

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, 2008-2012

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	16.0	16.9	15.1	2.2	2.3	2.0	17.6	18.4	16.7	2.4	2.6	2.1
Whites	17.0	17.8	16.1	2.2	2.4	2.1	18.8	19.7	17.8	2.4	2.7	2.2
Blacks	13.4	14.0	12.7	2.1	2.1	2.0	13.6	14.2	12.9	2.3	2.4	2.1
Bone & Joint	0.8	0.8	0.7	0.1	0.1	0.1	0.9	1.1	0.8	0.2	0.2	0.2
Brain & Other nervous	3.4	3.5	3.2	0.7	0.7	0.7	3.1	3.3	2.9	0.6	0.7	0.6
Hodgkin lymphoma	0.6	0.7	0.5	0.0	-	-	1.2	1.3	1.2	0.0	0.0	0.0
Kidney & Renal pelvis	0.8	0.8	0.9	0.1	0.1	0.1	0.7	0.6	0.7	0.1	0.1	0.1
Leukemia	5.2	5.5	4.9	0.6	0.7	0.6	4.7	5.0	4.3	0.7	0.7	0.6
Acute lymphocytic	4.1	4.4	3.8	0.3	0.3	0.2	3.5	3.8	3.2	0.3	0.3	0.2
Non-Hodgkin lymphoma	1.0	1.3	0.7	0.1	0.1	0.0	1.2	1.6	0.8	0.1	0.1	0.1
Soft tissue	1.1	1.1	1.1	0.1	0.2	0.1	1.1	1.1	1.1	0.2	0.2	0.2

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

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

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

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

Table 28.2

Age-Adjusted SEER Cancer Incidence Rates^a, 1975-2012

By Primary Cancer Site

All Races, Males and Females

Year of Diagnosis

Age/Site	1975	1980	1985	1990	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
<u>Ages 0-14</u>																						
All Sites																						
All Races	11.6	12.9	14.6	14.3	14.1	14.8	14.1	15.3	14.5	15.4	15.8	15.6	13.2	15.3	16.7	14.5	14.8	15.9	16.1	16.6	15.9	15.7
Whites	12.1	13.2	15.6	14.4	14.9	15.0	14.7	16.1	15.6	16.6	17.0	17.0	14.0	16.1	17.7	15.2	15.6	16.2	16.8	17.3	17.0	16.0
Blacks	8.6	11.1	10.2	12.3	11.8	11.6	11.2	10.3	10.7	12.1	11.0	11.6	10.2	13.3	13.0	11.8	12.0	15.4	13.1	13.2	13.0	15.9
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	0.8
Brain & Other nervous	2.3	2.8	3.0	3.5	3.4	3.2	2.8	3.2	3.5	3.4	4.0	3.8	3.0	3.3	3.4	3.1	3.4	3.6	3.8	4.1	3.4	3.0
Hodgkin lymphoma	0.7	0.5	0.7	0.7	-	0.6	0.6	0.6	0.4	0.6	0.5	0.5	0.4	0.5	0.5	0.6	0.6	0.7	0.6	0.5	0.6	0.7
Kidney & Renal pelvis	0.7	0.8	0.9	0.8	0.6	1.0	1.0	1.0	0.7	1.0	0.9	0.9	0.7	0.7	0.9	0.6	0.7	1.0	0.8	0.9	0.9	0.6
Leukemia	3.3	4.0	4.6	4.5	4.5	4.7	4.3	4.8	4.7	4.6	4.4	4.8	4.1	5.0	5.4	4.6	4.2	4.8	4.8	4.9	5.1	4.7
Acute lymphocytic	2.2	3.1	3.5	3.5	3.7	3.6	3.5	3.9	3.6	3.5	3.5	4.0	3.2	3.8	4.1	3.5	3.6	3.6	3.8	3.9	4.3	3.7
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	1.0	1.4
Soft tissue	0.9	0.9	0.9	0.7	1.0	1.1	1.0	1.1	0.9	1.0	1.2	1.0	0.8	1.0	1.5	0.9	1.1	0.9	1.0	1.0	1.1	1.3
<u>Ages 0-19</u>																						
All Sites																						
All Races	13.0	14.4	16.0	15.7	15.8	16.2	15.8	16.3	15.7	16.9	17.1	17.5	15.7	16.5	17.8	15.7	17.0	17.7	17.7	17.6	18.1	17.7
Whites	13.4	14.9	17.1	16.0	16.7	16.6	16.9	17.3	16.7	18.3	18.5	19.5	16.8	17.8	19.2	16.7	18.3	18.4	19.1	18.4	19.7	18.4
Blacks	10.8	10.9	10.6	13.3	12.4	12.6	11.1	11.5	11.3	12.9	11.7	11.4	11.6	13.2	13.2	12.4	13.0	15.2	12.9	14.2	13.2	16.1
Bone & Joint	0.7	0.9	1.0	0.8	0.9	0.7	1.2	0.8	0.7	0.8	0.9	1.0	0.8	0.7	0.9	0.9	0.8	1.0	1.1	0.7	0.9	1.0
Brain & Other nervous	2.1	2.5	2.7	3.2	3.1	3.0	2.6	2.8	3.0	3.1	3.5	3.4	2.9	3.0	3.0	2.8	3.1	3.2	3.3	3.6	3.0	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	1.5
Kidney & Renal pelvis	0.5	0.6	0.7	0.6	0.5	0.7	0.8	0.8	0.6	0.8	0.7	0.7	0.6	0.6	0.8	0.5	0.6	0.9	0.7	0.7	0.7	0.5
Leukemia	3.0	3.5	4.0	3.9	4.0	4.0	3.7	4.1	4.1	4.1	4.0	4.5	3.8	4.4	4.7	4.1	4.0	4.3	4.1	4.2	4.6	4.2
Acute lymphocytic	1.9	2.5	2.9	2.9	3.1	2.9	2.9	3.3	3.0	3.1	2.9	3.5	2.9	3.3	3.4	3.0	3.2	3.1	3.1	3.1	3.7	3.0
Non-Hodgkin lymphoma	1.0	0.8	1.0	1.0	1.1	1.0	1.1	1.0	0.9	1.3	1.1	1.2	1.3	1.1	1.3	1.2	1.3	1.3	1.4	1.5	1.2	1.4
Soft tissue	0.8	0.9	0.9	0.8	1.1	1.1	1.1	1.1	1.0	1.2	1.1	1.0	0.8	1.0	1.5	1.0	1.1	0.9	1.0	0.9	1.2	1.2

