.8	64.3	64.5	70.7	75.3	74.0	75.8	74.6 ^c
Hodgkin lymphoma	80.9	86.8	88.1	89.9	87.1	96.8	94.6	96.1	94.4	97.9	97.7 ^c
Leukemia	49.7	58.0	63.0	63.7	71.0	75.5	75.9	80.3	82.7	86.4	87.6 ^c
Acute lymphocytic	57.2	65.7	71.3	72.3	77.7	83.1	83.9	86.9	88.5	91.1	91.8 ^c
Acute myeloid	18.8	25.8	27.8 ^d	30.6 ^d	37.1 ^d	42.2	40.6 ^d	48.7	58.6	65.1	66.4 ^c
Neuroblastoma ^a	52.5	56.6	54.8	52.3	63.2	76.0	66.8	66.5	72.2	72.9	77.6 ^c
Non-Hodgkin lymphoma	43.2	52.7	67.0	69.8	70.8	76.9	80.7	83.2	89.8	85.7	90.4 ^c
Soft tissue	61.3	74.2	69.2	73.0	66.4	79.8	76.7	70.6	76.9	83.2	80.6 ^c
Wilms' tumor ^b	73.1	79.0	86.7	90.7	92.2	91.9	91.7	91.6	93.8	90.5	94.8 ^c

Site	Ages 0-19										
	1975-1977	1978-1980	1981-1983	1984-1986	1987-1989	1990-1992	1993-1995	1996-1998	1999-2001	2002-2006	2007-2013
All Sites											
All Races	61.5	65.2	68.4	70.6	73.5	76.3	77.8	79.8	80.3	83.2	84.8 ^c
Whites	61.3	65.9	69.3	72.5	75.0	77.6	78.5	81.2	81.4	84.6	85.8 ^c
Blacks	59.4	60.3	62.5	58.4	64.3	68.6	74.2	73.9	74.7	74.6	80.8 ^c
Bone & Joint	50.4	48.1	51.2	56.1	64.0	68.8	69.0	67.0	66.7	75.1	73.8 ^c
Brain & ONS	59.1	58.1	58.5	63.9	65.9	66.5	71.6	76.1	74.4	76.0	75.0 ^c
Hodgkin lymphoma	86.2	88.3	85.5	90.6	88.7	94.3	93.9	95.2	95.1	97.1	97.3 ^c
Leukemia	44.9	53.2	58.1	60.4	67.6	71.3	71.9	76.6	77.6	83.1	85.4 ^c
Acute lymphocytic	53.8	61.9	67.1	69.9	75.0	79.8	81.4	84.3	84.8	88.4	90.6 ^c
Acute myeloid	18.7	26.2	27.2	31.4	37.6	41.9	38.6	46.3	51.9	62.6	63.9 ^c
Neuroblastoma ^a	53.1	56.7	53.7	52.5	61.7	75.7	66.8	66.7	71.9	73.0	76.8 ^c
Non-Hodgkin lymphoma	44.6	53.4	63.7	67.6	70.4	72.7	78.0	81.0	84.3	83.9	88.7 ^c
Soft tissue	64.8	68.9	68.2	72.7	68.0	69.7	73.8	72.4	73.0	78.6	77.1 ^c
Wilms' tumor ^b	72.6	78.4	86.8	91.0	92.2	91.3	91.8	91.6	93.8	90.2	94.9 ^c

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

Based on follow-up of patients into 2014.

