

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<sup>a</sup> and U.S. Death<sup>b</sup> Rates, 2007-2011

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	17.0	15.1	2.2	2.3	2.1	17.5	18.4	16.5	2.4	2.6	2.2
Whites	17.1	18.0	16.1	2.3	2.4	2.1	18.8	19.7	17.8	2.4	2.7	2.2
Blacks	12.6	13.3	12.0	2.1	2.1	2.1	13.0	13.6	12.3	2.3	2.4	2.2
Bone & Joint	0.7	0.8	0.7	0.1	0.1	0.1	0.9	1.0	0.7	0.2	0.2	0.2
Brain & Other nervous	3.4	3.5	3.3	0.7	0.7	0.7	3.1	3.2	2.9	0.6	0.7	0.6
Hodgkin lymphoma	0.6	0.7	0.5	-	-	-	1.2	1.3	1.2	0.0	0.0	0.0
Kidney & Renal pelvis	0.9	0.8	0.9	0.1	0.1	0.1	0.7	0.7	0.8	0.1	0.1	0.1
Leukemia	5.2	5.6	4.9	0.6	0.7	0.6	4.7	5.1	4.3	0.7	0.8	0.6
Acute lymphocytic	4.2	4.5	3.9	0.3	0.3	0.3	3.6	3.9	3.2	0.3	0.3	0.3
Non-Hodgkin lymphoma	1.0	1.3	0.6	0.1	0.1	0.0	1.1	1.5	0.8	0.1	0.1	0.1
Soft tissue	1.1	1.1	1.1	0.1	0.1	0.1	1.1	1.1	1.1	0.2	0.2	0.2

<sup>a</sup> 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).

<sup>b</sup> 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<sup>a</sup>, 1975-2011

## 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
<u>Ages 0-14</u>																					
All Sites																					
All Races	11.6	12.9	14.5	14.3	14.1	14.8	14.1	15.3	14.5	15.4	15.7	15.6	13.2	15.2	16.7	14.5	14.7	15.8	16.0	16.5	15.7
Whites	12.1	13.2	15.6	14.4	14.9	15.0	14.7	16.3	15.7	16.7	17.1	17.0	14.0	16.1	17.7	15.2	15.5	16.2	16.8	17.2	16.8
Blacks	8.6	11.1	10.2	12.3	11.7	11.6	11.2	9.9	10.3	11.8	10.9	11.6	10.2	13.3	13.0	11.4	11.8	15.4	13.1	13.3	12.9
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	1.0	0.7	0.7
Brain & Other nervous	2.3	2.8	3.0	3.5	3.4	3.1	2.8	3.2	3.5	3.4	3.9	3.8	3.0	3.3	3.3	3.1	3.4	3.6	3.8	4.1	3.3
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
Kidney & Renal pelvis	0.7	0.8	0.9	0.8	0.6	1.0	1.0	1.1	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
Leukemia	3.3	4.0	4.6	4.5	4.4	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	4.9	5.1
Acute lymphocytic	2.2	3.1	3.5	3.5	3.6	3.6	3.5	3.9	3.6	3.5	3.5	4.0	3.2	3.8	4.1	3.4	3.6	3.6	3.8	3.9	4.3
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	1.4	0.9
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	0.9	1.1
<u>Ages 0-19</u>																					
All Sites																					
All Races	13.0	14.4	16.0	15.7	15.8	16.2	15.7	16.3	15.7	16.9	17.1	17.5	15.7	16.4	17.8	15.7	16.9	17.6	17.6	17.5	17.9
Whites	13.4	14.9	17.1	16.0	16.7	16.6	16.8	17.4	16.8	18.3	18.5	19.5	16.8	17.7	19.2	16.6	18.2	18.4	19.1	18.2	19.5
Blacks	10.8	10.9	10.6	13.3	12.4	12.6	11.1	11.2	11.0	12.7	11.6	11.4	11.6	13.2	13.0	12.2	12.8	15.2	12.9	14.2	13.0
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
Brain & Other nervous	2.1	2.5	2.7	3.2	3.1	3.0	2.6	2.8	3.0	3.1	3.4	3.4	2.9	3.0	3.0	2.8	3.1	3.2	3.3	3.5	2.9
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
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
Leukemia	3.0	3.5	4.0	3.9	3.9	4.0	3.7	4.1	4.1	4.1	4.0	4.5	3.8	4.4	4.7	4.1	4.1	4.3	4.1	4.2	4.6
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	2.8	3.3	3.4	3.0	3.2	3.1	3.1	3.1	3.7
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	1.2	1.3	1.4	1.5	1.1
Soft tissue	0.8	0.9	0.9	0.8	1.1	1.1	1.0	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

<sup>a</sup> SEER 9 areas (San Francisco, Connecticut, Detroit, Hawaii, Iowa, New Mexico, Seattle, Utah, and Atlanta). Rates are per 100,000 and are age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130).

- Statistic 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<sup>a</sup>, 1975-2011

## 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
<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
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
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
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
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
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
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
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
<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
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
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
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
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
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
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
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

<sup>a</sup> US Mortality Files, National Center for Health Statistics, Centers for Disease Control and Prevention.  
Rates are per 100,000 and are age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130).  
- Statistic 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<sup>a</sup>, 1975-2011

## 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
<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
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
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
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
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
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
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
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
<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
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
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
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
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
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
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
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

<sup>a</sup> US Mortality Files, National Center for Health Statistics, Centers for Disease Control and Prevention.  
Rates are per 100,000 and are age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130).  
- Statistic 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<sup>a</sup>, 1975-2011

## 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
<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
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
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
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
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	-	-
<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
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
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
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
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
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

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

Table 28.6

Trends in SEER Incidence<sup>a</sup> Using the Joinpoint Regression Program,  
1975-2011 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 <sup>d</sup> 2007-11
	Years	APC	Years	APC	Years	APC	Years	APC	Years	APC	Years	APC	
<u>Ages 0-14</u>													
All Sites													
All Races	1975-11	0.6*											0.6*
White	1975-11	0.7*											0.7*
Black	1975-11	0.6*											0.6*
Bone & Joint	1975-11	0.3											0.3
Brain & Other nervous system	1975-89	2.1*	1989-11	0.4									0.4
Hodgkin lymphoma	1975-11	-0.7*											-0.7*
Kidney & Renal pelvis	1975-11	-0.1											-0.1
Leukemia	1975-11	0.7*											0.7*
Acute lymphocytic leukemia	1975-11	0.8*											0.8*
Non-Hodgkin lymphoma	1975-11	0.7*											0.7*
Soft tissue	1975-11	1.1*											1.1*
<u>Ages 0-19</u>													
All Sites													
All Races	1975-11	0.6*											0.6*
White	1975-11	0.7*											0.7*
Black	1975-11	0.4*											0.4*
Bone & Joint	1975-11	0.2											0.2
Brain & Other nervous system	1975-83	-0.5	1983-86	8.4	1986-11	0.2							0.2
Hodgkin lymphoma	1975-11	-0.6*											-0.6*
Kidney & Renal pelvis	1975-11	0.1											0.1
Leukemia	1975-11	0.7*											0.7*
Acute lymphocytic leukemia	1975-11	0.8*											0.8*
Non-Hodgkin lymphoma	1975-11	1.0*											1.0*
Soft tissue	1975-11	1.0*											1.0*

Joinpoint Regression Program Version 4.1.0, April 2014, 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).