^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, 1975-2012

By Primary Cancer Site

All Races, Males and Females

Year of Death

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

^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, 1975-2012

By Primary Cancer Site

Whites, Males and Females

Year of Death

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

^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, 1975-2012

By Primary Cancer Site

Blacks, Males and Females

Year of Death

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

^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,
1975-2012 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 2008-12
	Years	APC	Years	APC	Years	APC	Years	APC	Years	APC	Years	APC	
<u>Ages 0-14</u>													
All Sites													
All Races	1975-12	0.6*											0.6*
White	1975-12	0.7*											0.7*
Black	1975-12	0.7*											0.7*
Bone & Joint	1975-12	0.4											0.4
Brain & Other nervous system	1975-77	15.5	1977-83	-3.2	1983-86	10.9	1986-12	0.2					0.2
Hodgkin lymphoma	1975-12	-0.6*											-0.6*
Kidney & Renal pelvis	1975-12	-0.2											-0.2
Leukemia	1975-12	0.7*											0.7*
Acute lymphocytic leukemia	1975-12	0.8*											0.8*
Non-Hodgkin lymphoma	1975-12	0.9*											0.9*
Soft tissue	1975-12	1.2*											1.2*
<u>Ages 0-19</u>													
All Sites													
All Races	1975-12	0.6*											0.6*
White	1975-12	0.7*											0.7*
Black	1975-03	0.2	2003-12	2.1*									2.1*
Bone & Joint	1975-12	0.3											0.3
Brain & Other nervous system	1975-83	-0.5	1983-86	8.5	1986-12	0.1							0.1
Hodgkin lymphoma	1975-05	-1.0*	2005-12	3.5									3.5
Kidney & Renal pelvis	1975-12	-0.1											-0.1
Leukemia	1975-12	0.7*											0.7*
Acute lymphocytic leukemia	1975-12	0.8*											0.8*
Non-Hodgkin lymphoma	1975-12	1.1*											1.1*
Soft tissue	1975-12	1.1*											1.1*

Joinpoint Regression Program Version 4.2.0, April 2015, National Cancer Institute. (<http://surveillance.cancer.gov/joinpoint/>).

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

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

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

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

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

Table 28.7

Trends in U.S. Mortality^a Using the Joinpoint Regression Program,
1975-2012 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	2008-12
<u>Ages 0-14</u>													
All Sites	1975-96	-2.9*	1996-12	-1.3*									-1.3*
Bone & Joint	1975-89	-3.5*	1989-12	-0.5									-0.5
Brain & Other nervous system	1975-12	-0.9*											-0.9*
Hodgkin lymphoma	1975-12	-4.9*											-4.9*
Kidney & Renal pelvis	1975-12	-2.7*											-2.7*
Leukemia	1975-90	-4.4*	1990-12	-2.8*									-2.8*
Acute lymphocytic leukemia	1975-93	-5.3*	1993-12	-3.0*									-3.0*
Non-Hodgkin lymphoma	1975-12	-5.0*											-5.0*
Soft tissue	1975-79	11.1*	1979-96	-2.5*	1996-12	0.4							0.4
<u>Ages 0-19</u>													
All Sites	1975-98	-2.7*	1998-02	0.0	2002-12	-2.0*							-2.0*
Bone & Joint	1975-89	-3.1*	1989-12	-0.3									-0.3
Brain & Other nervous system	1975-12	-1.0*											-1.0*
Hodgkin lymphoma	1975-12	-5.0*											-5.0*
Kidney & Renal pelvis	1975-12	-2.5*											-2.5*
Leukemia	1975-89	-3.9*	1989-92	-0.8	1992-98	-5.0*	1998-01	1.0	2001-12	-3.2*			-3.2*
Acute lymphocytic leukemia	1975-99	-4.4*	1999-02	2.1	2002-12	-4.3*							-4.3*
Non-Hodgkin lymphoma	1975-12	-4.2*											-4.2*
Soft tissue	1975-79	8.4	1979-12	-0.9*									-0.9*

Joinpoint Regression Program Version 4.2.0, April 2015, 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.
^a The AAPC is the Average Annual Percent Change and is based on the APCs calculated by Joinpoint over the time range of 1975-2012.
^b 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,
1975-2012 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 2008-12
	Years	APC	Years	APC	Years	APC	Years	APC	Years	APC	Years	APC	
<u>Ages 0-14</u>													
All Sites	1975-96	-3.0*	1996-12	-1.2*									-1.2*
Bone & Joint	1975-89	-3.1*	1989-12	-0.6									-0.6
Brain & Other nervous system	1975-12	-0.9*											-0.9*
Hodgkin lymphoma	-	-											-
Kidney & Renal pelvis	1975-12	-2.6*											-2.6*
Leukemia	1975-90	-4.5*	1990-12	-2.8*									-2.8*
Acute lymphocytic leukemia	1975-91	-5.5*	1991-12	-2.9*									-2.9*
Non-Hodgkin lymphoma	1975-12	-5.0*											-5.0*
Soft tissue	1975-79	12.7*	1979-95	-2.8*	1995-12	0.6							0.6
<u>Ages 0-19</u>													
All Sites	1975-96	-2.7*	1996-12	-1.3*									-1.3*
Bone & Joint	1975-89	-2.7*	1989-12	-0.3									-0.3
Brain & Other nervous system	1975-12	-0.9*											-0.9*
Hodgkin lymphoma	1975-12	-5.0*											-5.0*
Kidney & Renal pelvis	1975-12	-2.5*											-2.5*
Leukemia	1975-88	-4.1*	1988-12	-2.7*									-2.7*
Acute lymphocytic leukemia	1975-99	-4.4*	1999-02	3.4	2002-12	-4.2*							-4.2*
Non-Hodgkin lymphoma	1975-12	-4.3*											-4.3*
Soft tissue	1975-79	11.6*	1979-96	-1.6*	1996-12	0.2							0.2

Joinpoint Regression Program Version 4.2.0, April 2015, National Cancer Institute. (<http://surveillance.cancer.gov/joinpoint/>).

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

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

^b The AAPC is the Average Annual Percent Change and is based on the APCs calculated by Joinpoint over the time range of 1975-2012.

* 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,
1975-2012 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 2008-12
	Years	APC	Years	APC	Years	APC	Years	APC	Years	APC	Years	APC	
<u>Ages 0-14</u>													
All Sites	1975-97	-2.6*	1997-12	-1.3*									-1.3*
Bone & Joint	1975-81	-10.3*	1981-12	-0.7									-0.7
Brain & Other nervous system	1975-12	-1.0*											-1.0*
Hodgkin lymphoma	-	-											-
Kidney & Renal pelvis	1975-12	-2.7*											-2.7*
Leukemia	1975-12	-3.2*											-3.2*
Acute lymphocytic leukemia	1975-12	-4.7*											-4.7*
Non-Hodgkin lymphoma	1975-12	-4.4*											-4.4*
Soft tissue	1975-12	-1.2*											-1.2*
<u>Ages 0-19</u>													
All Sites	1975-12	-2.1*											-2.1*
Bone & Joint	1975-84	-6.6*	1984-12	-0.4									-0.4
Brain & Other nervous system	1975-12	-1.0*											-1.0*
Hodgkin lymphoma	-	-											-
Kidney & Renal pelvis	1975-12	-2.5*											-2.5*
Leukemia	1975-12	-2.9*											-2.9*
Acute lymphocytic leukemia	1975-12	-4.1*											-4.1*
Non-Hodgkin lymphoma	1975-12	-3.5*											-3.5*
Soft tissue	1975-12	-1.0*											-1.0*

Joinpoint Regression Program Version 4.2.0, April 2015, National Cancer Institute. (<http://surveillance.cancer.gov/joinpoint/>).