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 2007-2013 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	
	2010-2014 Num Cases	2010-2014 Rate	1975-2014 APC	1975-1994 APC	1995-2014 APC	2010-2014 Num Deaths	2010-2014 Rate	1975-2014 APC	1975-1994 APC	1995-2014 APC	1975-1977	2007-2013
Ages 0-4												
All Sites	6,344	22.1	0.7*	1.1*	0.4 [®]	2,051	2.0	-2.5*	-2.9*	-1.7* [#]	57.2	84.4 ^c
Soft tissue	489	1.7	1.1*	1.3	1.3	123	0.1	-1.6*	-1.6	-0.2	62.0 ^d	82.2 ^c
Kidney and Renal pelvis	545	1.9	-0.1	0.6	-0.4	65	0.1	-	-5.9*	-	71.9	93.6 ^c
Eye and Orbit	396	1.4	0.0	1.9*	-0.7 [#]	21	0.0	-	-	-	87.2 ^d	95.0
Brain and Other nervous	1,175	4.1	1.1*	2.3*	0.6 [#]	575	0.6	-1.3*	-1.1*	-1.5*	52.0	71.7 ^c
Other endocrine ^g	427	1.5	-	-	-	319	0.3	-	-	-	35.7 ^d	76.7 ^c
Leukemia	2,375	8.3	0.7*	0.7	0.4	638	0.6	-2.8*	-3.6*	-1.9* [#]	55.4	88.9 ^c
Acute lymphocytic	1,896	6.6	0.7*	0.7*	0.2	197	0.2	-4.0*	-5.7*	-2.4* [#]	63.2	94.0 ^c
Ages 5-9												
All Sites	3,706	12.7	0.5*	0.5	0.9*	2,203	2.2	-2.4*	-3.2*	-1.1* [#]	58.4	83.0 ^c
Brain and Other nervous	996	3.4	0.5*	1.2	0.9	931	0.9	-0.5*	-0.6	0.5 [#]	59.1	70.9 ^c
Leukemia	1,258	4.3	0.4*	0.9	0.2	487	0.5	-4.6*	-5.3*	-3.5* [#]	51.0	88.7 ^c
Acute lymphocytic	1,064	3.6	0.7*	1.1	0.2	238	0.2	-5.2*	-6.4*	-4.0* [#]	54.8	91.5 ^c
Ages 10-14												
All Sites	4,129	14.0	0.7*	0.9*	0.6*	2,232	2.2	-2.0*	-2.5*	-1.3* [#]	58.7	85.9 ^c
Bone and Joint	426	1.4	0.3	1.2	1.0	266	0.3	-1.2*	-2.7*	-0.4 [#]	52.8 ^d	76.8 ^c
Brain and Other nervous	787	2.7	0.7*	1.9*	-0.4 [#]	658	0.6	-1.0*	-1.6*	-0.5 [#]	59.5	84.3 ^c
Hodgkin lymphoma	332	1.1	-0.5*	-0.8	0.6	-	-	-	-	-	79.0	97.9 ^c
Leukemia	962	3.3	0.7*	0.7	1.1*	631	0.6	-2.9*	-3.1*	-2.9*	34.0	82.5 ^c
Acute lymphocytic	661	2.2	1.0*	1.5	1.4*	316	0.3	-3.3*	-3.5*	-3.1*	43.0 ^d	85.1 ^c
Ages 15-19												
All Sites	6,844	22.5	0.6*	0.9*	1.0*	3,107	2.9	-1.9*	-2.1*	-1.6* [#]	67.8	85.4 ^c
Bone and Joint	421	1.4	0.2	1.1	0.0	506	0.5	-1.0*	-2.4*	-0.6 [#]	51.0 ^d	68.8 ^c
Melanoma of the skin	288	0.9	0.6	2.0*	-1.0 [#]	28	0.0	-	-	-	76.2 ^d	96.3 ^c
Testis(males)	618	4.0	1.2*	1.8	1.2	35	0.1	-	-	-	66.0 ^d	93.9 ^c
Brain and Other nervous	707	2.3	0.5	1.2	1.0	574	0.5	-1.0*	-1.0*	-0.1 [®]	65.3	76.8 ^c
Thyroid	880	2.9	2.5*	0.5	4.4* [#]	-	-	-	-	-	100.0	99.2
Hodgkin lymphoma	924	3.0	-0.5*	0.0	0.2	46	0.0	-	-4.2*	-	89.0	97.1 ^c
Non-Hodgkin lymphoma	567	1.9	1.5*	2.7*	1.2	157	0.1	-3.1*	-2.4*	-4.3* [#]	47.7 ^d	86.1 ^c
Leukemia	981	3.2	0.7*	0.7	0.6	815	0.8	-2.3*	-1.8*	-2.4*	23.8	73.8 ^c
Acute lymphocytic	542	1.8	0.9*	0.9	0.4	325	0.3	-2.4*	-1.6*	-2.9* [#]	30.0 ^d	81.1 ^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 2007-2013 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 2010-2014.

^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 1995-2014 is significantly different from the APC for 1975-1994 (p<.05).

® The APC for 1995-2014 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	2013
Survival Time																							
1-year	80.5	84.6	86.7	89.6	90.4	92.8	90.9	90.7	91.1	92.5	92.0	91.5	93.3	92.7	92.5	94.0	92.3	92.5	92.3	93.1	95.0	93.8	93.2
2-year	70.9	75.5	78.4	83.0	84.6	86.5	84.8	84.4	85.3	86.0	86.9	87.3	89.3	88.3	87.9	89.3	87.8	88.1	86.6	89.7	91.0	89.1	
3-year	65.3	70.7	74.3	79.7	81.0	83.7	82.4	81.5	82.9	83.3	84.1	84.0	86.1	85.4	84.9	87.8	86.2	86.1	84.0	87.0	89.6		
4-year	62.1	67.6	71.9	77.6	79.0	80.9	80.6	78.8	81.4	81.6	82.5	82.4	85.2	83.9	83.4	86.4	84.7	84.2	83.1	86.0			
5-year	59.8	65.9	70.7	76.5	77.4	80.6	79.3	78.0	79.6	80.7	81.9	81.4	84.1	83.1	82.1	85.7	83.6	83.4	82.6				
6-year	58.1	64.7	69.7	75.8	76.4	79.8	78.5	76.6	79.1	79.6	81.1	80.6	83.7	82.8	81.1	85.1	82.2	83.0					
7-year	57.1	63.9	68.8	75.2	75.9	79.2	78.1	76.2	78.4	79.0	80.1	80.2	83.2	82.1	80.8	84.7	81.6						
8-year	56.5	63.2	68.2	74.7	75.0	78.8	77.0	75.7	78.1	78.3	80.0	79.6	82.5	81.5	80.1	83.7							
9-year	56.1	62.6	67.8	74.3	74.7	78.4	76.7	75.1	77.6	78.3	79.5	79.4	81.8	81.1	79.7								
10-year	55.8	62.1	67.4	74.2	74.6	78.1	76.1	74.8	77.2	78.0	79.3	78.9	81.7	80.9									
11-year	55.5	61.8	67.1	73.8	74.3	78.0	76.0	74.4	76.8	77.8	79.1	78.2	81.1										
12-year	55.2	61.3	66.8	73.6	74.1	77.9	75.7	74.2	76.7	77.7	79.0	77.5											
13-year	54.9	60.9	66.6	73.3	74.0	77.8	75.5	73.7	76.4	77.3	78.9												
14-year	54.6	60.7	66.2	73.1	74.0	77.6	75.3	73.6	76.4	77.2													
15-year	54.3	60.4	66.1	72.9	73.9	77.4	75.3	73.5	76.4														
16-year	54.0	60.1	65.8	72.6	73.2	77.4	75.1	73.2															
17-year	53.6	59.9	65.6	72.3	72.9	77.3	74.8																
18-year	53.4	59.6	65.4	72.1	72.8	77.0																	
19-year	53.1	59.4	65.3	71.9	72.6																		
20-year	53.0	59.2	65.1	71.8																			