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

<sup>b</sup> 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<sup>a</sup> Using the Joinpoint Regression Program,  
1975-2011 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 <sup>d</sup>
	Years	APC	Years	APC	Years	APC	Years	APC	Years	APC	Years	APC	2007-11
<u>Ages 0-14</u>													
All Sites	1975-98	-2.9*	1998-03	0.1	2003-11	-2.4*							-2.4*
Bone & Joint	1975-89	-3.5*	1989-11	-0.4									-0.4
Brain & Other nervous system	1975-11	-1.0*											-1.0*
Hodgkin lymphoma	1975-11	-4.9*											-4.9*
Kidney & Renal pelvis	1975-92	-3.8*	1992-11	-1.4*									-1.4*
Leukemia	1975-90	-4.3*	1990-11	-2.9*									-2.9*
Acute lymphocytic leukemia	1975-93	-5.3*	1993-11	-3.0*									-3.0*
Non-Hodgkin lymphoma	1975-11	-5.0*											-5.0*
Soft tissue	1975-77	23.3	1977-11	-1.2*									-1.2*
<u>Ages 0-19</u>													
All Sites	1975-98	-2.7*	1998-02	0.2	2002-11	-2.3*							-2.3*
Bone & Joint	1975-89	-3.1*	1989-11	-0.3									-0.3
Brain & Other nervous system	1975-11	-1.0*											-1.0*
Hodgkin lymphoma	1975-11	-4.9*											-4.9*
Kidney & Renal pelvis	1975-11	-2.5*											-2.5*
Leukemia	1975-89	-3.9*	1989-92	-0.8	1992-98	-5.0*	1998-01	1.2	2001-11	-3.3*			-3.3*
Acute lymphocytic leukemia	1975-99	-4.4*	1999-02	2.3	2002-11	-4.5*							-4.5*
Non-Hodgkin lymphoma	1975-11	-4.1*											-4.1*
Soft tissue	1975-79	8.9*	1979-11	-1.0*									-1.0*

Joinpoint Regression Program Version 4.1.0, April 2014, 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 1975-2011.  
\* 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<sup>a</sup> Using the Joinpoint Regression Program,  
1975-2011 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 <sup>d</sup> 2007-11
	Years	APC	Years	APC	Years	APC	Years	APC	Years	APC	Years	APC	
<u>Ages 0-14</u>													
All Sites	1975-96	-3.0*	1996-11	-1.3*									-1.3*
Bone & Joint	1975-89	-3.1*	1989-11	-0.6									-0.6
Brain & Other nervous system	1975-11	-0.9*											-0.9*
Hodgkin lymphoma	-	-											-
Kidney & Renal pelvis	1975-11	-2.6*											-2.6*
Leukemia	1975-89	-4.6*	1989-11	-2.9*									-2.9*
Acute lymphocytic leukemia	1975-91	-5.5*	1991-11	-2.9*									-2.9*
Non-Hodgkin lymphoma	1975-11	-5.0*											-5.0*
Soft tissue	1975-79	12.7*	1979-95	-2.8*	1995-11	0.5							0.5
<u>Ages 0-19</u>													
All Sites	1975-98	-2.7*	1998-03	0.2	2003-11	-2.4*							-2.4*
Bone & Joint	1975-89	-2.7*	1989-11	-0.3									-0.3
Brain & Other nervous system	1975-11	-1.0*											-1.0*
Hodgkin lymphoma	1975-11	-4.9*											-4.9*
Kidney & Renal pelvis	1975-11	-2.4*											-2.4*
Leukemia	1975-88	-4.1*	1988-11	-2.7*									-2.7*
Acute lymphocytic leukemia	1975-82	-3.3*	1982-88	-6.5*	1988-11	-2.8*							-2.8*
Non-Hodgkin lymphoma	1975-11	-4.2*											-4.2*
Soft tissue	1975-79	11.5*	1979-96	-1.6*	1996-11	0.0							0.0

Joinpoint Regression Program Version 4.1.0, April 2014, 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).

<sup>a</sup> Trends are from US Mortality Files, National Center for Health Statistics, Centers for Disease Control and Prevention.

<sup>b</sup> The AAPC is the Average Annual Percent Change and is based on the APCs calculated by Joinpoint over the time range of 1975-2011.

\* 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<sup>a</sup> Using the Joinpoint Regression Program,  
1975-2011 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 <sup>d</sup> 2007-11
	Years	APC	Years	APC	Years	APC	Years	APC	Years	APC	Years	APC	
<u>Ages 0-14</u>													
All Sites	1975-96	-2.6*	1996-11	-1.5*									-1.5*
Bone & Joint	1975-81	-10.6*	1981-11	-0.5									-0.5
Brain & Other nervous system	1975-11	-1.1*											-1.1*
Hodgkin lymphoma	-	-											-
Kidney & Renal pelvis	1975-11	-2.7*											-2.7*
Leukemia	1975-11	-3.3*											-3.3*
Acute lymphocytic leukemia	1975-11	-4.8*											-4.8*
Non-Hodgkin lymphoma	1975-11	-4.5*											-4.5*
Soft tissue	1975-11	-1.4*											-1.4*
<u>Ages 0-19</u>													
All Sites	1975-11	-2.1*											-2.1*
Bone & Joint	1975-84	-6.5*	1984-11	-0.5									-0.5
Brain & Other nervous system	1975-11	-1.1*											-1.1*
Hodgkin lymphoma	-	-											-
Kidney & Renal pelvis	1975-11	-2.4*											-2.4*
Leukemia	1975-11	-2.9*											-2.9*
Acute lymphocytic leukemia	1975-82	0.1	1982-11	-4.7*									-4.7*
Non-Hodgkin lymphoma	1975-11	-3.4*											-3.4*
Soft tissue	1975-11	-1.1*											-1.1*

Joinpoint Regression Program Version 4.1.0, April 2014, 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).

<sup>a</sup> Trends are from US Mortality Files, National Center for Health Statistics, Centers for Disease Control and Prevention.

<sup>b</sup> The AAPC is the Average Annual Percent Change and is based on the APCs calculated by Joinpoint over the time range of 1975-2011.

\* 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	1999-2003	2004-2010
All Sites										
All Races	58.0	62.4	67.0	68.1	71.6	75.8	77.4	79.2	81.3	83.1 <sup>c</sup>
Whites	57.9	63.0	67.7	69.8	72.4	76.8	78.3	80.5	82.7	84.4 <sup>c</sup>
Blacks	57.3	57.7	62.2	57.0	65.3	70.7	73.0	75.2	73.6	77.4 <sup>c</sup>
Bone & Joint	49.9 <sup>d</sup>	47.8	56.8 <sup>d</sup>	57.3 <sup>d</sup>	66.8 <sup>d</sup>	67.4	74.1	70.3	71.3	78.9 <sup>c</sup>
Brain & ONS	56.9	57.7	56.6	61.7	64.2	64.4	70.7	75.1	74.4	74.1 <sup>c</sup>
Hodgkin lymphoma	80.9	86.8	88.1	89.9	87.1	96.8	94.6	96.1	95.0	97.6 <sup>c</sup>
Leukemia	49.7	58.0	62.9	63.6	71.1	75.5	75.9	80.3	83.9	87.2 <sup>c</sup>
Acute lymphocytic	57.2	65.7	71.3	72.2	77.8	83.1	83.8	86.9	89.7	91.8 <sup>c</sup>
Acute myeloid	18.8	25.8	26.7 <sup>d</sup>	30.6 <sup>d</sup>	37.1 <sup>d</sup>	42.2	40.6 <sup>d</sup>	48.6	58.0	66.3 <sup>c</sup>
Neuroblastoma <sup>a</sup>	52.5	56.6	54.5	52.3	62.9	76.0	66.8	66.1	71.7	76.6 <sup>c</sup>
Non-Hodgkin lymphoma	43.2	52.7	66.9	69.5	70.7	76.9	80.7	83.2	89.5	85.6 <sup>c</sup>
Soft tissue	61.3	74.2	69.2	72.9	66.4	79.8	76.7	70.5	79.0	81.3 <sup>c</sup>
Wilms' tumor <sup>b</sup>	73.1	79.0	86.7	90.7	92.2	91.9	91.7	91.6	92.3	91.7 <sup>c</sup>