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

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

^b The AAPC is the Average Annual Percent Change and is based on the APCs calculated by Joinpoint over the time range of 1975-2012.

* 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	2002-2004	2005-2011
All Sites											
All Races	58.0	62.4	67.0	68.1	71.6	75.8	77.4	79.1	80.7	82.7	83.4 ^c
Whites	57.9	63.0	67.7	69.8	72.4	76.8	78.2	80.5	81.7	84.7	84.5 ^c
Blacks	57.3	57.7	62.2	57.0	65.3	70.7	73.2	75.6	73.9	73.3	79.5 ^c
Bone & Joint	49.9 ^d	47.8	56.8 ^d	57.3 ^d	66.8 ^d	67.4	74.1	70.3	70.0	77.5	76.8 ^c
Brain & ONS	56.9	57.7	56.7	61.7	64.3	64.4	70.7	75.2	73.9	75.3	74.2 ^c
Hodgkin lymphoma	80.9	86.8	88.1	89.9	87.1	96.8	94.6	96.1	94.4	97.5	97.6 ^c
Leukemia	49.7	58.0	62.7	63.6	71.0	75.5	75.9	80.3	82.7	86.0	87.2 ^c
Acute lymphocytic	57.2	65.7	71.1	72.2	77.7	83.1	83.8	86.9	88.5	91.9	91.2 ^c
Acute myeloid	18.8	25.8	26.7 ^d	30.6 ^d	37.1 ^d	42.2	40.6 ^d	48.7	58.2	61.1	66.5 ^c
Neuroblastoma ^a	52.5	56.6	54.5	52.3	63.2	76.0	66.8	65.6	72.1	73.4	74.2 ^c
Non-Hodgkin lymphoma	43.2	52.7	66.9	69.8	70.7	76.9	80.7	83.2	89.8	84.6	88.2 ^c
Soft tissue	61.3	74.2	69.2	72.9	66.4	79.8	76.7	70.5	76.9	84.5	79.0 ^c
Wilms' tumor ^b	73.1	79.0	86.7	90.7	92.2	91.9	91.7	91.6	93.8	89.2	93.5 ^c

Site	Ages 0-19										
	1975-1977	1978-1980	1981-1983	1984-1986	1987-1989	1990-1992	1993-1995	1996-1998	1999-2001	2002-2004	2005-2011
All Sites											
All Races	61.5	65.2	68.3	70.5	73.5	76.3	77.8	79.7	80.2	82.5	83.9 ^c
Whites	61.3	65.8	69.2	72.4	75.0	77.6	78.5	81.0	81.3	84.1	85.1 ^c
Blacks	59.5	60.3	62.5	58.5	64.4	68.5	74.2	73.6	74.5	73.2	78.1 ^c
Bone & Joint	50.4	48.1	51.2	56.0	64.0	68.8	68.9	67.0	66.7	73.8	74.6 ^c
Brain & ONS	58.9	57.9	58.4	63.9	65.9	66.4	71.5	76.0	74.4	75.3	74.4 ^c
Hodgkin lymphoma	86.2	88.3	85.5	90.6	88.7	94.2	93.9	95.2	95.0	96.3	97.2 ^c
Leukemia	44.9	53.2	57.9	60.3	67.6	71.3	71.9	76.6	77.6	81.8	85.4 ^c
Acute lymphocytic	53.8	61.9	66.9	69.9	75.0	79.8	81.4	84.3	84.7	88.0	90.0 ^c
Acute myeloid	18.7	26.2	26.4	31.4	37.6	41.9	38.6	46.3	51.6	59.5	65.7 ^c
Neuroblastoma ^a	53.1	56.7	53.4	52.5	61.7	75.7	66.8	65.8	71.9	73.2	74.1 ^c
Non-Hodgkin lymphoma	44.6	53.4	63.6	67.6	70.4	72.7	77.9	81.0	84.3	84.5	85.9 ^c
Soft tissue	64.8	68.9	68.4	72.6	68.0	69.7	73.8	71.9	73.0	76.3	77.9 ^c
Wilms' tumor ^b	72.6	78.4	86.8	91.0	92.2	91.3	91.7	91.6	93.8	89.3	93.1 ^c

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

Based on follow-up of patients into 2012.

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 2005-2011 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	
	2008-2012 Num Cases	2008-2012 Rate	1975-2012 APC	1975-1993 APC	1994-2012 APC	2008-2012 Num Deaths	2008-2012 Rate	1975-2012 APC	1975-1993 APC	1994-2012 APC	1975-1977	2005-2011
Ages 0-4												
All Sites	6,421	22.2	0.7*	1.2*	0.6*	2,174	2.2	-2.5*	-2.9*	-1.7*#	57.2	84.0 ^c
Soft tissue	490	1.7	1.2*	0.2	2.0	120	0.1	-1.7*	-1.7	-1.0	62.0 ^d	81.8 ^c
Kidney and Renal pelvis	546	1.9	-0.3	0.1	-1.6	63	0.1	-	-6.1*	-	71.9	91.4 ^c
Eye and Orbit	397	1.4	0.2	2.1*	-0.2 ^g	18	0.0	-	-	-	87.2 ^d	96.0 ^c
Brain and Other nervous	1,184	4.1	1.1*	2.5*	0.7 ^h	587	0.6	-1.3*	-1.0*	-1.4*	52.0	72.5 ^c
Other endocrine ^g	415	1.4	-	-	-	344	0.3	-	-	-	35.7 ^d	75.9 ^c
Leukemia	2,400	8.3	0.8*	0.8*	0.7	704	0.7	-2.8*	-3.7*	-1.8*#	55.4	88.6 ^c
Acute lymphocytic	1,919	6.6	0.8*	0.9*	0.5	222	0.2	-4.0*	-5.7*	-1.9*#	63.2	92.9 ^c
Ages 5-9												
All Sites	3,673	12.7	0.5*	0.8*	1.2*	2,254	2.2	-2.5*	-3.2*	-1.2*#	58.3	81.7 ^c
Brain and Other nervous	1,012	3.5	0.6*	1.4	1.3*	917	0.9	-0.5*	-0.6	0.3 ^h	58.4	72.1 ^c
Leukemia	1,236	4.3	0.5*	1.5*	0.6	523	0.5	-4.6*	-5.3*	-3.3*#	51.0	87.9 ^c
Acute lymphocytic	1,051	3.6	0.7*	1.7*	0.7	265	0.3	-5.3*	-6.4*	-3.7*#	54.8	91.2 ^c
Ages 10-14												
All Sites	4,001	13.5	0.6*	0.9*	0.3	2,220	2.1	-2.0*	-2.5*	-1.3*#	58.6	83.9 ^c
Bone and Joint	430	1.5	0.2	1.0	0.3	252	0.2	-1.4*	-2.8*	-0.7 ^h	52.8 ^d	76.6 ^c
Brain and Other nervous	766	2.6	0.7*	1.8*	-0.8 ^h	634	0.6	-1.1*	-1.6*	-0.5 ^g	59.5	79.9 ^c
Hodgkin lymphoma	354	1.2	-0.5	-0.7	0.6	-	-	-	-	-	79.0	98.0 ^c
Leukemia	952	3.2	0.6*	1.1	1.0*	674	0.7	-2.9*	-3.1*	-2.7*	34.0	82.6 ^c
Acute lymphocytic	647	2.2	0.9*	2.0	1.3*	332	0.3	-3.3*	-3.5*	-3.0*	43.0 ^d	85.6 ^c
Ages 15-19												
All Sites	6,862	22.1	0.6*	1.0*	0.8*	3,197	2.9	-1.9*	-2.1*	-1.8* ^g	67.9	85.0 ^c
Bone and Joint	437	1.4	0.2	0.9	-0.5	524	0.5	-1.1*	-2.6*	-0.6 ^h	51.0 ^d	71.7 ^c
Melanoma of the skin	332	1.1	0.9*	2.4*	0.1	24	0.0	-	-	-	76.2 ^d	95.4 ^c
Testis(males)	637	4.0	1.4*	1.8	1.6*	37	0.1	-	-	-	66.0 ^d	94.9 ^c
Brain and Other nervous	685	2.2	0.2	1.6	0.1	540	0.5	-1.2*	-1.0*	-1.0*	65.3	75.8 ^c
Thyroid	830	2.7	2.2*	0.7	4.1* ^h	-	-	-	-	-	100.0	99.1
Hodgkin lymphoma	984	3.2	-0.5*	0.1	0.2	59	0.1	-	-3.9*	-	89.0	96.9 ^c
Non-Hodgkin lymphoma	541	1.7	1.4*	2.3*	0.5 ^g	187	0.2	-3.1*	-2.2*	-3.9*#	47.7 ^d	82.3 ^c
Leukemia	960	3.1	0.7*	0.5	0.6	864	0.8	-2.3*	-1.9*	-2.6*	23.8	75.6 ^c
Acute lymphocytic	536	1.7	1.1*	1.1	1.2	346	0.3	-2.3*	-1.5*	-2.9* ^g	30.0 ^d	81.0 ^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 2005-2011 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 2008-2012.