^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	2013
Survival Time																							
1-year	82.4	85.7	88.2	90.2	90.1	93.1	91.4	91.7	90.9	91.3	92.3	92.3	93.5	92.4	92.8	94.1	93.2	93.8	93.6	93.0	95.3	94.8	93.9
2-year	73.1	77.3	80.3	83.3	84.6	87.5	85.1	85.3	85.8	84.4	87.3	87.3	89.1	88.0	88.6	89.0	88.4	89.3	88.5	89.5	91.4	89.9	
3-year	68.0	72.5	76.5	80.0	81.3	85.1	82.0	82.5	83.1	81.9	84.3	84.1	86.2	84.7	86.1	87.4	86.6	87.2	86.0	87.0	89.1		
4-year	64.9	69.5	74.0	78.0	79.8	82.4	80.5	79.9	81.4	80.3	82.6	82.3	85.2	83.6	84.5	85.8	84.9	85.2	85.0	85.9			
5-year	62.8	67.8	72.9	76.8	78.4	81.8	78.8	78.8	79.8	79.3	81.8	81.1	84.2	82.4	83.3	85.0	83.5	84.0	84.4				
6-year	61.2	66.5	71.9	76.0	77.4	81.3	77.7	77.7	79.4	78.4	81.2	80.2	83.8	82.2	82.1	84.0	82.3	83.3					
7-year	60.3	65.8	71.1	75.4	76.9	80.8	77.5	77.4	79.0	77.7	80.2	79.9	83.1	81.4	81.7	83.5	81.8						
8-year	59.5	65.0	70.5	74.9	76.0	80.2	76.8	77.0	78.7	77.2	80.0	79.0	82.5	81.0	80.9	82.6							
9-year	59.0	64.3	70.1	74.5	75.7	79.8	76.5	76.5	78.3	77.1	79.7	78.7	82.1	80.5	80.5								
10-year	58.7	63.9	69.6	74.3	75.5	79.5	75.9	76.2	78.0	76.8	79.6	78.4	81.9	80.2									
11-year	58.3	63.5	69.4	74.0	75.4	79.4	75.7	75.8	77.7	76.6	79.4	77.7	81.6										
12-year	58.0	63.1	69.1	73.8	75.1	79.3	75.5	75.3	77.5	76.4	79.1	77.3											
13-year	57.7	62.7	68.8	73.5	75.0	79.2	75.2	74.9	77.3	76.0	78.9												
14-year	57.5	62.4	68.3	73.2	75.0	79.0	75.2	74.9	77.3	75.7													
15-year	57.2	62.2	68.1	73.0	74.9	78.9	75.0	74.8	77.1														
16-year	56.9	61.7	67.8	72.8	74.3	78.7	74.7	74.4															
17-year	56.6	61.5	67.6	72.5	74.1	78.4	74.5																
18-year	56.3	61.3	67.4	72.3	74.0	78.1																	
19-year	56.1	61.0	67.2	72.1	73.9																		
20-year	55.8	60.7	66.9	72.0																			

^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, 2014
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 <39 ^e	>=39 ^f	Complete ^g
<u>Race</u>	<u>Sex</u>										
All Races ^b	Both Sexes	67,020	57,552	52,926	46,382	41,337	34,624	257,299	348,784	+	+
	Males	34,757	30,607	27,359	24,340	21,530	17,107	134,466	179,038	+	+
	Females	32,263	26,945	25,567	22,042	19,807	17,517	122,833	169,746	+	+
White ^b	Both Sexes	53,438	47,186	44,572	38,930	35,007	30,212	212,382	292,628	+	+
	Males	27,742	25,277	23,108	20,327	18,424	14,965	111,340	150,746	+	+
	Females	25,696	21,909	21,464	18,603	16,583	15,247	101,042	141,882	+	+
Black ^b	Both Sexes	8,228	6,538	5,275	4,592	4,023	2,816	27,863	35,469	+	+
	Males	4,231	3,389	2,624	2,397	1,998	1,306	14,230	17,626	+	+
	Females	3,997	3,149	2,651	2,195	2,025	1,510	13,633	17,843	+	+
Asian/ Pacific Islander ^c	Both Sexes	3,051	2,401	1,946	1,794	+	+	9,192	+	+	+
	Males	1,583	1,228	1,057	969	+	+	4,837	+	+	+
	Females	1,468	1,173	889	825	+	+	4,355	+	+	+
Hispanic ^d	Both Sexes	14,399	11,549	9,164	7,346	+	+	45,036	+	+	+
	Males	7,592	6,476	4,965	3,820	+	+	24,307	+	+	+
	Females	6,807	5,073	4,199	3,526	+	+	20,729	+	+	+

^a US 2014 cancer prevalence counts are based on 2014 cancer prevalence proportions from the SEER registries and 1/1/2014 US population estimates based on the average of 2013 and 2014 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: 39 years for 1975-2014 SEER 9 data; 22 years for 1992-2014 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 39 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 <39 and >=39.

