

Table 29.1

Age-Adjusted and Age-Specific SEER Cancer Incidence Rates, 2008-2012<sup>a</sup>  
 By International Classification of Childhood Cancer (ICCC)<sup>b</sup> Group and Subgroup<sup>c</sup> and Age at Diagnosis  
 Including myelodysplastic syndromes and Group III benign brain/CNS tumors  
 All Races, Males and Females

ICCC Group and Subgroup	0-14	0-19	<1	1-4	5-9	10-14	15-19
All ICCC Groups Combined							
Excluding Group III benign brain/CNS tumors	161.8	177.3	237.0	220.5	128.3	136.4	223.5
Including Group III benign brain/CNS tumors <sup>d</sup>	173.0	193.2	247.9	228.1	137.6	152.3	253.1
I Leukemia (includes myelodysplastic syndromes)	54.1	49.1	50.4	94.5	44.2	33.9	34.2
I(a) Lymphoid leukemia	41.2	35.3	19.6	78.2	36.5	22.0	17.7
I(b) Acute myeloid leukemia	8.4	8.8	19.0	11.7	4.6	7.6	10.0
I(c) Chronic myeloproliferative diseases	1.5	2.2	3.3	0.8	0.8	2.3	4.2
I(d) Myelodysplastic syndrome and other myeloproliferative	1.5	1.4	5.4	1.8	0.9	0.9	1.4
I(e) Unspecified and other specified leukemias	1.5	1.4	3.1	2.0	1.3	1.0	1.0
II Lymphomas and reticuloendothelial neoplasms	16.7	24.9	4.7	9.0	16.1	25.5	49.5
II(a) Hodgkin lymphoma	6.0	12.4	-	1.2	4.6	12.0	31.7
II(b) Non-Hodgkin lymphoma (except Burkitt lymphoma)	7.5	9.3	-	5.4	7.4	10.2	14.6
II(c) Burkitt lymphoma	2.5	2.5	-	1.5	3.4	2.8	2.4
II(d) Miscellaneous lymphoreticular neoplasms	0.6	0.5	-	0.8	-	-	-
II(e) Unspecified lymphomas	0.2	0.3	-	-	-	-	0.6
III CNS and misc intracranial and intraspinal neoplasms <sup>d</sup>	44.6	46.3	46.6	49.6	43.7	41.3	51.2
III(a) Ependymomas and choroid plexus tumor	4.0	3.7	8.9	6.9	2.5	2.3	2.9
III(b) Astrocytoma	17.5	16.3	14.6	19.9	17.9	15.8	12.8
III(c) Intracranial and intraspinal embryonal tumors	7.3	6.1	12.2	10.5	7.4	3.9	2.6
III(d) Other gliomas	5.8	5.4	2.8	5.6	7.6	4.6	4.2
III(e) Other specified intracranial/intraspinal neoplasms	8.9	13.3	6.4	5.8	7.4	13.2	26.6
III(f) Unspecified intracranial and intraspinal neoplasms	1.2	1.4	-	0.8	1.0	1.6	2.0
IV Neuroblastoma and other peripheral nervous cell tumor	10.3	7.9	49.2	20.7	4.0	1.3	0.9
IV(a) Neuroblastoma and ganglioneuroblastoma	10.1	7.7	49.2	20.5	3.8	1.1	-
IV(b) Other peripheral nervous cell tumors	-	0.2	-	-	-	-	-
V Retinoblastoma	4.3	3.2	29.2	8.7	-	-	-
VI Renal tumors	8.1	6.6	14.8	19.0	5.6	1.0	2.1
VI(a) Nephroblastoma and other nonepithelial renal tumor	7.8	5.9	14.3	18.8	5.4	0.6	-
VI(b) Renal carcinoma	0.2	0.6	-	-	-	-	1.7
VI(c) Unspecified malignant renal tumors	-	-	-	-	-	-	-

<sup>a</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>b</sup> International Classification of Childhood Cancer is based on ICD-O-3. Steliarova-Foucher E, Stiller C, Lacour B, Kaatsch P. International Classification of Childhood Cancer, Third Edition. Cancer. April 1, 2005: Vol 103, No. 7, pg 1457-1467.