Site	Ages 0-19									
	1975-1977	1978-1980	1981-1983	1984-1986	1987-1989	1990-1992	1993-1995	1996-1998	1999-2003	2004-2010
All Sites										
All Races	61.5	65.2	68.3	70.5	73.5	76.2	77.7	79.7	81.1	83.5 <sup>c</sup>
Whites	61.3	65.8	69.2	72.4	75.0	77.6	78.5	81.0	82.3	84.8 <sup>c</sup>
Blacks	59.5	60.0	62.5	58.5	64.4	68.5	74.0	73.6	74.6	76.2 <sup>c</sup>
Bone & Joint	50.4	48.1	51.2	56.0	64.0	68.8	68.9	67.0	68.6	75.5 <sup>c</sup>
Brain & ONS	58.9	58.1	58.3	63.9	65.9	66.4	71.4	75.9	75.0	74.0 <sup>c</sup>
Hodgkin lymphoma	86.2	88.3	85.5	90.6	88.7	94.2	93.9	95.2	95.3	97.3 <sup>c</sup>
Leukemia	44.9	53.2	58.0	60.3	67.7	71.3	71.8	76.6	79.1	85.0 <sup>c</sup>
Acute lymphocytic	53.8	61.9	67.1	69.9	75.0	79.8	81.4	84.3	86.1	90.0 <sup>c</sup>
Acute myeloid	18.7	26.2	26.4	31.4	37.6	41.9	38.6	46.2	53.5	65.1 <sup>c</sup>
Neuroblastoma <sup>a</sup>	53.1	56.7	53.4	52.5	61.5	75.7	66.8	66.2	71.4	76.3 <sup>c</sup>
Non-Hodgkin lymphoma	44.6	53.4	63.8	67.4	70.4	72.7	77.9	81.0	86.0	83.9 <sup>c</sup>
Soft tissue	64.8	68.9	68.4	72.6	68.0	69.7	73.7	72.2	73.8	78.1 <sup>c</sup>
Wilms' tumor <sup>b</sup>	72.6	78.4	86.8	91.0	92.2	91.3	91.7	91.7	92.3	91.5 <sup>c</sup>

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

Based on follow-up of patients into 2011.

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

<sup>a</sup> Neuroblastoma is defined as histologies 9490-9509.

<sup>b</sup> Wilms' tumor is defined as histologies 8959-8960.

<sup>c</sup> The difference between 1975-1977 and 2004-2010 is statistically significant ( $p < .05$ ).

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

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

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

Table 28.9

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

Age/Site	SEER Incidence <sup>a</sup>					US Mortality <sup>b</sup>					5-year Relative Survival <sup>a</sup>	
	2007-2011 Num Cases	2007-2011 Rate	1975-2011 APC	1975-1993 APC	1994-2011 APC	2007-2011 Num Deaths	2007-2011 Rate	1975-2011 APC	1975-1993 APC	1994-2011 APC	1975-1977	2004-2010
<b>Ages 0-4</b>												
All Sites	6,456	22.3	0.7*	1.2*	0.7*	2,155	2.1	-2.6*	-2.9*	-1.9*#	57.2	84.0 <sup>c</sup>
Soft tissue	476	1.6	1.0*	0.2	1.6	116	0.1	-1.8*	-1.7	-1.3	62.0 <sup>d</sup>	85.8 <sup>c</sup>
Kidney and Renal pelvis	570	2.0	-0.1	0.1	-1.2	60	0.1	-	-6.1*	-	71.9	90.0 <sup>c</sup>
Eye and Orbit	389	1.3	0.2	2.1*	-0.4#	-	-	-	-	-	87.2 <sup>d</sup>	95.8 <sup>c</sup>
Brain and Other nervous	1,201	4.1	1.2*	2.5*	1.1* <sup>®</sup>	589	0.6	-1.3*	-1.0*	-1.5*	52.0	72.5 <sup>c</sup>
Other endocrine <sup>g</sup>	422	1.5	-	-	-	345	0.3	-	-	-	35.7 <sup>d</sup>	76.9 <sup>c</sup>
Leukemia	2,416	8.3	0.8*	0.8*	0.8	676	0.7	-2.9*	-3.7*	-2.1*#	55.4	88.4 <sup>c</sup>
Acute lymphocytic	1,963	6.8	0.8*	0.9*	0.7	223	0.2	-4.1*	-5.7*	-2.0*#	63.2	93.0 <sup>c</sup>
<b>Ages 5-9</b>												
All Sites	3,634	12.7	0.5*	0.8*	1.2*	2,294	2.3	-2.5*	-3.2*	-1.1*#	58.3	81.2 <sup>c</sup>
Brain and Other nervous	992	3.5	0.6*	1.4	1.4*	904	0.9	-0.5*	-0.6	0.3 <sup>®</sup>	58.4	71.4 <sup>c</sup>
Leukemia	1,236	4.3	0.5*	1.5*	0.7	565	0.6	-4.7*	-5.3*	-3.2*#	51.0	89.2 <sup>c</sup>
Acute lymphocytic	1,058	3.7	0.7*	1.7*	0.8	307	0.3	-5.3*	-6.4*	-3.4*#	54.8	94.3 <sup>c</sup>
<b>Ages 10-14</b>												
All Sites	4,017	13.5	0.6*	0.9*	0.2 <sup>®</sup>	2,227	2.1	-2.1*	-2.5*	-1.5*#	58.6	83.2 <sup>c</sup>
Bone and Joint	420	1.4	0.1	1.0	-0.4	252	0.2	-1.4*	-2.8*	-0.6#	52.8 <sup>d</sup>	79.3 <sup>c</sup>
Brain and Other nervous	782	2.6	0.7*	1.8*	-0.7#	613	0.6	-1.2*	-1.6*	-0.9*	59.5	80.2 <sup>c</sup>
Hodgkin lymphoma	345	1.2	-0.7*	-0.7	-0.1	-	-	-	-	-	79.0	97.9 <sup>c</sup>
Leukemia	964	3.2	0.6*	1.1	1.1	723	0.7	-2.9*	-3.1*	-2.6*	34.0	81.5 <sup>c</sup>
Acute lymphocytic	650	2.2	0.9*	2.0	1.3	349	0.3	-3.3*	-3.5*	-3.0*	43.0 <sup>d</sup>	84.4 <sup>c</sup>
<b>Ages 15-19</b>												
All Sites	6,763	21.6	0.6*	1.0*	0.7*	3,242	2.9	-1.9*	-2.1*	-1.8*	67.9	84.3 <sup>c</sup>
Bone and Joint	418	1.3	0.2	0.9	-0.5	525	0.5	-1.1*	-2.6*	-0.7#	51.0 <sup>d</sup>	70.9 <sup>c</sup>
Melanoma of the skin	353	1.1	0.9*	2.4*	0.1	28	0.0	-	-	-	76.2 <sup>d</sup>	96.0 <sup>c</sup>
Testis(males)	634	3.9	1.4*	1.8	1.7*	31	0.1	-	-	-	66.0 <sup>d</sup>	95.4 <sup>c</sup>
Brain and Other nervous	655	2.1	0.1	1.6	-0.2	518	0.5	-1.2*	-1.0*	-1.2*	65.3	73.7
Thyroid	770	2.5	1.9*	0.8	3.4*#	-	-	-	-	-	100.0	99.0
Hodgkin lymphoma	995	3.2	-0.6*	0.0	0.0	69	0.1	-	-3.9*	-	89.0	97.1 <sup>c</sup>
Non-Hodgkin lymphoma	531	1.7	1.5*	2.3*	0.7	210	0.2	-3.0*	-2.2*	-3.5* <sup>®</sup>	47.7 <sup>d</sup>	81.4 <sup>c</sup>
Leukemia	983	3.1	0.8*	0.5	0.8	910	0.8	-2.3*	-1.9*	-2.5*	23.8	73.0 <sup>c</sup>
Acute lymphocytic	560	1.8	1.2*	1.1	1.7	361	0.3	-2.3*	-1.5*	-2.8* <sup>®</sup>	30.0 <sup>d</sup>	76.6 <sup>c</sup>