- 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 2010-2014

Age <1			Age 1			Age 2		
	Rate	Cases		Rate	Cases		Rate	Cases
All Sites	23.3	1,317	All Sites	21.8	1,238	All Sites	24.3	1,394
Leukemia	4.9	275	Leukemia	6.8	389	Leukemia	10.0	572
Acute Lymphocytic Leukemia	2.0	114	Acute Lymphocytic Leukemia	4.4	248	Acute Lymphocytic Leukemia	8.9	508
Brain and ONS ^d	3.7	207	Brain and ONS ^d	4.4	248	Brain and ONS ^d	4.9	283
Soft Tissue	3.4	191	Kidney and Renal Pelvis	2.1	121	Kidney and Renal Pelvis	2.2	128
Eye and Orbit	3.1	175	Soft Tissue	1.7	94	Eye and Orbit	1.4	82
Other Endocrine	2.7	150	Eye and Orbit	1.6	92	Soft Tissue	1.4	81
Age 3			Age 4			Age 5		
	Rate	Cases		Rate	Cases		Rate	Cases
All Sites	22.7	1,318	All Sites	18.5	1,077	All Sites	14.8	864
Leukemia	11.1	642	Leukemia	8.5	497	Leukemia	5.9	346
Acute Lymphocytic Leukemia	10.1	585	Acute Lymphocytic Leukemia	7.6	441	Acute Lymphocytic Leukemia	5.0	295
Brain and ONS ^d	3.8	218	Brain and ONS ^d	3.8	219	Brain and ONS ^d	3.6	212
Kidney and Renal Pelvis	2.2	126	Kidney and Renal Pelvis	1.4	82	Kidney and Renal Pelvis	1.1	65
Other Endocrine	1.2	68	Non-Hodgkin Lymphoma	1.0	58	Non-Hodgkin Lymphoma	1.1	62
Soft Tissue	1.1	66	Soft Tissue	1.0	57	Soft Tissue	0.6	37
Age 6			Age 7			Age 8		
	Rate	Cases		Rate	Cases		Rate	Cases
All Sites	13.9	817	All Sites	11.7	683	All Sites	11.0	641
Leukemia	4.7	277	Leukemia	3.7	219	Leukemia	3.5	206
Acute Lymphocytic Leukemia	4.2	245	Acute Lymphocytic Leukemia	3.2	185	Acute Lymphocytic Leukemia	3.0	177
Brain and ONS ^d	4.0	235	Brain and ONS ^d	3.5	203	Brain and ONS ^d	3.0	174
Non-Hodgkin Lymphoma	1.3	76	Non-Hodgkin Lymphoma	1.0	60	Non-Hodgkin Lymphoma	1.0	61
Kidney and Renal Pelvis	0.7	44	Soft Tissue	0.8	47	Bones and Joints	0.7	38
Soft Tissue	0.7	39	Kidney and Renal Pelvis	0.5	31	Soft Tissue	0.6	34
Age 9			Age 10			Age 11		
	Rate	Cases		Rate	Cases		Rate	Cases
All Sites	12.1	701	All Sites	12.2	714	All Sites	12.0	705
Leukemia	3.6	210	Leukemia	3.1	179	Leukemia	2.8	162
Acute Lymphocytic Leukemia	2.8	162	Acute Lymphocytic Leukemia	2.5	146	Acute Lymphocytic Leukemia	1.8	108
Brain and ONS ^d	3.0	172	Brain and ONS ^d	3.0	174	Brain and ONS ^d	2.7	156
Non-Hodgkin Lymphoma	1.4	84	Non-Hodgkin Lymphoma	1.3	78	Bones and Joints	1.3	76
Bones and Joints	1.0	58	Bones and Joints	1.1	67	Non-Hodgkin Lymphoma	1.1	67
Soft Tissue	0.6	37	Soft Tissue	0.8	48	Soft Tissue	0.8	45

^a Rates are per 100,000 per year.