<sup>c</sup> Classifications are shown for invasive cases only except as noted. For ICCC groups and subgroups that include *in situ* behavior, only invasive cases are shown except as noted.

<sup>d</sup> Group III and Group III subgroups include benign brain/CNS tumors.

Rates are per 1,000,000 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 29.1 - continued

Age-Adjusted and Age-Specific SEER Cancer Incidence Rates, 2008-2012<sup>a</sup>  
 By International Classification of Childhood Cancer (ICCC)<sup>b</sup> Group and Subgroup<sup>c</sup> and Age at Diagnosis  
 Including myelodysplastic syndromes and Group III benign brain/CNS tumors  
 All Races, Males and Females

<u>ICCC Group and Subgroup</u>	<u>0-14</u>	<u>0-19</u>	<u>&lt;1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>
VII Hepatic tumors	2.9	2.5	11.1	6.7	0.7	0.8	1.2
VII(a) Hepatoblastoma	2.5	1.9	11.0	6.5	-	-	-
VII(b) Hepatic carcinoma	0.4	0.6	-	-	-	0.6	1.1
VII(c) Unspecified malignant hepatic tumors	-	-	-	-	-	-	-
VIII Malignant bone tumors	7.5	9.1	-	1.9	6.3	14.4	13.8
VIII(a) Osteosarcoma	4.4	5.3	-	-	3.5	9.1	8.0
VIII(b) Chondrosarcoma	0.2	0.4	-	-	-	-	1.0
VIII(c) Ewing tumor and related sarcomas of bone	2.5	2.8	-	1.1	2.4	4.2	3.7
VIII(d) Other specified malignant bone tumors	0.3	0.4	-	-	-	-	0.8
VIII(e) Unspecified malignant bone tumors	-	0.2	-	-	-	-	-
IX Soft tissue and other extraosseous sarcomas	11.3	12.5	19.0	11.4	9.4	11.7	16.2
IX(a) Rhabdomyosarcoma	5.3	4.9	5.0	7.7	5.0	3.9	3.6
IX(b) Fibrosarcoma, peripheral nerve & other fibrous	1.0	1.1	4.3	0.7	0.6	0.8	1.6
IX(c) Kaposi sarcoma	-	-	-	-	-	-	-
IX(d) Other specified soft tissue sarcomas	3.8	5.1	6.3	2.2	3.0	5.3	8.8
IX(e) Unspecified soft-tissue sarcomas	1.2	1.4	3.0	0.8	0.7	1.6	2.0
X Germ cell & trophoblastic tumors & neoplasms of gonads	5.8	12.3	18.6	3.7	3.3	7.5	31.5
X(a) Intracranial and intraspinal germ-cell tumors	1.9	2.2	-	-	2.1	2.8	3.3
X(b) Extracranial & extragonadal germ cell tumors	1.3	1.5	11.8	1.2	-	0.7	1.9
X(c) Malignant gonadal germ cell tumors	2.7	8.2	5.6	2.2	1.2	4.1	24.6
X(d) Gonadal carcinomas	-	0.4	-	-	-	-	1.5
X(e) Other and unspecified malignant gonadal tumors	-	0.2	-	-	-	-	0.6
XI Other malignant epithelial neoplasms and melanomas <sup>d</sup>	6.8	18.1	-	2.0	3.7	14.5	51.8
XI(a) Adrenocortical carcinoma	0.3	0.3	-	-	-	-	-
XI(b) Thyroid carcinoma	2.9	8.9	-	-	1.2	7.1	26.7
XI(c) Nasopharyngeal carcinoma	0.3	0.6	-	-	-	0.9	1.3
XI(d) Malignant melanoma	1.6	4.0	-	1.0	1.2	2.7	11.1
XI(e) Skin carcinoma	-	-	-	-	-	-	-
XI(f) Other and unspecified carcinomas <sup>d</sup>	1.6	4.2	-	-	0.9	3.4	12.3
XII Other and unspecified malignant neoplasms	0.5	0.6	-	0.9	-	-	0.8
XII(a) Other specified malignant tumors	0.3	0.3	-	-	-	-	-
XII(b) Other unspecified malignant tumors	0.2	0.3	-	-	-	-	-
Not classified by ICC	0.3	0.3	-	-	-	-	-

<sup>a</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>b</sup> International Classification of Childhood Cancer is based on ICD-O-3. Steliarova-Foucher E, Stiller C, Lacour B, Kaatsch P. International Classification of Childhood Cancer, Third Edition. Cancer. April 1, 2005: Vol 103, No. 7, pg 1457-1467.