^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 1994-2012 is significantly different from the APC for 1975-1993 (p<.05).

^g The APC for 1994-2012 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^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
Survival Time																					
1-year	80.5	84.6	86.7	89.6	90.4	92.7	90.7	90.7	91.1	92.3	92.0	91.5	93.3	92.7	92.5	93.9	92.3	92.4	92.2	92.9	95.1
2-year	70.9	75.5	78.4	83.0	84.8	86.5	84.6	84.3	85.3	86.0	86.9	87.2	89.2	88.3	88.1	89.2	87.9	88.0	86.5	89.5	
3-year	65.2	70.7	74.3	79.7	81.0	83.7	82.3	81.5	82.9	83.2	84.0	83.9	86.1	85.4	85.1	87.7	86.1	86.0	83.8		
4-year	62.0	67.5	71.9	77.6	78.9	80.8	80.5	78.8	81.4	81.6	82.5	82.3	85.2	83.9	83.6	86.3	84.6	84.1			
5-year	59.8	65.8	70.6	76.4	77.4	80.5	79.1	77.8	79.5	80.7	81.8	81.2	84.1	83.1	82.3	85.6	83.4				
6-year	58.1	64.7	69.7	75.8	76.5	79.8	78.4	76.5	79.1	79.5	81.0	80.4	83.7	82.7	81.3	84.9					
7-year	57.1	63.8	68.7	75.2	76.0	79.2	78.0	76.1	78.3	78.9	80.0	80.0	83.1	82.0	80.8						
8-year	56.4	63.1	68.2	74.7	75.1	78.7	76.9	75.6	78.1	78.2	79.9	79.4	82.4	81.3							
9-year	56.0	62.6	67.8	74.3	74.7	78.3	76.6	75.0	77.5	78.2	79.4	79.1	81.8								
10-year	55.8	62.1	67.4	74.1	74.6	78.0	76.0	74.7	77.1	77.9	79.2	78.6									
11-year	55.4	61.7	67.1	73.8	74.4	77.9	75.9	74.3	76.8	77.7	79.0										
12-year	55.1	61.2	66.8	73.6	74.2	77.8	75.5	74.0	76.7	77.6											
13-year	54.8	60.9	66.5	73.3	74.1	77.7	75.3	73.6	76.3												
14-year	54.5	60.6	66.1	73.1	74.1	77.5	75.2	73.5													
15-year	54.3	60.3	66.0	72.8	73.9	77.3	75.1														
16-year	53.9	60.0	65.7	72.5	73.3	77.3															
17-year	53.5	59.8	65.6	72.3	72.9																
18-year	53.3	59.5	65.4	72.0																	
19-year	53.0	59.3	65.3																		
20-year	52.9	59.1	65.0																		

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

Table 28.11
All Cancer Sites (Invasive)

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

All Races, Males and Females

Ages 0-19

Year of Diagnosis

	1975- 1979	1980- 1984	1985- 1989	1990- 1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Survival Time																					
1-year	82.5	85.7	88.2	90.1	90.1	93.0	91.3	91.7	90.8	91.2	92.3	92.2	93.5	92.3	92.8	94.1	93.1	93.7	93.6	92.9	95.3
2-year	73.0	77.2	80.3	83.3	84.8	87.4	85.0	85.3	85.8	84.3	87.2	87.3	89.2	87.9	88.7	89.0	88.4	89.2	88.5	89.2	
3-year	68.0	72.4	76.5	80.0	81.3	85.0	82.0	82.5	83.0	81.9	84.2	84.1	86.3	84.7	86.2	87.3	86.5	87.1	85.8		
4-year	64.9	69.5	74.0	78.0	79.8	82.3	80.4	79.9	81.3	80.3	82.4	82.2	85.2	83.5	84.6	85.7	84.8	85.0			
5-year	62.8	67.8	72.9	76.7	78.3	81.8	78.7	78.6	79.8	79.2	81.7	81.0	84.1	82.4	83.4	84.9	83.4				
6-year	61.1	66.5	71.9	76.0	77.5	81.2	77.7	77.6	79.4	78.2	81.1	80.1	83.7	82.1	82.1	83.8					
7-year	60.3	65.7	71.1	75.4	77.0	80.7	77.4	77.3	78.9	77.6	80.1	79.7	83.1	81.4	81.7						
8-year	59.5	64.9	70.5	74.9	76.0	80.1	76.7	77.0	78.7	77.1	79.9	78.9	82.4	80.9							
9-year	59.0	64.3	70.0	74.5	75.8	79.8	76.5	76.5	78.3	77.0	79.5	78.6	82.1								
10-year	58.6	63.8	69.6	74.3	75.6	79.4	75.8	76.1	78.0	76.6	79.4	78.2									
11-year	58.3	63.5	69.3	74.0	75.4	79.3	75.6	75.7	77.6	76.5	79.2										
12-year	57.9	63.0	69.1	73.8	75.2	79.2	75.4	75.2	77.4	76.2											
13-year	57.7	62.7	68.8	73.4	75.2	79.1	75.1	74.8	77.2												
14-year	57.5	62.3	68.3	73.2	75.0	78.9	75.1	74.8													
15-year	57.2	62.1	68.1	73.0	74.9	78.7	74.8														
16-year	56.9	61.6	67.8	72.7	74.3	78.6															
17-year	56.6	61.4	67.6	72.5	74.1																
18-year	56.3	61.2	67.3	72.2																	
19-year	56.1	60.9	67.1																		
20-year	55.8	60.6	66.8																		