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).

<sup>a</sup> 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).

<sup>b</sup> US Mortality Files, National Center for Health Statistics, Centers for Disease Control and Prevention.

<sup>c</sup> The difference between 1975-1977 and 2004-2010 is statistically significant (p<.05).

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

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

<sup>f</sup> Sites were chosen based on more than 100 SEER incidence cases between 2007-2011.

<sup>g</sup> 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 1994-2011 is significantly different from the APC for 1975-1993 (p<.05).

® The APC for 1994-2011 is significantly different from the APC for 1975-1993 (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<sup>a</sup> 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
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	92.1	92.7
2-year	70.9	75.5	78.4	82.9	84.6	86.4	84.7	84.3	85.3	86.0	86.8	87.2	89.2	88.2	88.0	89.3	87.7	88.0	86.3	
3-year	65.2	70.7	74.3	79.7	81.0	83.6	82.3	81.5	82.8	83.2	84.0	83.9	86.1	85.3	85.0	87.7	86.0	85.9		
4-year	62.0	67.5	71.9	77.6	78.9	80.8	80.5	78.8	81.3	81.6	82.4	82.2	85.1	83.8	83.5	86.3	84.5			
5-year	59.8	65.8	70.6	76.4	77.3	80.4	79.2	78.0	79.5	80.6	81.7	81.2	84.0	83.0	82.1	85.5				
6-year	58.1	64.7	69.7	75.8	76.4	79.7	78.3	76.5	79.0	79.5	80.9	80.4	83.6	82.6	81.1					
7-year	57.1	63.8	68.7	75.2	75.9	79.1	77.9	76.1	78.2	78.9	79.9	79.9	83.1	81.9						
8-year	56.4	63.1	68.2	74.7	75.0	78.6	76.8	75.6	78.0	78.1	79.8	79.3	82.3							
9-year	56.0	62.5	67.8	74.3	74.7	78.3	76.6	75.0	77.4	78.1	79.3	79.0								
10-year	55.8	62.0	67.3	74.1	74.6	77.9	75.9	74.7	77.0	77.8	79.0									
11-year	55.4	61.7	67.1	73.8	74.4	77.8	75.8	74.1	76.6	77.6										
12-year	55.1	61.2	66.8	73.6	74.1	77.7	75.4	73.9	76.5											
13-year	54.8	60.8	66.5	73.3	74.0	77.6	75.2	73.4												
14-year	54.5	60.5	66.1	73.0	74.0	77.4	75.1													
15-year	54.3	60.3	66.0	72.8	73.8	77.2														
16-year	53.9	60.0	65.7	72.5	73.1															
17-year	53.5	59.8	65.5	72.3																
18-year	53.3	59.5	65.4																	
19-year	53.0	59.3	65.2																	
20-year	52.9	59.1	65.0																	

<sup>a</sup> 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<sup>a</sup> 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
Survival Time																				
1-year	82.4	85.7	88.2	90.2	90.0	93.1	91.3	91.7	90.8	91.2	92.3	92.2	93.5	92.3	92.8	94.1	93.0	93.8	93.5	92.6
2-year	73.0	77.2	80.3	83.3	84.5	87.4	85.1	85.3	85.7	84.3	87.1	87.2	89.0	87.9	88.6	89.0	88.3	89.3	88.3	
3-year	67.9	72.4	76.5	79.9	81.3	85.0	81.9	82.5	83.0	81.9	84.2	84.0	86.1	84.7	86.1	87.3	86.4	87.0		
4-year	64.8	69.5	74.0	78.0	79.8	82.3	80.4	79.9	81.3	80.3	82.4	82.1	85.1	83.5	84.5	85.7	84.6			
5-year	62.8	67.8	72.8	76.7	78.3	81.7	78.7	78.8	79.7	79.2	81.6	80.9	84.0	82.3	83.3	84.8				
6-year	61.1	66.5	71.9	76.0	77.4	81.1	77.6	77.6	79.3	78.3	81.0	80.0	83.6	82.0	82.0					
7-year	60.2	65.7	71.1	75.4	76.9	80.6	77.4	77.3	78.8	77.6	80.0	79.6	82.9	81.3						
8-year	59.5	64.9	70.4	74.9	75.9	80.1	76.6	76.9	78.6	77.0	79.8	78.8	82.2							
9-year	58.9	64.2	70.0	74.5	75.7	79.7	76.4	76.5	78.2	76.9	79.4	78.4								
10-year	58.6	63.8	69.6	74.3	75.5	79.4	75.7	76.1	77.8	76.6	79.3									
11-year	58.3	63.4	69.3	73.9	75.4	79.2	75.5	75.6	77.5	76.5										
12-year	57.9	63.0	69.1	73.7	75.1	79.1	75.3	75.1	77.3											
13-year	57.7	62.6	68.8	73.4	75.0	79.0	75.0	74.6												
14-year	57.4	62.3	68.3	73.1	74.9	78.8	74.9													
15-year	57.2	62.1	68.1	73.0	74.8	78.6														
16-year	56.8	61.6	67.8	72.7	74.2															
17-year	56.5	61.4	67.6	72.4																
18-year	56.2	61.2	67.3																	
19-year	56.0	60.9	67.1																	
20-year	55.7	60.6	66.8																	

<sup>a</sup> 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<sup>a</sup> on January 1, 2011  
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 <19 <sup>e</sup>	0 to <36 <sup>e</sup>	>=36 <sup>f</sup>	Complete <sup>g</sup>
<u>Race</u>	<u>Sex</u>										
All Races <sup>b</sup>	Both Sexes	63,918	56,496	49,430	44,260	37,272	31,407	221,734	314,920	+	+
	Males	33,711	30,073	25,682	22,844	19,261	15,625	116,561	162,108	+	+
	Females	30,207	26,423	23,748	21,416	18,011	15,782	105,173	152,812	+	+
White <sup>b</sup>	Both Sexes	51,221	47,428	41,632	37,233	32,076	27,599	184,028	265,647	+	+
	Males	27,178	25,326	21,576	19,294	16,662	13,852	97,071	137,293	+	+
	Females	24,043	22,102	20,056	17,939	15,414	13,747	86,957	128,354	+	+
Black <sup>b</sup>	Both Sexes	7,930	5,674	4,812	4,506	3,300	2,583	23,560	31,387	+	+
	Males	4,094	2,923	2,498	2,250	1,573	1,197	12,070	15,552	+	+
	Females	3,836	2,751	2,314	2,256	1,727	1,386	11,490	15,835	+	+
Asian/ Pacific Islander <sup>c</sup>	Both Sexes	2,726	2,130	1,787	+	+	+	7,880	+	+	+
	Males	1,429	1,128	974	+	+	+	4,136	+	+	+
	Females	1,297	1,002	813	+	+	+	3,744	+	+	+
Hispanic <sup>d</sup>	Both Sexes	13,347	10,204	7,990	+	+	+	36,739	+	+	+
	Males	7,353	5,580	4,167	+	+	+	19,904	+	+	+
	Females	5,994	4,624	3,823	+	+	+	16,835	+	+	+

<sup>a</sup> US 2011 cancer prevalence counts are based on 2011 cancer prevalence proportions from the SEER registries and 1/1/2011 US population estimates based on the average of 2010 and 2011 population estimates from the US Bureau of the Census.