<sup>c</sup> Classifications are shown for invasive cases only except as noted. For ICC groups and subgroups that include *in situ* behavior, only invasive cases are shown except as noted.

<sup>d</sup> Includes *in situ* urinary bladder tumors.

Rates are per 1,000,000 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 29.2

Age-Adjusted SEER Cancer Incidence Rates<sup>a</sup>  
 By International Classification of Childhood Cancer (ICCC)<sup>b</sup> Selected Group and Subgroup<sup>c</sup> and Year of Diagnosis  
 Excluding benign brain and myelodysplastic syndromes  
 All Races, Males and Females, Ages 0-19

<u>ICCC Group and Subgroup</u>	<u>1975-2012</u>	<u>1975-1984</u>	<u>1985-1993</u>	<u>1994-2003</u>	<u>2004-2012</u>
All ICCC Groups Combined	159.7	143.8	159.2	162.4	172.9
I Leukemia	39.1	34.9	38.4	39.8	43.0
I(a) Lymphoid leukemia	29.3	25.7	28.6	30.1	32.3
I(b) Acute myeloid leukemia	7.1	5.9	6.9	7.6	8.0
II Lymphomas and reticuloendothelial neoplasms	24.7	24.6	24.7	23.7	26.0
II(a) Hodgkin lymphoma	13.2	14.4	13.9	11.9	12.5
II(b,c,e) Non-Hodgkin lymphoma	11.0	9.5	10.1	11.3	13.0
III CNS & misc intracranial & intraspinal neoplasms	28.3	23.1	29.8	29.7	30.3
III(a) Ependymomas and choroid plexus tumor	2.4	1.8	2.6	2.4	2.7
III(b) Astrocytoma	14.3	11.7	15.7	14.6	15.3
III(c) Intracranial and intraspinal embryonal tumors	5.6	4.3	5.4	6.5	6.1
III(d) Other gliomas	5.1	4.4	5.1	5.5	5.5
IV Neuroblastoma and other peripheral nervous cell tumors	8.5	8.1	8.4	8.4	9.1
IV(a) Neuroblastoma and ganglioneuroblastoma	8.3	8.0	8.1	8.1	8.8
V Retinoblastoma	3.1	2.8	3.3	3.1	3.0
VI Renal tumors	6.6	6.5	6.8	6.8	6.3
VI(a) Nephroblastoma and other nonepithelial renal tumor	6.1	6.2	6.3	6.3	5.6
VII Hepatic tumors	1.9	1.3	1.6	2.1	2.5
VII(a) Hepatoblastoma	1.3	0.9	1.2	1.5	1.7
VIII Malignant bone tumors	8.6	8.2	8.9	8.7	8.6
VIII(a) Osteosarcoma	4.7	4.2	4.9	5.0	4.7
VIII(c) Ewing tumor and related sarcomas of bone	2.9	3.1	3.0	2.7	2.9
IX Soft tissue and other extraosseous sarcomas	11.6	10.4	11.1	11.9	13.0
IX(a) Rhabdomyosarcoma	4.6	4.1	4.7	4.7	4.8
X Germ cell & trophoblastic tumors & neoplasms of gonads	10.6	9.3	10.4	10.9	11.8
X(a) Intracranial and intraspinal germ-cell tumor	1.4	0.9	1.3	1.9	1.7
X(c) Malignant gonadal germ cell tumor	6.8	5.9	6.5	6.9	7.9
XI Other malignant epithelial neoplasms and melanomas <sup>d</sup>	16.1	13.7	15.1	16.7	18.9
XI(b) Thyroid carcinoma	6.1	4.9	5.3	6.1	8.0
XI(d) Malignant melanoma	5.1	3.9	5.3	5.6	5.6

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

Rates are per 1,000,000 and are age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130).