^b Top 5 cancer sites were determined based on the 2010-2014 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 2010-2014

Age 12			Age 13			Age 14		
	Rate	Cases		Rate	Cases		Rate	Cases
All Sites	14.3	840	All Sites	15.1	894	All Sites	16.4	976
Leukemia	3.6	209	Leukemia	3.3	197	Leukemia	3.6	215
Acute Lymphocytic Leukemia	2.5	145	Acute Lymphocytic Leukemia	2.1	127	Acute Lymphocytic Leukemia	2.3	135
Brain and ONS ^d	2.7	160	Brain and ONS ^d	2.5	149	Brain and ONS ^d	2.5	148
Bones and Joints	1.7	99	Bones and Joints	1.6	97	Hodgkin Lymphoma	1.6	94
Non-Hodgkin Lymphoma	1.4	82	Non-Hodgkin Lymphoma	1.6	97	Non-Hodgkin Lymphoma	1.6	94
Hodgkin Lymphoma	1.2	70	Hodgkin Lymphoma	1.3	78	Bones and Joints	1.5	87
Age 15			Age 16			Age 17		
	Rate	Cases		Rate	Cases		Rate	Cases
All Sites	19.1	1,141	All Sites	20.1	1,214	All Sites	23.0	1,409
Leukemia	3.6	214	Leukemia	3.5	209	Leukemia	3.3	204
Acute Lymphocytic Leukemia	2.2	134	Acute Lymphocytic Leukemia	2.1	129	Acute Lymphocytic Leukemia	1.7	106
Brain and ONS ^d	2.5	148	Brain and ONS ^d	2.7	164	Hodgkin Lymphoma	3.3	200
Hodgkin Lymphoma	2.3	137	Hodgkin Lymphoma	2.5	153	Thyroid	2.8	172
Non-Hodgkin Lymphoma	2.0	118	Thyroid	2.3	140	Brain and ONS ^d	2.2	136
Bones and Joints	1.9	111	Non-Hodgkin Lymphoma	1.7	101	Non-Hodgkin Lymphoma	2.1	127
Age 18			Age 19					
	Rate	Cases		Rate	Cases			
All Sites	23.6	1,451	All Sites	26.7	1,629			
Thyroid	3.6	220	Thyroid	4.1	248			
Hodgkin Lymphoma	3.1	191	Hodgkin Lymphoma	4.0	243			
Testis ^e	2.9	178	Testis ^e	3.2	195			
Leukemia	2.9	177	Leukemia	2.9	177			
Acute Lymphocytic Leukemia	1.5	93	Acute Lymphocytic Leukemia	1.3	80			
Brain and ONS ^d	2.1	129	Brain and ONS ^d	2.1	130			

^a Rates are per 100,000 per year.

^b Top 5 cancer sites were determined based on the 2010-2014 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 2010-2014

Age <1			Age 1			Age 2		
	Rate	Deaths		Rate	Deaths		Rate	Deaths
All Sites	1.6	311	All Sites	2.0	395	All Sites	2.0	404
Leukemia	0.5	98	Leukemia	0.9	169	Leukemia	0.8	151
Acute Lymphocytic Leukemia	0.1	18	Acute Lymphocytic Leukemia	0.3	61	Acute Lymphocytic Leukemia	0.2	41
Brain and ONS ^d	0.4	76	Brain and ONS ^d	0.4	78	Brain and ONS ^d	0.5	95
Other Endocrine	0.1	28	Other Endocrine	0.2	45	Other Endocrine	0.3	67
Soft Tissue	0.1	27	Liver & IBD ^d	0.1	28	Liver & IBD ^d	0.1	25
Liver & IBD ^d	-	-	Soft Tissue	0.1	24	Soft Tissue	0.1	23
Age 3			Age 4			Age 5		
	Rate	Deaths		Rate	Deaths		Rate	Deaths
All Sites	2.4	476	All Sites	2.3	465	All Sites	2.5	507
Brain and ONS ^d	0.7	132	Brain and ONS ^d	1.0	194	Brain and ONS ^d	1.1	222
Leukemia	0.6	122	Leukemia	0.5	98	Leukemia	0.6	119
Acute Lymphocytic Leukemia	0.2	45	Acute Lymphocytic Leukemia	0.2	32	Acute Lymphocytic Leukemia	0.2	49
Other Endocrine	0.5	101	Other Endocrine	0.4	78	Other Endocrine	0.3	67
Soft Tissue	0.1	26	Soft Tissue	0.1	23	Soft Tissue	0.1	28
Liver & IBD ^d	0.1	24	Kidney and Renal Pelvis	0.1	22	Kidney and Renal Pelvis	0.1	16
Age 6			Age 7			Age 8		
	Rate	Deaths		Rate	Deaths		Rate	Deaths
All Sites	2.1	424	All Sites	2.0	402	All Sites	2.1	421
Brain and ONS ^d	0.9	188	Brain and ONS ^d	0.8	171	Brain and ONS ^d	0.8	170
Leukemia	0.4	75	Leukemia	0.4	92	Leukemia	0.5	100
Acute Lymphocytic Leukemia	0.2	35	Acute Lymphocytic Leukemia	0.2	46	Acute Lymphocytic Leukemia	0.3	54
Other Endocrine	0.4	72	Other Endocrine	0.3	52	Other Endocrine	0.2	41
Soft Tissue	0.1	21	Soft Tissue	0.1	20	Soft Tissue	0.2	32
Kidney and Renal Pelvis	0.1	17	Bones and Joints	0.1	16	Kidney and Renal Pelvis	0.1	17
Age 9			Age 10			Age 11		
	Rate	Deaths		Rate	Deaths		Rate	Deaths
All Sites	2.2	449	All Sites	2.0	405	All Sites	2.0	414
Brain and ONS ^d	0.9	180	Brain and ONS ^d	0.7	153	Brain and ONS ^d	0.6	129
Leukemia	0.5	101	Leukemia	0.5	106	Leukemia	0.6	121
Acute Lymphocytic Leukemia	0.3	54	Acute Lymphocytic Leukemia	0.2	51	Acute Lymphocytic Leukemia	0.3	64
Other Endocrine	0.2	49	Other Endocrine	0.2	40	Bones and Joints	0.2	47
Bones and Joints	0.2	42	Bones and Joints	0.2	31	Soft Tissue	0.2	32
Soft Tissue	0.1	28	Soft Tissue	0.1	30	Other Endocrine	0.1	29

^a Rates are per 100,000 per year. Deaths are for the entire United States over the time period 2010-2014.