<sup>b c d</sup> Prevalence was calculated using the First Malignant Primary Only for a person. Statistics based on (b) SEER 9 Areas (c) SEER 11 Areas and Rural Georgia (d) NHIA for Hispanic for SEER 11 Areas and Rural Georgia.

<sup>e</sup> Maximum limited-duration prevalence: 36 years for 1975-2011 SEER 9 data; 19 years for 1992-2011 SEER 11 data (used to calculate prevalence for Hispanics and Asian Pacific Islanders).

<sup>f g</sup> (f) Cases diagnosed more than 36 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 <36 and >=36.

- 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<sup>a</sup> and Counts for the Top 5 Cancer Sites<sup>b</sup> by Single Year of Age at Diagnosis

SEER Cancer Incidence<sup>c</sup> 2007-2011

Age <1			Age 1			Age 2		
	Rate	Cases		Rate	Cases		Rate	Cases
All Sites	23.7	1,378	All Sites	22.6	1,302	All Sites	24.4	1,407
Leukemia	4.6	269	Leukemia	6.8	394	Leukemia	11.0	633
Acute Lymphocytic Leukemia	2.0	116	Acute Lymphocytic Leukemia	4.5	259	Acute Lymphocytic Leukemia	9.9	570
Brain and ONS <sup>d</sup>	3.9	228	Brain and ONS <sup>d</sup>	4.7	272	Brain and ONS <sup>d</sup>	4.4	252
Soft Tissue	3.3	192	Kidney and Renal Pelvis	2.2	128	Kidney and Renal Pelvis	2.3	135
Eye and Orbit	2.9	166	Soft Tissue	1.8	102	Other Endocrine	1.3	73
Other Endocrine	2.6	152	Eye and Orbit	1.6	92	Soft Tissue	1.2	70
Age 3			Age 4			Age 5		
	Rate	Cases		Rate	Cases		Rate	Cases
All Sites	22.4	1,301	All Sites	18.3	1,068	All Sites	14.2	821
Leukemia	10.8	629	Leukemia	8.4	491	Leukemia	5.5	321
Acute Lymphocytic Leukemia	9.8	569	Acute Lymphocytic Leukemia	7.7	449	Acute Lymphocytic Leukemia	4.9	285
Brain and ONS <sup>d</sup>	4.0	234	Brain and ONS <sup>d</sup>	3.7	215	Brain and ONS <sup>d</sup>	3.6	211
Kidney and Renal Pelvis	2.2	127	Kidney and Renal Pelvis	1.4	84	Non-Hodgkin Lymphoma	1.2	72
Other Endocrine	1.3	74	Soft Tissue	0.9	53	Kidney and Renal Pelvis	0.9	52
Soft Tissue	1.0	59	Non-Hodgkin Lymphoma	0.9	53	Soft Tissue	0.7	40
Age 6			Age 7			Age 8		
	Rate	Cases		Rate	Cases		Rate	Cases
All Sites	13.8	790	All Sites	12.0	688	All Sites	12.0	680
Leukemia	4.9	280	Leukemia	4.1	233	Leukemia	3.5	197
Acute Lymphocytic Leukemia	4.5	258	Acute Lymphocytic Leukemia	3.3	189	Acute Lymphocytic Leukemia	2.9	164
Brain and ONS <sup>d</sup>	3.7	213	Brain and ONS <sup>d</sup>	3.7	212	Brain and ONS <sup>d</sup>	3.4	195
Non-Hodgkin Lymphoma	1.0	56	Non-Hodgkin Lymphoma	0.9	52	Non-Hodgkin Lymphoma	1.0	59
Kidney and Renal Pelvis	0.9	51	Soft Tissue	0.8	43	Bones and Joints	0.7	40
Soft Tissue	0.7	40	Bones and Joints	0.5	30	Soft Tissue	0.6	35
Age 9			Age 10			Age 11		
	Rate	Cases		Rate	Cases		Rate	Cases
All Sites	11.5	655	All Sites	11.2	662	All Sites	12.6	739
Leukemia	3.6	205	Leukemia	3.1	184	Leukemia	3.2	188
Acute Lymphocytic Leukemia	2.9	162	Acute Lymphocytic Leukemia	2.3	135	Acute Lymphocytic Leukemia	2.2	129
Brain and ONS <sup>d</sup>	2.8	161	Brain and ONS <sup>d</sup>	2.7	159	Brain and ONS <sup>d</sup>	2.9	169
Non-Hodgkin Lymphoma	1.1	65	Bones and Joints	1.0	61	Bones and Joints	1.3	76
Bones and Joints	0.9	53	Non-Hodgkin Lymphoma	1.0	58	Non-Hodgkin Lymphoma	1.3	74
Soft Tissue	0.8	44	Soft Tissue	0.8	49	Soft Tissue	0.9	52

<sup>a</sup> Rates are per 100,000 per year.

<sup>b</sup> Top 5 cancer sites were determined based on the 2007-2011 age-specific rate.

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

<sup>d</sup> ONS = Other Nervous System. IBD = Intrahepatic Bile Duct.

<sup>e</sup> 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<sup>a</sup> and Counts for the Top 5 Cancer Sites<sup>b</sup> by Single Year of Age at Diagnosis

SEER Cancer Incidence<sup>c</sup> 2007-2011

Age 12			Age 13			Age 14		
	Rate	Cases		Rate	Cases		Rate	Cases
All Sites	12.9	768	All Sites	14.3	858	All Sites	16.4	990
Leukemia	3.0	177	Leukemia	3.3	197	Leukemia	3.6	218
Acute Lymphocytic Leukemia	2.2	129	Acute Lymphocytic Leukemia	2.1	126	Acute Lymphocytic Leukemia	2.2	131
Brain and ONS <sup>d</sup>	2.6	157	Brain and ONS <sup>d</sup>	2.3	140	Brain and ONS <sup>d</sup>	2.6	157
Bones and Joints	1.7	103	Hodgkin Lymphoma	1.6	97	Hodgkin Lymphoma	1.8	111
Non-Hodgkin Lymphoma	1.2	73	Bones and Joints	1.5	92	Non-Hodgkin Lymphoma	1.6	98
Hodgkin Lymphoma	1.1	64	Non-Hodgkin Lymphoma	1.2	71	Bones and Joints	1.5	88
Age 15			Age 16			Age 17		
	Rate	Cases		Rate	Cases		Rate	Cases
All Sites	18.6	1,144	All Sites	19.8	1,241	All Sites	22.2	1,410
Leukemia	3.4	208	Leukemia	3.5	218	Hodgkin Lymphoma	3.3	208
Acute Lymphocytic Leukemia	2.0	125	Acute Lymphocytic Leukemia	2.1	134	Leukemia	3.0	189
Hodgkin Lymphoma	2.5	152	Hodgkin Lymphoma	2.8	175	Acute Lymphocytic Leukemia	1.7	105
Brain and ONS <sup>d</sup>	2.4	145	Brain and ONS <sup>d</sup>	2.5	156	Testis <sup>e</sup>	2.3	144
Non-Hodgkin Lymphoma	2.0	120	Thyroid	2.2	139	Thyroid	2.2	143
Bones and Joints	1.9	115	Non-Hodgkin Lymphoma	1.3	84	Brain and ONS <sup>d</sup>	2.2	138
Age 18			Age 19					
	Rate	Cases		Rate	Cases			
All Sites	22.4	1,415	All Sites	25.1	1,553			
Hodgkin Lymphoma	3.4	213	Hodgkin Lymphoma	4.0	247			
Leukemia	3.1	195	Thyroid	3.5	214			
Acute Lymphocytic Leukemia	1.7	106	Testis <sup>e</sup>	3.3	202			
Thyroid	2.8	178	Leukemia	2.8	173			
Testis <sup>e</sup>	2.5	160	Acute Lymphocytic Leukemia	1.5	90			
Brain and ONS <sup>d</sup>	1.7	106	Brain and ONS <sup>d</sup>	1.8	110			