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<sup>d</sup> Includes *in situ* urinary bladder tumors.

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

Table 29.3

Age-Adjusted SEER Cancer Incidence Trends, 1975-2012<sup>a</sup>  
 By International Classification of Childhood Cancer (ICCC)<sup>b</sup> Selected Group and Subgroup<sup>c</sup>  
 Excluding benign brain and myelodysplastic syndromes  
 All Races, Males and Females

ICCC Group and Subgroup	Ages 0-14				Ages 0-19			
	% Change 1975-2012	APC 1975-2012	APC 1975-1993	APC 1994-2012	% Change 1975-2012	APC 1975-2012	APC 1975-1993	APC 1994-2012
All ICCC Groups Combined	35.2	0.6*	1.0*	0.7*	36.1	0.6*	1.0*	0.7*
I Leukemia	46.9	0.7*	1.0*	0.8*	40.5	0.7*	0.9*	0.8*
I(a) Lymphoid leukemia	60.1	0.8*	1.1*	0.7	54.9	0.8*	1.1*	0.7*
I(b) Acute myeloid leukemia	69.3	1.1*	1.8*	0.9	55.9	1.1*	1.4*	0.6
II Lymphomas and reticuloendothelial neo.	14.2	0.3	-0.7*	1.7*#	11.5	0.2	0.0	1.0*#
II(a) Hodgkin lymphoma	3.1	-0.6*	-1.2	1.2#	-3.9	-0.5*	-0.4	0.6
II(b,c,e) Non-Hodgkin lymphoma	30.2	0.9*	-0.3	2.1*#	41.5	1.1*	0.6	1.5*
III CNS & misc intracranial & intraspinal neo.	36.3	0.9*	2.3*	0.5#	38.0	0.8*	2.1*	0.4#
III(a) Ependymomas and choroid plexus tumors	-	-	-	0.9	-	-	-	1.0
III(b) Astrocytoma	78.8	1.1*	3.3*	0.8#	68.4	0.8*	2.8*	0.8#
III(c) Intracranial and intraspinal embryonal tum.	65.3	1.0*	1.5	-0.4	84.7	1.1*	1.8	-0.4@
III(d) Other gliomas	-45.0	0.5	0.5	0.7	-38.6	0.7*	0.6	0.2
IV Neuroblastoma and other peripheral nervous cell tumors	33.5	0.3	0.6	0.3	36.3	0.3	0.6	0.5
IV(a) Neuroblastoma and ganglioneuroblastoma	33.5	0.4	0.5	0.4	31.4	0.3	0.4	0.4
V Retinoblastoma	11.5	0.2	1.8*	-0.3#	11.5	0.2	1.9*	-0.4#
VI Renal tumors	-14.8	-0.2	0.7	-1.2@	-13.6	-0.1	0.9	-0.9@
VI(a) Nephroblastoma and other nonepithelial renal tumors	-15.3	-0.2	0.6	-1.2	-15.3	-0.3	0.7	-1.2@
VII Hepatic tumors	-	-	-	-	-	-	-	-
VII(a) Hepatoblastoma	-	-	-	-	-	-	-	-
VIII Malignant bone tumors	73.9	0.2	0.8	0.4	33.9	0.2	0.9	-0.1
VIII(a) Osteosarcoma	-	-	-	0.7	128.8	0.5	1.6*	-0.1
VIII(c) Ewing tum. and related sarcomas of bone	-	-	-	-	-13.6	-0.2	0.4	0.2
IX Soft tissue and other extrasosseous sarcomas	54.5	0.8*	0.8	1.1*	54.7	0.7*	0.5	0.8
IX(a) Rhabdomyosarcoma	68.0	0.4	1.3	0.5	64.2	0.4	1.2	0.2
X Germ cell & trophoblastic tum. & neo. of gonads	37.4	1.1*	1.4	0.4	26.4	0.8*	1.5*	0.5
X(a) Intracranial and intraspinal germ-cell tum.	-	-	-	-	-	-	-	-
X(c) Malignant gonadal germ cell tumors	-18.3	-	-	-	54.7	0.9*	1.3	1.0*
XI Other malignant epithelial neo. and melanomas <sup>d</sup>	9.0	0.9*	0.4	1.1	83.3	1.2*	0.9	1.9*
XI(b) Thyroid carcinoma	71.6	-	-	-	206.5	1.9*	0.7	3.9*#
XI(d) Malignant melanoma	-	-	-	-	41.9	1.0*	2.1*	0.2