^b Top 5 cancer sites were determined based on the 2010-2014 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 2010-2014

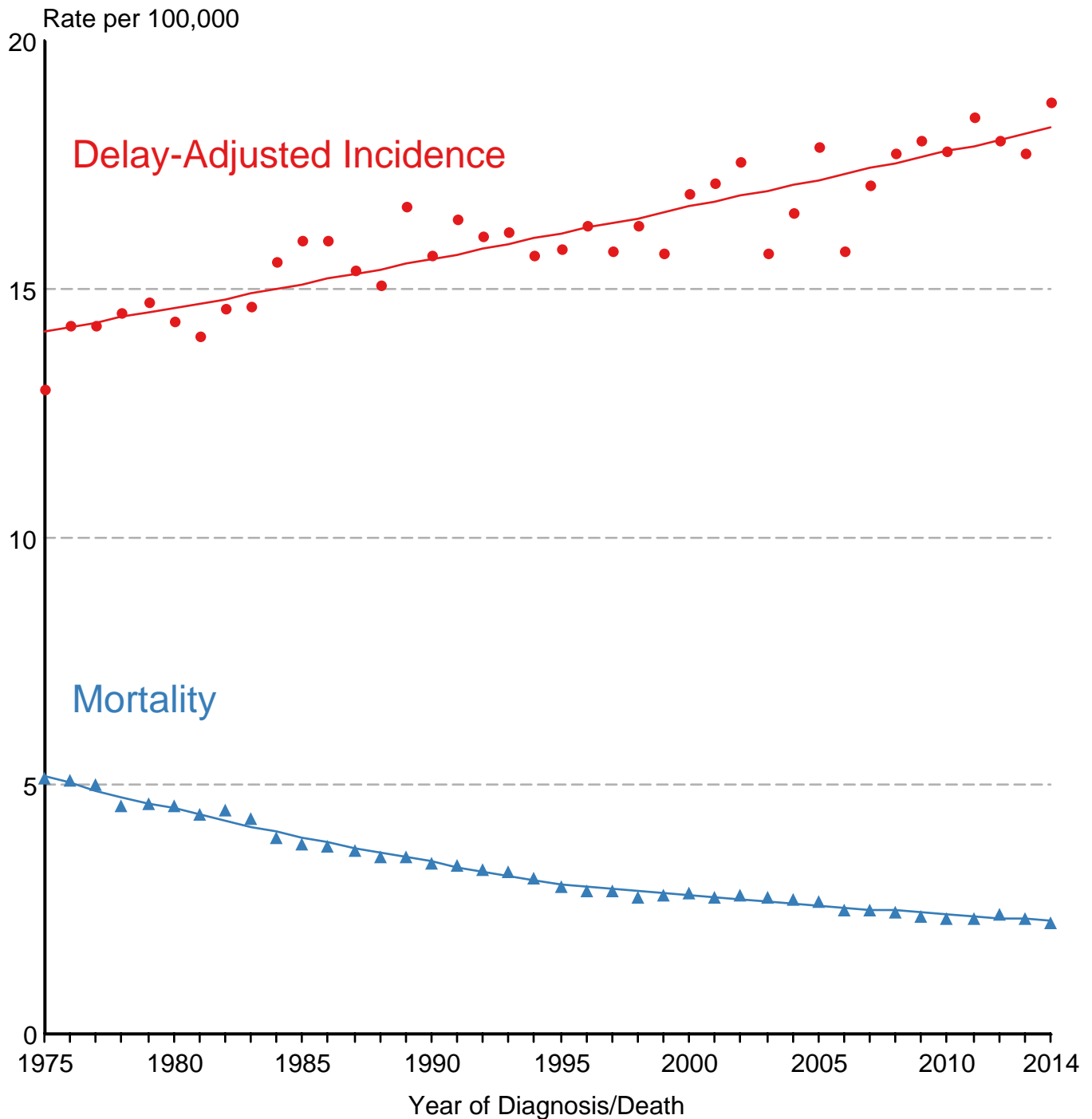
Age 12			Age 13			Age 14		
	Rate	Deaths		Rate	Deaths		Rate	Deaths
All Sites	2.2	454	All Sites	2.1	445	All Sites	2.5	514
Leukemia	0.7	137	Brain and ONS ^d	0.6	122	Leukemia	0.7	151
Acute Lymphocytic Leukemia	0.4	76	Leukemia	0.6	116	Acute Lymphocytic Leukemia	0.3	70
Brain and ONS ^d	0.6	133	Acute Lymphocytic Leukemia	0.3	55	Brain and ONS ^d	0.6	121
Bones and Joints	0.3	53	Bones and Joints	0.3	52	Bones and Joints	0.4	83
Soft Tissue	0.2	32	Soft Tissue	0.2	44	Soft Tissue	0.2	51
Non-Hodgkin Lymphoma	0.1	21	Other Endocrine	0.1	24	Non-Hodgkin Lymphoma	0.1	20
Age 15			Age 16			Age 17		
	Rate	Deaths		Rate	Deaths		Rate	Deaths
All Sites	2.6	547	All Sites	2.5	519	All Sites	2.9	615
Leukemia	0.8	161	Leukemia	0.6	134	Leukemia	0.8	168
Acute Lymphocytic Leukemia	0.3	71	Acute Lymphocytic Leukemia	0.3	53	Acute Lymphocytic Leukemia	0.3	67
Brain and ONS ^d	0.6	128	Bones and Joints	0.5	104	Brain and ONS ^d	0.5	109
Bones and Joints	0.4	81	Brain and ONS ^d	0.5	101	Bones and Joints	0.5	102
Soft Tissue	0.3	54	Soft Tissue	0.2	50	Soft Tissue	0.4	75
Non-Hodgkin Lymphoma	0.1	24	Non-Hodgkin Lymphoma	0.1	28	Non-Hodgkin Lymphoma	0.1	30
Age 18			Age 19					
	Rate	Deaths		Rate	Deaths			
All Sites	3.1	682	All Sites	3.3	744			
Leukemia	0.8	175	Leukemia	0.8	177			
Acute Lymphocytic Leukemia	0.3	68	Acute Lymphocytic Leukemia	0.3	66			
Brain and ONS ^d	0.6	120	Brain and ONS ^d	0.5	116			
Bones and Joints	0.5	119	Bones and Joints	0.4	100			
Soft Tissue	0.4	87	Soft Tissue	0.4	90			
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 2010-2014.^b Top 5 cancer sites were determined based on the 2010-2014 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