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

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

Estimated United States Cancer Prevalence Counts^a on January 1, 2012
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 <37 ^e	>=37 ^f	Complete ^g
<u>Race</u>	<u>Sex</u>										
All Races ^b	Both Sexes	65,893	56,052	50,529	45,384	38,463	33,067	234,055	326,769	+	+
	Males	34,508	29,895	26,046	23,607	19,837	16,567	122,721	167,928	+	+
	Females	31,385	26,157	24,483	21,777	18,626	16,500	111,334	158,841	+	+
White ^b	Both Sexes	53,100	46,757	42,637	37,801	32,859	29,117	194,105	275,292	+	+
	Males	27,958	25,069	21,916	19,706	17,019	14,676	102,124	141,990	+	+
	Females	25,142	21,688	20,721	18,095	15,840	14,441	91,981	133,302	+	+
Black ^b	Both Sexes	7,885	5,822	4,937	4,699	3,602	2,582	24,832	32,639	+	+
	Males	4,009	3,034	2,544	2,375	1,763	1,223	12,692	16,202	+	+
	Females	3,876	2,788	2,393	2,324	1,839	1,359	12,140	16,437	+	+
Asian/ Pacific Islander ^c	Both Sexes	2,887	2,146	1,848	+	+	+	8,581	+	+	+
	Males	1,517	1,118	1,005	+	+	+	4,497	+	+	+
	Females	1,370	1,028	843	+	+	+	4,084	+	+	+
Hispanic ^d	Both Sexes	13,941	10,460	8,359	+	+	+	39,491	+	+	+
	Males	7,467	5,741	4,453	+	+	+	21,305	+	+	+
	Females	6,474	4,719	3,906	+	+	+	18,186	+	+	+

^a US 2012 cancer prevalence counts are based on 2012 cancer prevalence proportions from the SEER registries and 1/1/2012 US population estimates based on the average of 2011 and 2012 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 11 Areas and Rural Georgia (d) NHIA for Hispanic for SEER 11 Areas and Rural Georgia.

^e Maximum limited-duration prevalence: 37 years for 1975-2012 SEER 9 data; 20 years for 1992-2012 SEER 11 data (used to calculate prevalence for Hispanics and Asian Pacific Islanders).

^{f g} (f) Cases diagnosed more than 37 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 <37 and >=37.

- 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 2008-2012

Age <1			Age 1			Age 2		
	Rate	Cases		Rate	Cases		Rate	Cases
All Sites	23.2	1,337	All Sites	22.3	1,291	All Sites	24.0	1,383
Leukemia	4.6	262	Leukemia	6.8	393	Leukemia	10.6	613
Acute Lymphocytic Leukemia	1.9	111	Acute Lymphocytic Leukemia	4.3	247	Acute Lymphocytic Leukemia	9.4	544
Brain and ONS ^d	3.7	212	Brain and ONS ^d	4.6	264	Brain and ONS ^d	4.3	251
Soft Tissue	3.3	189	Kidney and Renal Pelvis	2.1	120	Kidney and Renal Pelvis	2.1	124
Eye and Orbit	3.0	173	Soft Tissue	1.8	105	Eye and Orbit	1.3	77
Other Endocrine	2.6	151	Eye and Orbit	1.6	92	Other Endocrine	1.3	73
Age 3			Age 4			Age 5		
	Rate	Cases		Rate	Cases		Rate	Cases
All Sites	23.2	1,342	All Sites	18.2	1,068	All Sites	14.1	822
Leukemia	11.2	649	Leukemia	8.2	483	Leukemia	5.6	325
Acute Lymphocytic Leukemia	10.0	581	Acute Lymphocytic Leukemia	7.4	436	Acute Lymphocytic Leukemia	4.8	279
Brain and ONS ^d	4.2	244	Brain and ONS ^d	3.6	213	Brain and ONS ^d	3.7	214
Kidney and Renal Pelvis	2.2	127	Kidney and Renal Pelvis	1.4	82	Non-Hodgkin Lymphoma	1.1	67
Other Endocrine	1.2	70	Soft Tissue	1.1	63	Kidney and Renal Pelvis	0.9	55
Soft Tissue	1.1	61	Non-Hodgkin Lymphoma	0.9	53	Soft Tissue	0.7	38
Age 6			Age 7			Age 8		
	Rate	Cases		Rate	Cases		Rate	Cases
All Sites	13.8	795	All Sites	11.8	685	All Sites	11.8	675
Leukemia	4.7	270	Leukemia	3.9	226	Brain and ONS ^d	3.5	199
Acute Lymphocytic Leukemia	4.3	246	Acute Lymphocytic Leukemia	3.2	186	Leukemia	3.4	196
Brain and ONS ^d	3.9	227	Brain and ONS ^d	3.5	201	Acute Lymphocytic Leukemia	2.9	165
Non-Hodgkin Lymphoma	1.1	66	Non-Hodgkin Lymphoma	1.0	57	Non-Hodgkin Lymphoma	1.0	55
Kidney and Renal Pelvis	0.8	47	Soft Tissue	0.8	46	Soft Tissue	0.7	39
Soft Tissue	0.7	38	Bones and Joints	0.6	33	Bones and Joints	0.7	38
Age 9			Age 10			Age 11		
	Rate	Cases		Rate	Cases		Rate	Cases
All Sites	12.2	696	All Sites	11.6	681	All Sites	11.9	697
Leukemia	3.8	219	Leukemia	3.1	183	Leukemia	2.9	169
Acute Lymphocytic Leukemia	3.1	175	Acute Lymphocytic Leukemia	2.4	138	Acute Lymphocytic Leukemia	1.9	110
Brain and ONS ^d	3.0	171	Brain and ONS ^d	2.8	165	Brain and ONS ^d	2.8	162
Non-Hodgkin Lymphoma	1.3	74	Bones and Joints	1.1	67	Bones and Joints	1.3	75
Bones and Joints	1.0	56	Non-Hodgkin Lymphoma	1.1	66	Non-Hodgkin Lymphoma	1.2	69
Soft Tissue	0.8	44	Soft Tissue	0.8	45	Soft Tissue	0.8	46

^a Rates are per 100,000 per year.