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

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

<sup>b</sup> International Classification of Childhood Cancer is based on ICD-O-3. Steliarova-Foucher E, Stiller C, Lacour B, Kaatsch P.

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<sup>d</sup> Includes *in situ* urinary bladder tumors.

\* 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).

@ The APC for 1994-2012 is significantly different from the APC for 1975-1993 (p<.10).

- Statistic could not be calculated. Trend based on less than 10 cases for at least one year within the time interval.

Neoplasms are abbreviated as neo. Tumors are abbreviated as tum.

Table 29.4

Age-Adjusted SEER Cancer Incidence Trends, 1975-2012<sup>a</sup>  
 By International Classification of Childhood Cancer (ICCC)<sup>b</sup> Selected Group and Subgroup<sup>c</sup>  
 Excluding benign brain and myelodysplastic syndromes  
 All Races, Males

ICCC Group and Subgroup	Ages 0-14				Ages 0-19			
	% Change 1975-2012	APC 1975-2012	APC 1975-1993	APC 1994-2012	% Change 1975-2012	APC 1975-2012	APC 1975-1993	APC 1994-2012
All ICCG Groups Combined	29.3	0.6*	1.1*	0.5* <sup>@</sup>	31.0	0.6*	1.1*	0.5* <sup>#</sup>
I Leukemia	26.9	0.7*	0.9*	0.6	25.3	0.6*	0.7*	0.6
I(a) Lymphoid leukemia	31.8	0.7*	1.1*	0.4	33.4	0.7*	1.2*	0.5
I(b) Acute myeloid leukemia	80.4	-	-	0.5	58.2	1.1*	0.5	0.0
II Lymphomas and reticuloendothelial neo.	13.7	0.1	-0.8	1.7* <sup>#</sup>	11.1	0.1	-0.1	1.1* <sup>#</sup>
II(a) Hodgkin lymphoma	1.2	-	-	-	-14.7	-0.6*	-0.5	1.3* <sup>#</sup>
II(b,c,e) Non-Hodgkin lymphoma	25.9	0.5*	-0.5	1.6* <sup>@</sup>	48.0	0.8*	0.4	1.0
III CNS & misc intracranial & intraspinal neo.	62.2	0.9*	2.7*	0.2 <sup>#</sup>	47.3	0.8*	2.4*	0.1 <sup>#</sup>
III(a) Ependymomas and choroid plexus tumors	-	-	-	-	-	-	-	-
III(b) Astrocytoma	84.9	0.9*	3.5*	0.7 <sup>#</sup>	58.2	0.6*	3.0*	0.6 <sup>#</sup>
III(c) Intracranial and intraspinal embryonal tum.	-	-	-	-0.5	-	-	-	-0.6
III(d) Other gliomas	-21.1	-	-	-	-16.1	-	-	-0.6
IV Neuroblastoma and other peripheral nervous cell tumors	55.9	0.4	1.3	0.5	54.0	0.4	1.5	0.5
IV(a) Neuroblastoma and ganglioneuroblastoma	55.9	0.4	1.2	0.6	50.6	0.4	1.3	0.6
V Retinoblastoma	-	-	-	-	-	-	-	-
VI Renal tumors	-43.6	-0.2	1.5	-1.7 <sup>#</sup>	-44.2	-0.2	1.3	-1.6 <sup>#</sup>
VI(a) Nephroblastoma and other nonepithelial renal tumors	-36.4	-0.2	1.4	-1.7 <sup>#</sup>	-36.4	-0.3	1.3	-1.7 <sup>#</sup>
VII Hepatic tumors	-	-	-	-	-	-	-	-
VII(a) Hepatoblastoma	-	-	-	-	-	-	-	-
VIII Malignant bone tumors	67.7	0.6	0.3	-0.2	57.2	0.5	1.1	-0.5
VIII(a) Osteosarcoma	-	-	-	-	-	-	-	-0.6
VIII(c) Ewing tum. and related sarcomas of bone	-	-	-	-	3.6	-	-	-
IX Soft tissue and other extrasosseous sarcomas	47.9	0.7*	0.7	0.7	58.7	0.8*	0.8	0.7
IX(a) Rhabdomyosarcoma	72.6	-	-	-0.5	61.9	-	-	-0.3
X Germ cell & trophoblastic tum. & neo. of gonads	11.0	-	-	-	76.4	1.1*	1.7	0.7
X(a) Intracranial and intraspinal germ-cell tum.	-	-	-	-	-	-	-	-
X(c) Malignant gonadal germ cell tum. (testis)	-	-	-	-	112.9	1.2*	1.3	1.7*
XI Other malignant epithelial neo. and melanomas <sup>d</sup>	-10.7	-	-	-	33.3	1.0*	1.1	1.3* <sup>#</sup>
XI(b) Thyroid carcinoma	-	-	-	-	-	-	-	-
XI(d) Malignant melanoma	-	-	-	-	19.7	-	-	-