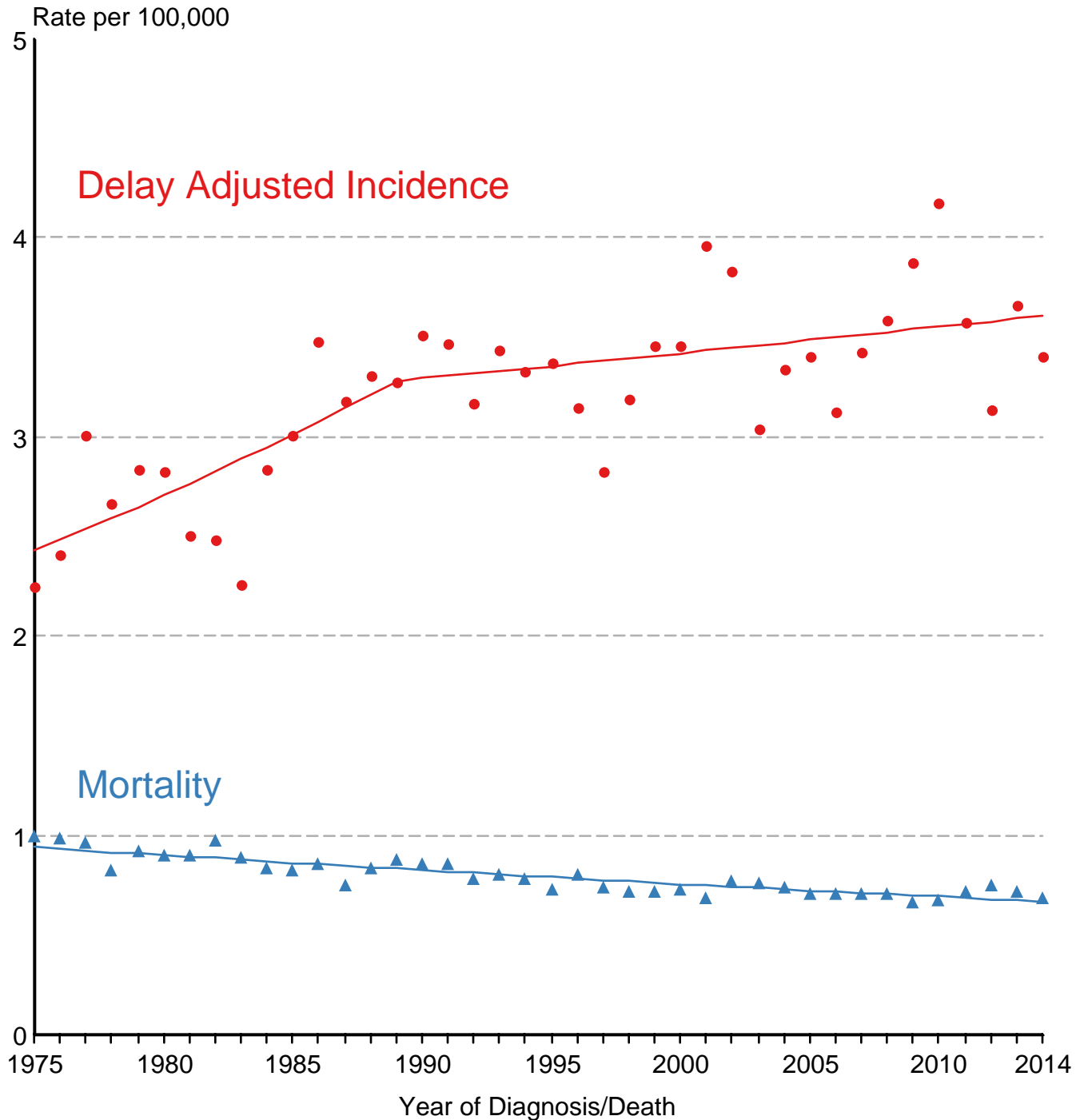
SEER Delay-Adjusted Incidence and US Mortality All Childhood Cancers, Under 20 Years of Age Both Sexes, All Races, 1975-2014



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 4.4, January 2017,
National Cancer Institute.