<sup>a</sup> Rates are per 100,000 per year.

<sup>b</sup> Top 5 cancer sites were determined based on the 2007-2011 age-specific rate.

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

<sup>d</sup> ONS = Other Nervous System. IBD = Intrahepatic Bile Duct.

<sup>e</sup> 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<sup>a</sup> and Deaths for the Top 5 Cancer Sites<sup>b</sup> by Single Year of Age at Death

U.S. Mortality<sup>c</sup> 2007-2011

Age <1			Age 1			Age 2		
	Rate	Deaths		Rate	Deaths		Rate	Deaths
All Sites	1.7	348	All Sites	1.9	384	All Sites	2.2	452
Leukemia	0.6	122	Leukemia	0.8	152	Leukemia	0.8	157
Acute Lymphocytic Leukemia	0.2	41	Acute Lymphocytic Leukemia	0.2	39	Acute Lymphocytic Leukemia	0.2	47
Brain and ONS <sup>d</sup>	0.3	65	Brain and ONS <sup>d</sup>	0.5	95	Brain and ONS <sup>d</sup>	0.6	114
Other Endocrine	0.2	34	Other Endocrine	0.2	42	Other Endocrine	0.4	75
Liver & IBD <sup>d</sup>	0.1	22	Soft Tissue	0.1	21	Liver & IBD <sup>d</sup>	0.2	31
Soft Tissue	0.1	17	Liver & IBD <sup>d</sup>	0.1	20	Soft Tissue	0.1	26
Age 3			Age 4			Age 5		
	Rate	Deaths		Rate	Deaths		Rate	Deaths
All Sites	2.4	493	All Sites	2.4	478	All Sites	2.5	504
Brain and ONS <sup>d</sup>	0.7	139	Brain and ONS <sup>d</sup>	0.9	176	Brain and ONS <sup>d</sup>	1.0	205
Leukemia	0.6	131	Leukemia	0.6	114	Leukemia	0.6	124
Acute Lymphocytic Leukemia	0.2	46	Acute Lymphocytic Leukemia	0.2	50	Acute Lymphocytic Leukemia	0.3	60
Other Endocrine	0.5	111	Other Endocrine	0.4	83	Other Endocrine	0.3	66
Soft Tissue	0.1	30	Liver & IBD <sup>d</sup>	0.1	22	Kidney and Renal Pelvis	0.1	27
Liver & IBD <sup>d</sup>	0.1	27	Soft Tissue	0.1	22	Soft Tissue	0.1	24
Age 6			Age 7			Age 8		
	Rate	Deaths		Rate	Deaths		Rate	Deaths
All Sites	2.3	459	All Sites	2.3	458	All Sites	2.2	439
Brain and ONS <sup>d</sup>	0.9	176	Brain and ONS <sup>d</sup>	0.9	190	Brain and ONS <sup>d</sup>	0.9	173
Leukemia	0.5	102	Leukemia	0.5	107	Leukemia	0.6	117
Acute Lymphocytic Leukemia	0.3	54	Acute Lymphocytic Leukemia	0.3	64	Acute Lymphocytic Leukemia	0.3	69
Other Endocrine	0.4	76	Other Endocrine	0.3	55	Other Endocrine	0.2	38
Kidney and Renal Pelvis	0.1	26	Soft Tissue	0.2	32	Soft Tissue	0.2	34
Soft Tissue	0.1	23	Bones and Joints	0.1	16	Kidney and Renal Pelvis	0.1	16
Age 9			Age 10			Age 11		
	Rate	Deaths		Rate	Deaths		Rate	Deaths
All Sites	2.2	434	All Sites	2.0	410	All Sites	2.1	439
Brain and ONS <sup>d</sup>	0.8	160	Leukemia	0.7	146	Leukemia	0.7	143
Leukemia	0.6	115	Acute Lymphocytic Leukemia	0.3	67	Acute Lymphocytic Leukemia	0.3	71
Acute Lymphocytic Leukemia	0.3	60	Brain and ONS <sup>d</sup>	0.6	133	Brain and ONS <sup>d</sup>	0.7	134
Other Endocrine	0.2	36	Other Endocrine	0.2	34	Bones and Joints	0.2	42
Bones and Joints	0.2	34	Bones and Joints	0.2	32	Other Endocrine	0.2	34
Soft Tissue	0.1	29	Soft Tissue	0.1	26	Soft Tissue	0.1	22

<sup>a</sup> Rates are per 100,000 per year. Deaths are for the entire United States over the time period 2007-2011.

<sup>b</sup> Top 5 cancer sites were determined based on the 2007-2011 age-specific rate.

<sup>c</sup> US Mortality Files, National Center for Health Statistics, Centers for Disease Control and Prevention.

<sup>d</sup> ONS = Other Nervous System. IBD = Intrahepatic Bile Duct.

<sup>e</sup> 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.