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

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

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<sup>d</sup> Includes *in situ* urinary bladder tumors.

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

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Table 29.5

Age-Adjusted SEER Cancer Incidence Trends, 1975-2012<sup>a</sup>  
 By International Classification of Childhood Cancer (ICCC)<sup>b</sup> Selected Group and Subgroup<sup>c</sup>  
 Excluding benign brain and myelodysplastic syndromes  
 All Races, Females

ICCC Group and Subgroup	Ages 0-14				Ages 0-19			
	% Change 1975-2012	APC 1975-2012	APC 1975-1993	APC 1994-2012	% Change 1975-2012	APC 1975-2012	APC 1975-1993	APC 1994-2012
All ICCG Groups Combined	42.6	0.6*	0.9*	0.9*	42.0	0.6*	0.9*	0.9*
I Leukemia	78.4	0.7*	1.2	1.1*	64.0	0.7*	1.2*	1.1*
I(a) Lymphoid leukemia	101.5	0.8*	1.2	1.1*	86.0	0.8*	1.1	1.0*
I(b) Acute myeloid leukemia	55.1	0.8*	2.0	1.4	52.5	1.0*	2.5*	1.3*
II Lymphomas and reticuloendothelial neo.	15.1	0.5	-0.8	1.8* <sup>#</sup>	12.0	0.2	0.2	0.8
II(a) Hodgkin lymphoma	5.4	-	-	-	9.4	-0.5	-0.2	-0.2
II(b,c,e) Non-Hodgkin lymphoma	42.4	-	-	-	27.3	1.8*	1.0	2.4*
III CNS & misc intracranial & intraspinal neo.	12.2	0.9*	1.8*	0.8	27.9	0.8*	1.7*	0.9
III(a) Ependymomas and choroid plexus tumors	-	-	-	-	-	-	-	-
III(b) Astrocytoma	72.9	1.2*	3.0*	0.9 <sup>@</sup>	79.5	0.9*	2.6*	1.0
III(c) Intracranial and intraspinal embryonal tum.	-	-	-	-	-	-	-	0.0
III(d) Other gliomas	-	-	-	-	-	-	-	-
IV Neuroblastoma and other peripheral nervous cell tumors	14.4	0.3	-0.5	-0.1	20.5	0.2	-0.7	0.1
IV(a) Neuroblastoma and ganglioneuroblastoma	14.4	0.3	-0.5	0.1	14.4	0.2	-0.7	0.1
V Retinoblastoma	-	-	-	-	-	-	-	-
VI Renal tumors	18.0	-0.2	-0.1	-0.7	22.8	0.0	0.6	-0.3
VI(a) Nephroblastoma and other nonepithelial renal tumors	6.2	-0.3	-0.1	-0.7	6.2	-0.3	0.2	-0.7
VII Hepatic tumors	-	-	-	-	-	-	-	-
VII(a) Hepatoblastoma	-	-	-	-	-	-	-	-
VIII Malignant bone tumors	82.8	-	1.4	-	4.7	-0.3	0.7	0.7
VIII(a) Osteosarcoma	-	-	-	-	69.4	0.1	1.1	1.0
VIII(c) Ewing tum. and related sarcomas of bone	-	-	-	-	-	-	-	-
IX Soft tissue and other extrasosseous sarcomas	61.7	0.8*	0.7	1.3	49.9	0.7*	0.2	0.8
IX(a) Rhabdomyosarcoma	-	-	-	-	66.5	-	-	-
X Germ cell & trophoblastic tum. & neo. of gonads	64.2	-	-	1.3	-15.3	0.2	1.1	0.3
X(a) Intracranial and intraspinal germ-cell tum.	-	-	-	-	-	-	-	-
X(c) Malignant gonadal germ cell tum. (ovary)	-	-	-	-	-10.7	-	-	-0.2
XI Other malignant epithelial neo. and melanomas <sup>d</sup>	23.8	-	-	1.3	113.0	1.3*	0.7	2.2* <sup>@</sup>
XI(b) Thyroid carcinoma	-	-	-	-	259.6	2.1*	0.9	3.8* <sup>#</sup>
XI(d) Malignant melanoma	-	-	-	-	66.7	-	-	0.6