^b Top 5 cancer sites were determined based on the 2008-2012 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. IBID = 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 2008-2012

Age 12			Age 13			Age 14		
	Rate	Cases		Rate	Cases		Rate	Cases
All Sites	13.2	782	All Sites	14.5	861	All Sites	16.4	980
Leukemia	3.1	186	Leukemia	3.3	196	Leukemia	3.6	218
Acute Lymphocytic Leukemia	2.3	137	Acute Lymphocytic Leukemia	2.1	123	Acute Lymphocytic Leukemia	2.3	139
Brain and ONS ^d	2.7	157	Brain and ONS ^d	2.3	135	Brain and ONS ^d	2.5	147
Bones and Joints	1.6	96	Bones and Joints	1.6	98	Hodgkin Lymphoma	1.8	108
Hodgkin Lymphoma	1.2	71	Hodgkin Lymphoma	1.5	91	Bones and Joints	1.6	94
Non-Hodgkin Lymphoma	1.2	70	Non-Hodgkin Lymphoma	1.5	90	Non-Hodgkin Lymphoma	1.6	93
Age 15			Age 16			Age 17		
	Rate	Cases		Rate	Cases		Rate	Cases
All Sites	19.0	1,154	All Sites	19.9	1,231	All Sites	22.9	1,439
Leukemia	3.3	201	Leukemia	3.4	213	Hodgkin Lymphoma	3.6	224
Acute Lymphocytic Leukemia	2.0	119	Acute Lymphocytic Leukemia	2.1	131	Leukemia	3.0	189
Brain and ONS ^d	2.5	152	Hodgkin Lymphoma	2.6	163	Acute Lymphocytic Leukemia	1.6	99
Hodgkin Lymphoma	2.4	143	Brain and ONS ^d	2.5	156	Brain and ONS ^d	2.4	150
Non-Hodgkin Lymphoma	2.1	125	Thyroid	2.5	152	Thyroid	2.4	148
Bones and Joints	2.0	122	Non-Hodgkin Lymphoma	1.4	89	Testis ^e	2.2	140
Age 18			Age 19					
	Rate	Cases		Rate	Cases			
All Sites	22.6	1,429	All Sites	26.0	1,609			
Hodgkin Lymphoma	3.3	207	Hodgkin Lymphoma	4.0	247			
Thyroid	3.0	191	Thyroid	3.8	236			
Leukemia	3.0	189	Testis ^e	3.1	195			
Acute Lymphocytic Leukemia	1.6	104	Leukemia	2.7	168			
Testis ^e	2.7	170	Acute Lymphocytic Leukemia	1.3	83			
Brain and ONS ^d	1.7	110	Brain and ONS ^d	1.9	117			

^a Rates are per 100,000 per year.

^b Top 5 cancer sites were determined based on the 2008-2012 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 2008-2012

Age <1			Age 1			Age 2		
	Rate	Deaths		Rate	Deaths		Rate	Deaths
All Sites	1.7	339	All Sites	2.0	409	All Sites	2.2	435
Leukemia	0.6	120	Leukemia	0.8	168	Leukemia	0.8	159
Acute Lymphocytic Leukemia	0.2	36	Acute Lymphocytic Leukemia	0.2	47	Acute Lymphocytic Leukemia	0.2	44
Brain and ONS ^d	0.3	64	Brain and ONS ^d	0.5	91	Brain and ONS ^d	0.5	107
Other Endocrine	0.2	32	Other Endocrine	0.2	48	Other Endocrine	0.4	76
Liver & IBD ^d	0.1	20	Soft Tissue	0.1	24	Liver & IBD ^d	0.1	28
Soft Tissue	0.1	19	Liver & IBD ^d	0.1	20	Soft Tissue	0.1	25
Age 3			Age 4			Age 5		
	Rate	Deaths		Rate	Deaths		Rate	Deaths
All Sites	2.5	502	All Sites	2.4	489	All Sites	2.5	513
Leukemia	0.7	141	Brain and ONS ^d	0.9	187	Brain and ONS ^d	1.1	221
Acute Lymphocytic Leukemia	0.3	54	Leukemia	0.6	116	Leukemia	0.6	123
Brain and ONS ^d	0.7	138	Acute Lymphocytic Leukemia	0.2	41	Acute Lymphocytic Leukemia	0.2	50
Other Endocrine	0.5	106	Other Endocrine	0.4	82	Other Endocrine	0.3	63
Soft Tissue	0.1	30	Liver & IBD ^d	0.1	22	Kidney and Renal Pelvis	0.1	25
Liver & IBD ^d	0.1	28	Soft Tissue	0.1	22	Soft Tissue	0.1	23
Age 6			Age 7			Age 8		
	Rate	Deaths		Rate	Deaths		Rate	Deaths
All Sites	2.1	430	All Sites	2.1	434	All Sites	2.1	429
Brain and ONS ^d	0.8	170	Brain and ONS ^d	0.9	184	Brain and ONS ^d	0.9	174
Leukemia	0.4	86	Leukemia	0.5	100	Leukemia	0.5	105
Acute Lymphocytic Leukemia	0.2	43	Acute Lymphocytic Leukemia	0.3	56	Acute Lymphocytic Leukemia	0.3	60
Other Endocrine	0.4	73	Other Endocrine	0.3	53	Other Endocrine	0.2	40
Soft Tissue	0.1	23	Soft Tissue	0.1	30	Soft Tissue	0.2	35
Kidney and Renal Pelvis	0.1	21	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	448	All Sites	2.0	403	All Sites	2.1	441
Brain and ONS ^d	0.8	168	Brain and ONS ^d	0.7	143	Brain and ONS ^d	0.7	146
Leukemia	0.5	109	Leukemia	0.6	119	Leukemia	0.6	127
Acute Lymphocytic Leukemia	0.3	56	Acute Lymphocytic Leukemia	0.3	58	Acute Lymphocytic Leukemia	0.3	67
Bones and Joints	0.2	43	Other Endocrine	0.2	36	Bones and Joints	0.2	43
Other Endocrine	0.2	42	Bones and Joints	0.2	33	Other Endocrine	0.2	32
Soft Tissue	0.2	33	Soft Tissue	0.2	31	Soft Tissue	0.1	30

^a Rates are per 100,000 per year. Deaths are for the entire United States over the time period 2008-2012.

^b Top 5 cancer sites were determined based on the 2008-2012 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 2008-2012