Figure 28.2

SEER Delay-Adjusted Incidence and US Mortality Brain and CNS, Under 15 Years of Age Both Sexes, All Races, 1975-2014



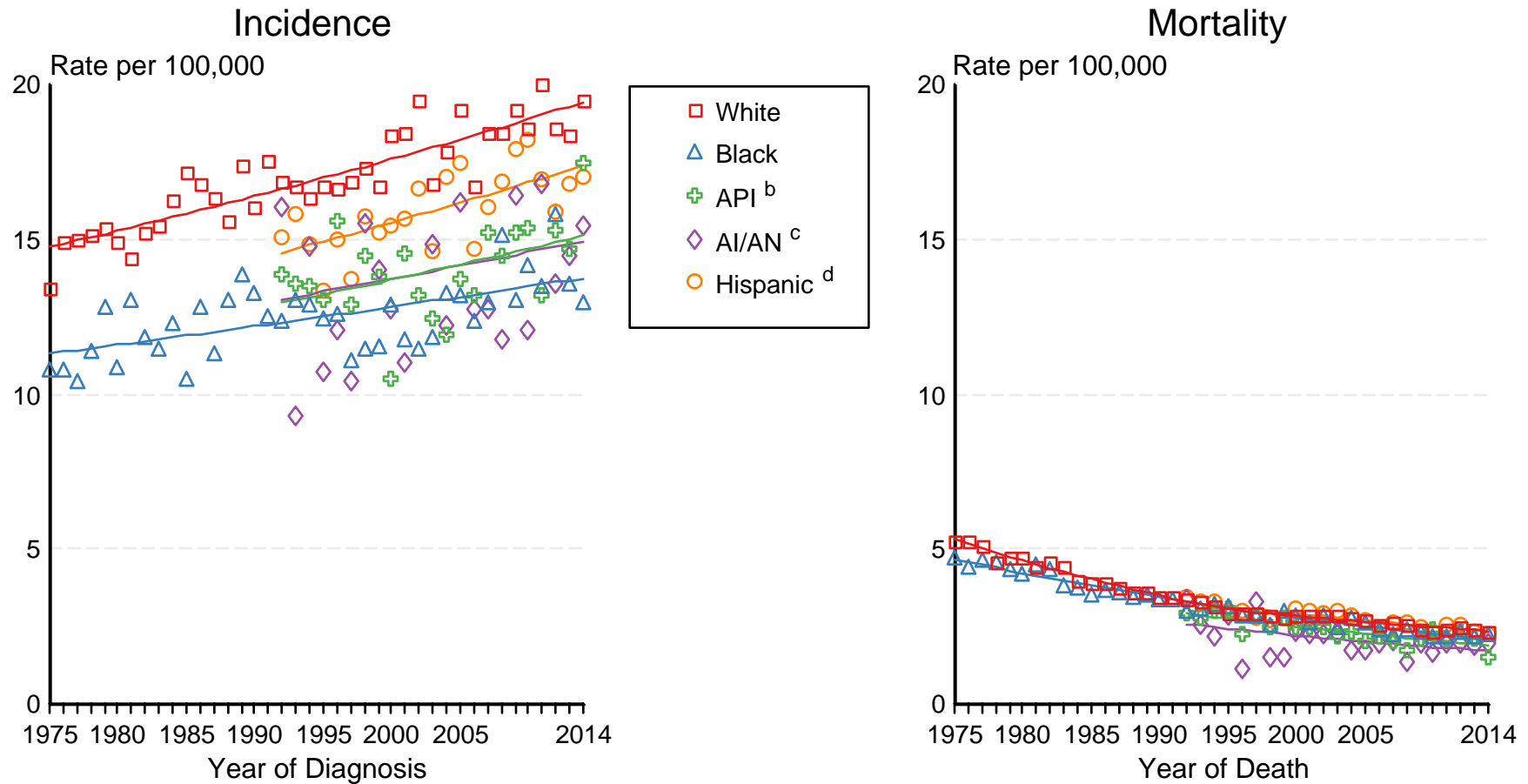
Source: SEER 9 areas and US Mortality Files (National Center for Health Statistics, CDC). Rates are age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1103). Regression lines are calculated using the Joinpoint Regression Program Version 4.4, January 2017, National Cancer Institute.

Figure 28.3

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

Joinpoint Analyses for Whites and Blacks from 1975-2014

and for Asian/Pacific Islanders, American Indians/Alaska Natives and Hispanics from 1992-2014



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 4.4, January 2017, National Cancer Institute. Joinpoint analyses for Whites and Blacks during the 1975-2014 period allow a maximum of 5 joinpoints. Analyses for other ethnic groups during the period 1992-2014 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.