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

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

<sup>b</sup> International Classification of Childhood Cancer is based on ICD-O-3. Steliarova-Foucher E, Stiller C, Lacour B, Kaatsch P. International Classification of Childhood Cancer, Third Edition. Cancer. April 1, 2005: Vol 103, No. 7, pg 1457-1467.

<sup>c</sup> Classifications are shown for invasive cases only except as noted. For ICCG groups and subgroups that include *in situ* behavior, only invasive cases are shown except as noted.

<sup>d</sup> Includes *in situ* urinary bladder tumors.

\* 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).

@ The APC for 1994-2012 is significantly different from the APC for 1975-1993 (p<.10).

- Statistic could not be calculated. Trend based on less than 10 cases for at least one year within the time interval. Neoplasms are abbreviated as neo. Tumors are abbreviated as tum.

Table 29.6

5-Year Relative Survival (Percent), 2005-2011<sup>a</sup>By International Classification of Childhood Cancer (ICCC)<sup>b</sup> Selected Group and Subgroup<sup>c</sup> and Sex and Age  
Excluding benign brain and myelodysplastic syndromes

ICCC Group & Subgroup	Ages 0-19 by Sex			Both Sexes by Age					
	Total	Male	Female	<1	1-4	5-9	10-14	15-19	0-14
All ICCC Groups Combined	82.8	81.7	84.1	78.0	84.6	82.1	81.4	83.8	82.4
I Leukemia	82.8	82.6	83.2	62.0	90.1	87.9	77.3	72.0	85.1
I(a) Lymphoid leukemia	87.5	86.7	88.6	56.7	93.6	90.7	81.1	75.9	89.3
I(b) Acute myeloid leukemia	63.6	63.7	63.3	63.0	66.9	70.1	62.6	59.4	65.3
II Lymphomas and reticuloendothelial neo.	92.4	92.3	92.6	78.2 <sup>d</sup>	92.5	93.4	92.9	92.2	92.6
II(a) Hodgkin lymphoma	97.0	97.1	96.9	-	93.2 <sup>d</sup>	97.8	98.2	96.5	97.9
II(b,c,e) Non-Hodgkin lymphoma	87.2	87.8	86.1	-	90.9	90.7	87.6	84.3	89.2
III CNS & misc intracranial & intraspinal neo.	73.1	72.5	73.8	57.4	72.4	70.1	77.3	79.5	71.8
III(a) Ependymomas and choroid plexus tumor	76.4	74.3	79.0	56.3 <sup>d</sup>	76.8	75.0 <sup>d</sup>	82.2 <sup>d</sup>	83.9 <sup>d</sup>	75.0
III(b) Astrocytoma	83.1	81.6	84.6	80.2	90.9	81.4	80.5	79.7	83.9
III(c) Intracranial and intraspinal embryonal tumors	61.7	62.3	60.8	31.0	55.0	71.0	71.0	71.6	60.5
III(d) Other gliomas	58.2	62.0	54.4	77.0 <sup>d</sup>	45.9	43.0	69.3	82.6	52.4
IV Neuroblastoma and other peripheral nervous cell tumors	78.0	76.4	79.7	92.2	73.0	66.2	62.9 <sup>d</sup>	76.5 <sup>d</sup>	78.0
IV(a) Neuroblastoma and ganglioneuroblastoma	78.0	76.6	79.6	92.5	72.9	65.8	62.0 <sup>d</sup>	-	78.0