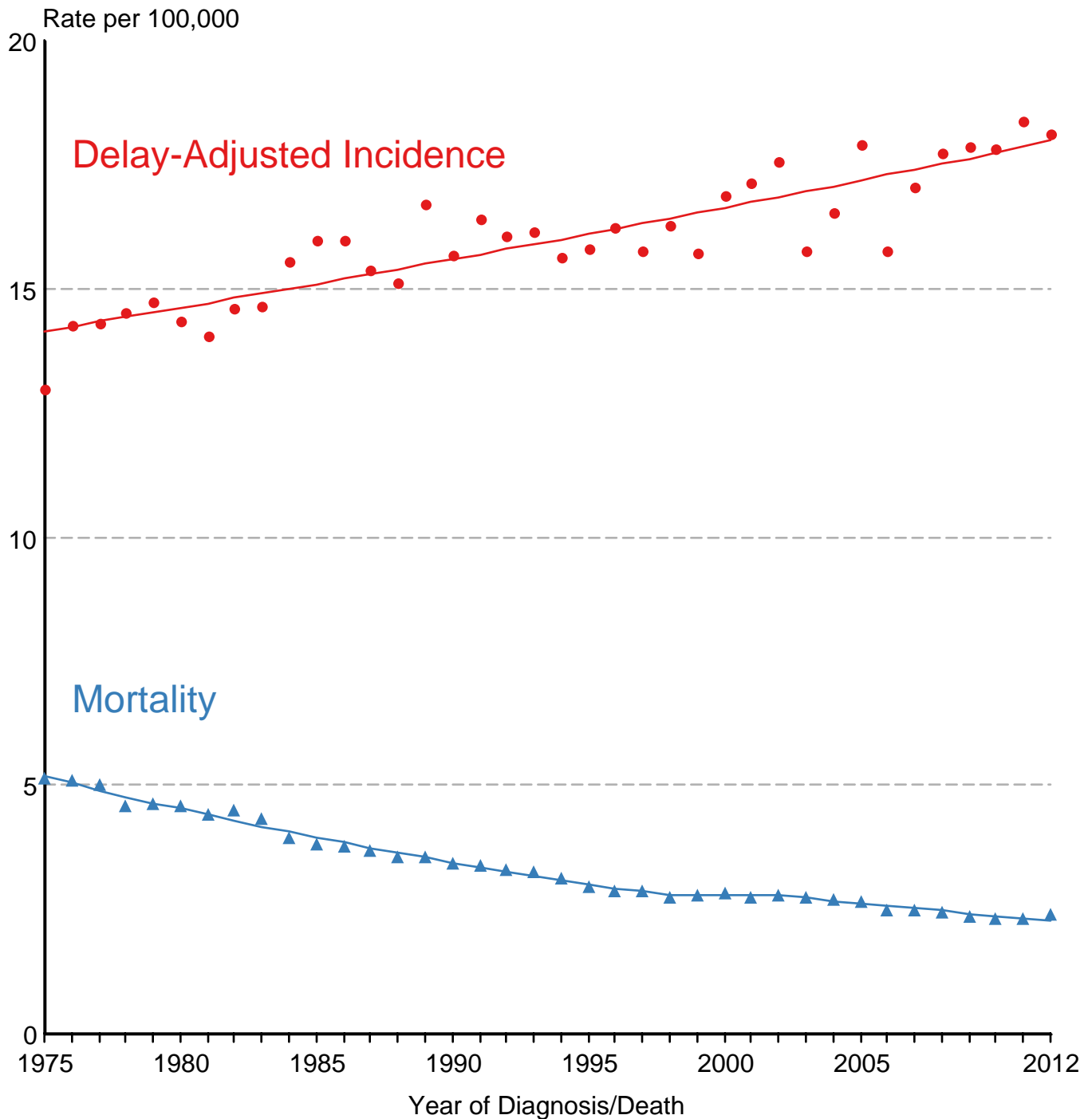
Age 12			Age 13			Age 14		
	Rate	Deaths		Rate	Deaths		Rate	Deaths
All Sites	2.1	433	All Sites	2.2	455	All Sites	2.3	488
Leukemia	0.6	131	Leukemia	0.7	138	Leukemia	0.8	159
Acute Lymphocytic Leukemia	0.3	71	Acute Lymphocytic Leukemia	0.3	69	Acute Lymphocytic Leukemia	0.3	67
Brain and ONS ^d	0.6	122	Brain and ONS ^d	0.6	121	Brain and ONS ^d	0.5	102
Bones and Joints	0.3	54	Bones and Joints	0.2	42	Bones and Joints	0.4	80
Soft Tissue	0.2	38	Soft Tissue	0.2	40	Soft Tissue	0.2	48
Non-Hodgkin Lymphoma	0.1	19	Non-Hodgkin Lymphoma	0.1	23	Non-Hodgkin Lymphoma	0.1	20
Age 15			Age 16			Age 17		
	Rate	Deaths		Rate	Deaths		Rate	Deaths
All Sites	2.6	556	All Sites	2.7	570	All Sites	2.9	644
Leukemia	0.9	180	Leukemia	0.7	141	Leukemia	0.9	187
Acute Lymphocytic Leukemia	0.3	69	Acute Lymphocytic Leukemia	0.3	55	Acute Lymphocytic Leukemia	0.4	83
Brain and ONS ^d	0.6	117	Bones and Joints	0.5	106	Bones and Joints	0.5	118
Bones and Joints	0.4	74	Brain and ONS ^d	0.5	104	Brain and ONS ^d	0.5	109
Soft Tissue	0.2	46	Soft Tissue	0.3	62	Soft Tissue	0.3	63
Non-Hodgkin Lymphoma	0.2	33	Non-Hodgkin Lymphoma	0.2	36	Non-Hodgkin Lymphoma	0.1	31
Age 18			Age 19					
	Rate	Deaths		Rate	Deaths			
All Sites	3.0	672	All Sites	3.3	755			
Leukemia	0.8	177	Leukemia	0.8	179			
Acute Lymphocytic Leukemia	0.3	74	Acute Lymphocytic Leukemia	0.3	65			
Bones and Joints	0.6	123	Brain and ONS ^d	0.6	125			
Soft Tissue	0.4	85	Bones and Joints	0.5	103			
Brain and ONS ^d	0.4	85	Soft Tissue	0.4	88			
Non-Hodgkin Lymphoma	0.2	44	Non-Hodgkin Lymphoma	0.2	43			

^a Rates are per 100,000 per year. Deaths are for the entire United States over the time period 2008-2012.^b Top 5 cancer sites were determined based on the 2008-2012 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.