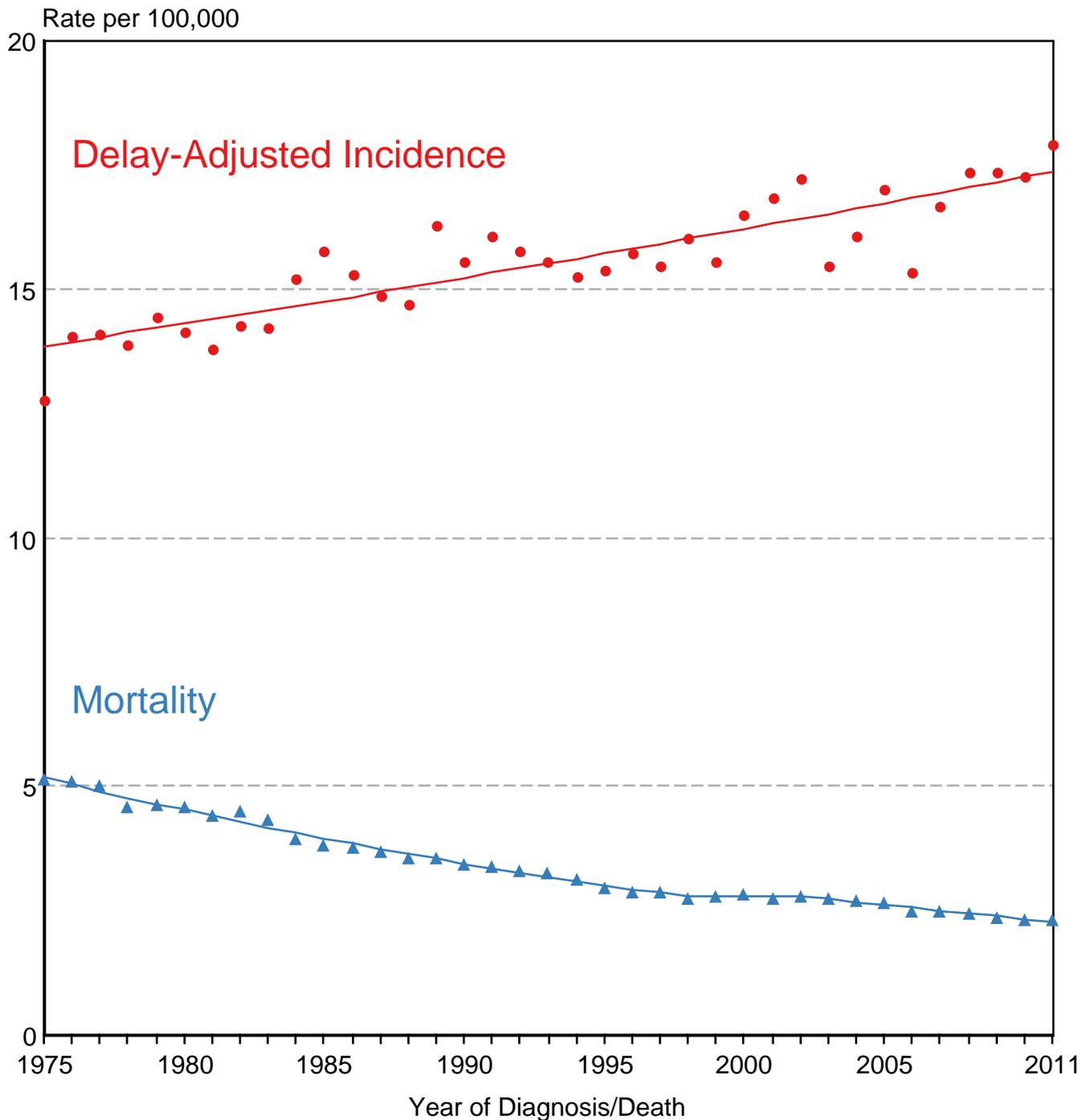
Table 28.14 - continued  
Age-Specific Rates<sup>a</sup> and Deaths for the Top 5 Cancer Sites<sup>b</sup> by Single Year of Age at DeathU.S. Mortality<sup>c</sup> 2007-2011

Age 12			Age 13			Age 14		
	Rate	Deaths		Rate	Deaths		Rate	Deaths
All Sites	2.1	432	All Sites	2.3	471	All Sites	2.3	475
Leukemia	0.6	129	Leukemia	0.7	145	Leukemia	0.8	160
Acute Lymphocytic Leukemia	0.3	63	Acute Lymphocytic Leukemia	0.4	77	Acute Lymphocytic Leukemia	0.3	71
Brain and ONS <sup>d</sup>	0.6	123	Brain and ONS <sup>d</sup>	0.6	128	Brain and ONS <sup>d</sup>	0.5	95
Bones and Joints	0.3	57	Bones and Joints	0.2	43	Bones and Joints	0.4	78
Soft Tissue	0.2	41	Soft Tissue	0.2	39	Soft Tissue	0.2	46
Non-Hodgkin Lymphoma	0.1	19	Other Endocrine	0.1	25	Non-Hodgkin Lymphoma	0.1	22
Age 15			Age 16			Age 17		
	Rate	Deaths		Rate	Deaths		Rate	Deaths
All Sites	2.7	575	All Sites	2.7	591	All Sites	2.8	627
Leukemia	0.9	191	Leukemia	0.7	157	Leukemia	0.8	180
Acute Lymphocytic Leukemia	0.3	71	Acute Lymphocytic Leukemia	0.3	57	Acute Lymphocytic Leukemia	0.4	80
Brain and ONS <sup>d</sup>	0.5	116	Bones and Joints	0.5	103	Bones and Joints	0.5	113
Bones and Joints	0.4	75	Brain and ONS <sup>d</sup>	0.4	96	Brain and ONS <sup>d</sup>	0.5	103
Soft Tissue	0.2	48	Soft Tissue	0.3	64	Soft Tissue	0.3	62
Non-Hodgkin Lymphoma	0.2	35	Non-Hodgkin Lymphoma	0.2	38	Non-Hodgkin Lymphoma	0.1	32
Age 18			Age 19					
	Rate	Deaths		Rate	Deaths			
All Sites	3.0	669	All Sites	3.5	780			
Leukemia	0.9	192	Leukemia	0.8	190			
Acute Lymphocytic Leukemia	0.4	80	Acute Lymphocytic Leukemia	0.3	73			
Bones and Joints	0.6	126	Brain and ONS <sup>d</sup>	0.5	123			
Brain and ONS <sup>d</sup>	0.4	80	Bones and Joints	0.5	108			
Soft Tissue	0.3	69	Soft Tissue	0.4	83			
Non-Hodgkin Lymphoma	0.2	47	Non-Hodgkin Lymphoma	0.3	58			

<sup>a</sup> Rates are per 100,000 per year. Deaths are for the entire United States over the time period 2007-2011.<sup>b</sup> Top 5 cancer sites were determined based on the 2007-2011 age-specific rate.<sup>c</sup> US Mortality Files, National Center for Health Statistics, Centers for Disease Control and Prevention.<sup>d</sup> ONS = Other Nervous System. IBD = Intrahepatic Bile Duct.<sup>e</sup> The rates for sex-specific cancer sites are calculated using the population for both sexes combined.