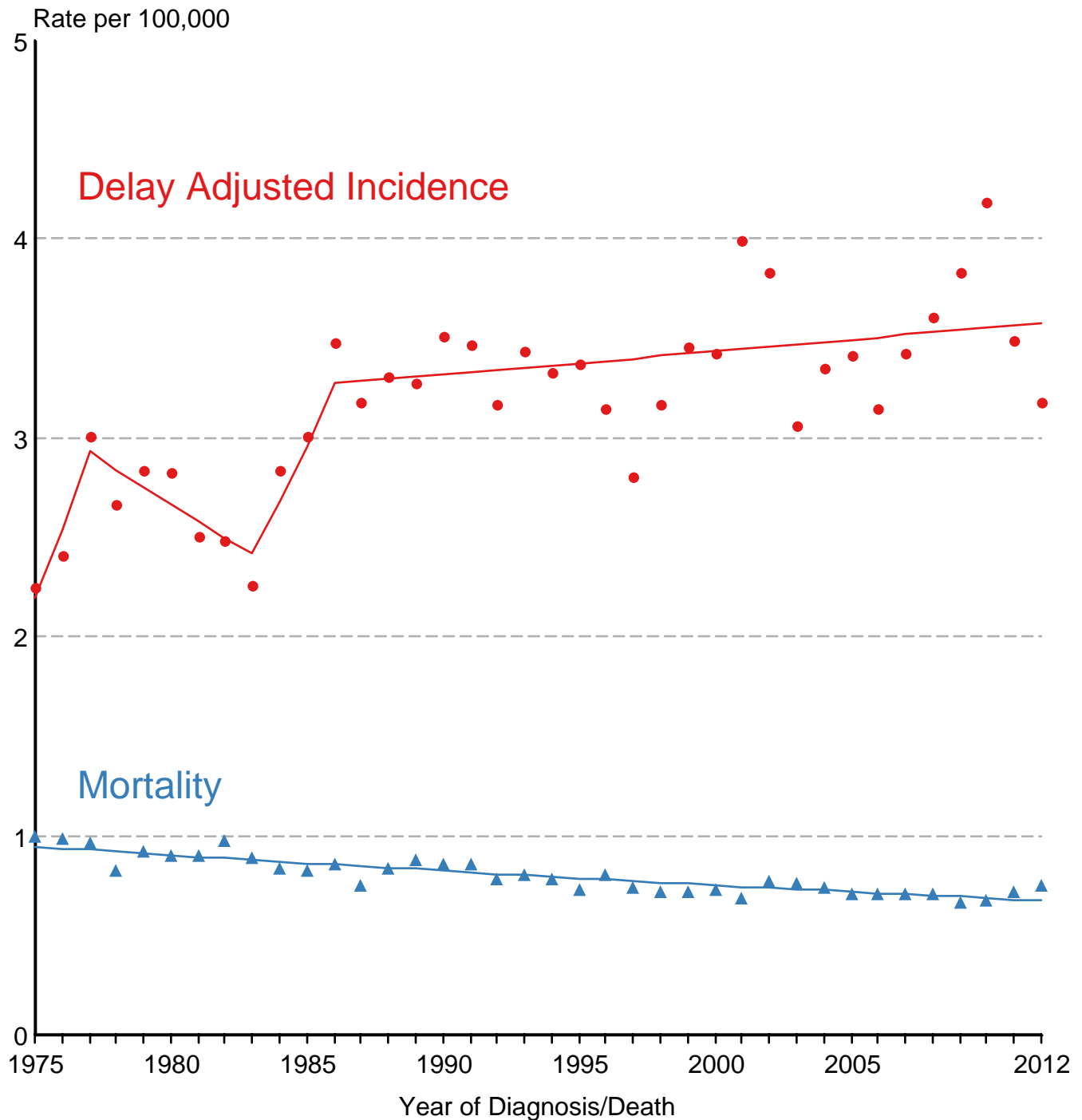
Figure 28.1

SEER Delay-Adjusted Incidence and US Mortality All Childhood Cancers, Under 20 Years of Age Both Sexes, All Races, 1975-2012



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 4.2.0, April 2015,
National Cancer Institute.

SEER Delay-Adjusted Incidence and US Mortality Brain and CNS, Under 15 Years of Age Both Sexes, All Races, 1975-2012



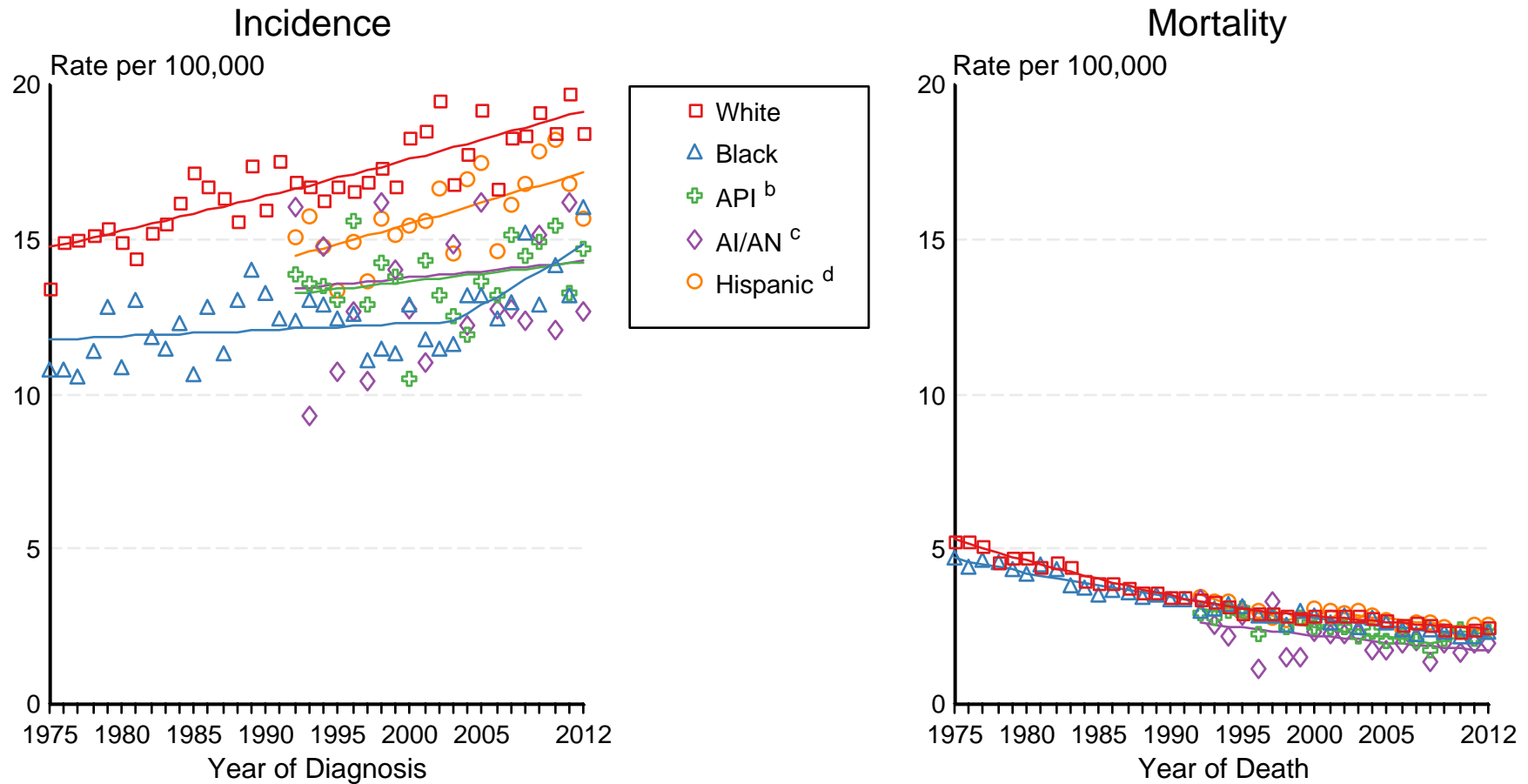
Source: SEER 9 areas and US Mortality Files (National Center for Health Statistics, CDC). Rates are age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1103). Regression lines are calculated using the Joinpoint Regression Program Version 4.2.0, April 2015, National Cancer Institute.

Figure 28.3

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

Joinpoint Analyses for Whites and Blacks from 1975-2012

and for Asian/Pacific Islanders, American Indians/Alaska Natives and Hispanics from 1992-2012



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 4.2.0, April 2015, National Cancer Institute. Joinpoint analyses for Whites and Blacks during the 1975-2012 period allow a maximum of 5 joinpoints. Analyses for other ethnic groups during the period 1992-2012 allow a maximum of 3 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.