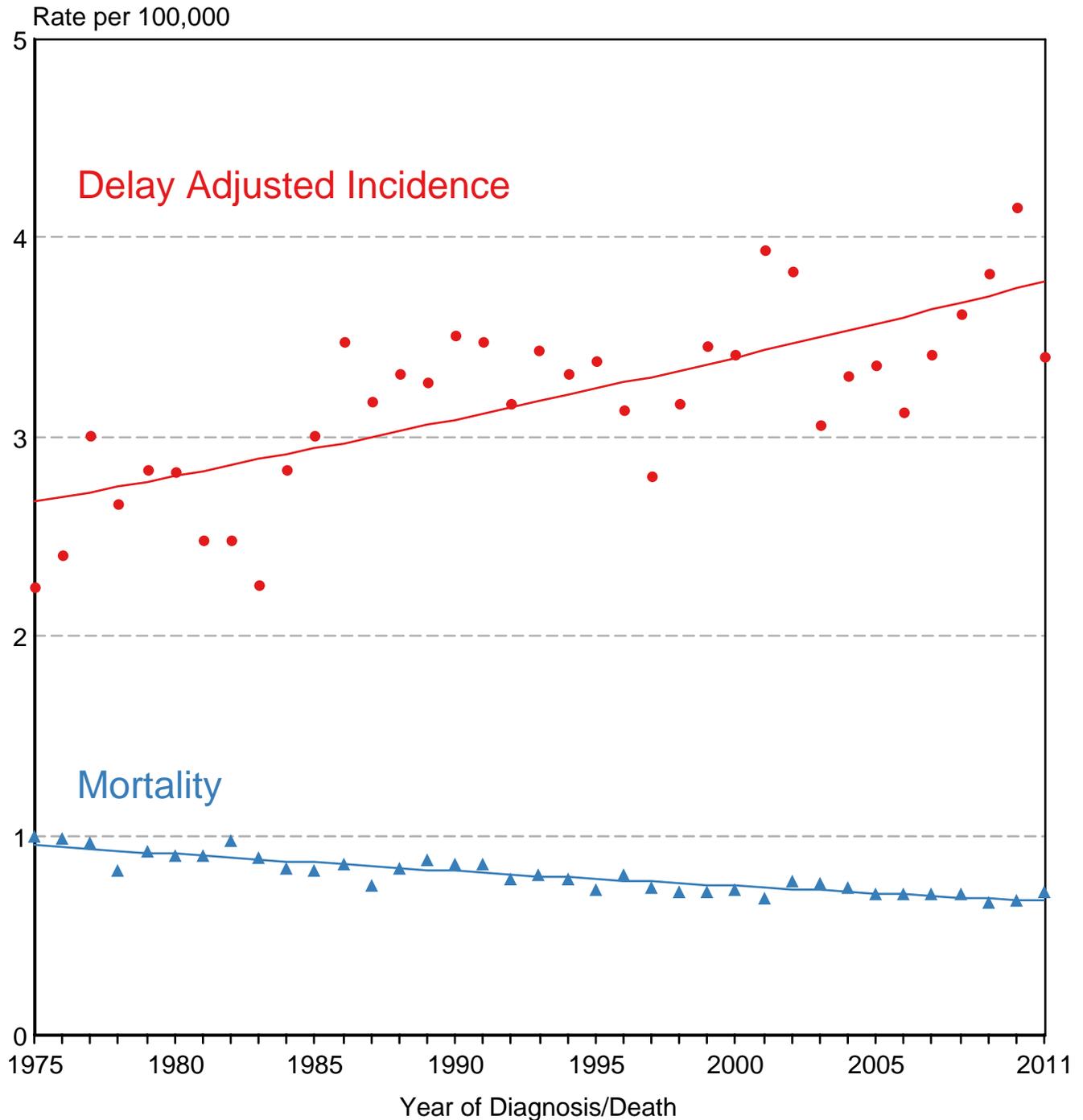
- Statistic not shown. Rate based on less than 16 cases for the time interval.

# SEER Delay-Adjusted Incidence and US Mortality All Childhood Cancers, Under 20 Years of Age Both Sexes, All Races, 1975-2011



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 4.1.0, April 2014,  
National Cancer Institute.

# SEER Delay-Adjusted Incidence and US Mortality Brain and CNS, Under 15 Years of Age Both Sexes, All Races, 1975-2011



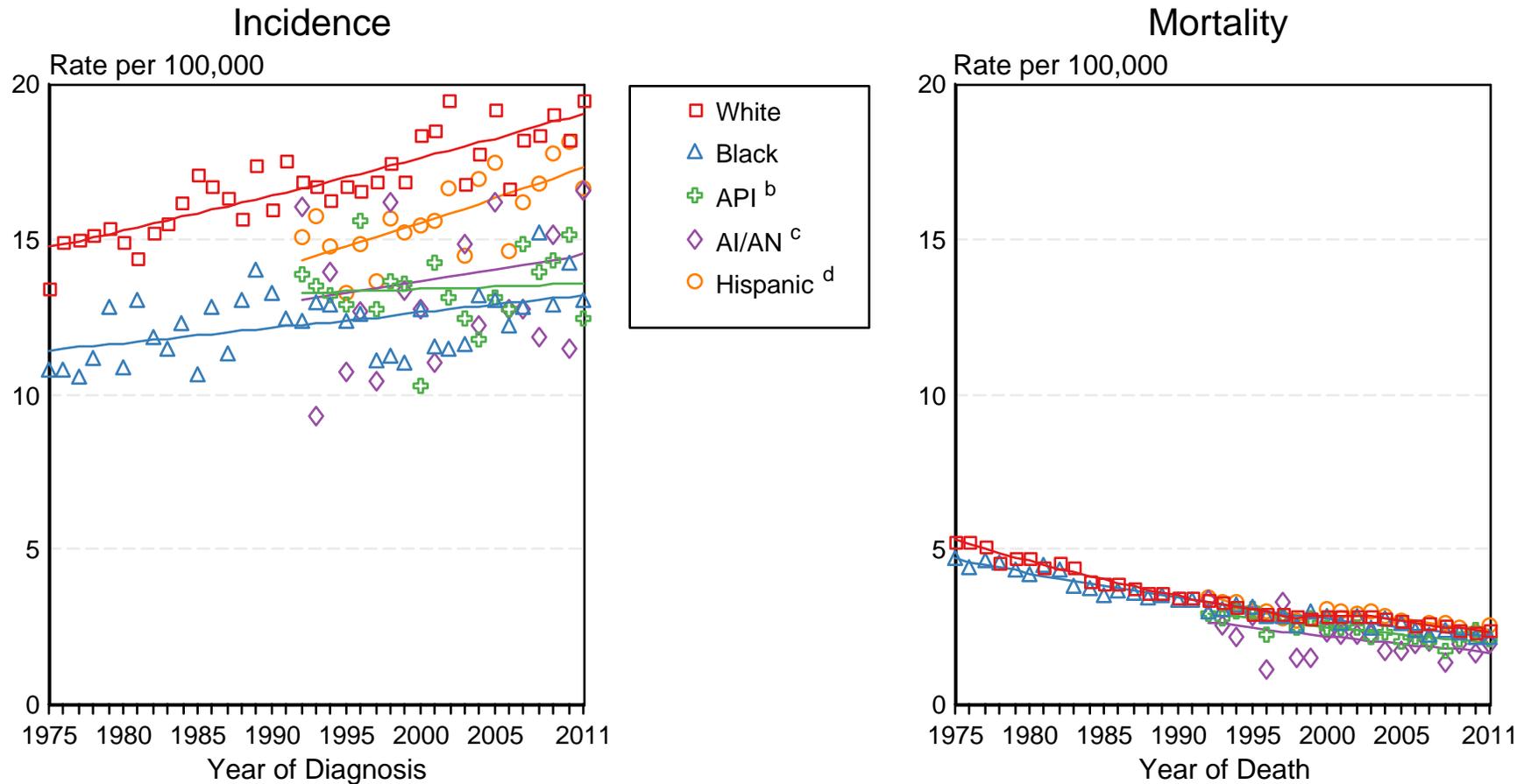
Source: SEER 9 areas and US Mortality Files (National Center for Health Statistics, CDC). Rates are age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1103). Regression lines are calculated using the Joinpoint Regression Program Version 4.1.0, April 2014, National Cancer Institute.

Figure 28.3

# SEER Incidence and US Death Rates<sup>a</sup> All Cancer Sites, Ages <20, Both Sexes

Joinpoint Analyses for Whites and Blacks from 1975-2011

and for Asian/Pacific Islanders, American Indians/Alaska Natives and Hispanics from 1992-2011



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,

<sup>a</sup> Los Angeles, Alaska Native Registry and Rural Georgia). Mortality data are from 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 4.1.0, April 2014, National Cancer Institute. Joinpoint analyses for Whites and

<sup>b</sup> Blacks during the 1975-2011 period allow a maximum of 5 joinpoints. Analyses for other ethnic groups during the period 1992-2011 allow a maximum of 3 joinpoints.

<sup>c</sup> API = Asian/Pacific Islander.

<sup>d</sup> AI/AN = American Indian/Alaska Native. Rates for American Indian/Alaska Native are based on the CHSDA(Contract Health Service Delivery Area) counties.

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.