V Retinoblastoma	96.5	95.7	97.3	97.3	95.5	-	-	-	96.5
VI Renal tumors	89.6	87.9	91.1	93.9	91.2	90.0	82.3 <sup>d</sup>	68.9 <sup>d</sup>	90.9
VI(a) Nephroblastoma and other nonepithelial renal tumor	91.4	90.3	92.4	93.9	91.5	91.5	91.7 <sup>d</sup>	-	91.8
VII Hepatic tumors	70.5	70.2	71.1	87.0	81.4	67.3 <sup>d</sup>	29.3 <sup>d</sup>	47.4 <sup>d</sup>	75.0
VII(a) Hepatoblastoma	81.7	80.2	84.8	86.4	80.7	-	-	-	82.1
VIII Malignant bone tumors	69.6	67.2	73.0	-	81.5 <sup>d</sup>	75.2	71.7	64.7	73.1
VIII(a) Osteosarcoma	65.6	62.3	69.7	-	-	68.2 <sup>d</sup>	69.3	61.2	68.8
VIII(c) Ewing tumor and related sarcomas of bone	71.8	68.4	77.7	-	97.0	84.7	71.4	61.1	78.1
IX Soft tissue and other extraosseous sarcomas	71.8	70.1	73.7	63.4	76.2	78.1	70.9	69.2	73.1
IX(a) Rhabdomyosarcoma	66.0	65.7	66.5	53.5 <sup>d</sup>	73.2	77.7	57.5	52.5	68.9
X Germ cell & trophoblastic tumors & neo. of gonads	92.0	91.9	92.3	89.4	94.0	93.7	94.2	91.4	93.1
X(a) Intracranial and intraspinal germ-cell tumor	88.2	89.9	81.7 <sup>d</sup>	-	-	86.4 <sup>d</sup>	93.3	87.1	88.9
X(c) Malignant gonadal germ cell tumor	95.7	95.1	97.2	100.0	98.5	97.9	98.8	94.7	98.8
XI Other malignant epithelial neo. and melanomas <sup>f</sup>	92.1	87.3	94.6	-	96.4	93.2	92.8	91.8	92.8
XI(b) Thyroid carcinoma	99.5	98.7	99.7	-	-	97.8	100.0	99.5	99.7
XI(d) Malignant melanoma	94.3	91.0	96.4	-	-	94.6	94.2	94.8	93.1

<sup>a</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).

Based on follow-up of patients into 2012.

<sup>b</sup> International Classification of Childhood Cancer is based on ICD-O-3. Steliarova-Foucher E, Stiller C, Lacour B, Kaatsch P. International Classification of Childhood Cancer, Third Edition. Cancer. April 1, 2005; Vol 103, No. 7, pg 1457-1467.

<sup>c</sup> Classifications are shown for invasive cases only. For ICCC groups and subgroups that include *in situ* behavior, only invasive cases are shown except as noted.

<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> Includes *in situ* urinary bladder tumors.

- Statistic could not be calculated due to fewer than 25 cases during the time period.  
Neoplasms are abbreviated as neo.

Table 29.7  
U.S. Childhood Cancer Survivors at January 1, 2012  
Number of People Previously Diagnosed with Cancer as Children (Ages 0-19 Years) in the United States and Alive January 1, 2012  
By International Classification of Childhood Cancer (ICCC)<sup>a</sup> Selected Group and Subgroup, Age Group, and Sex

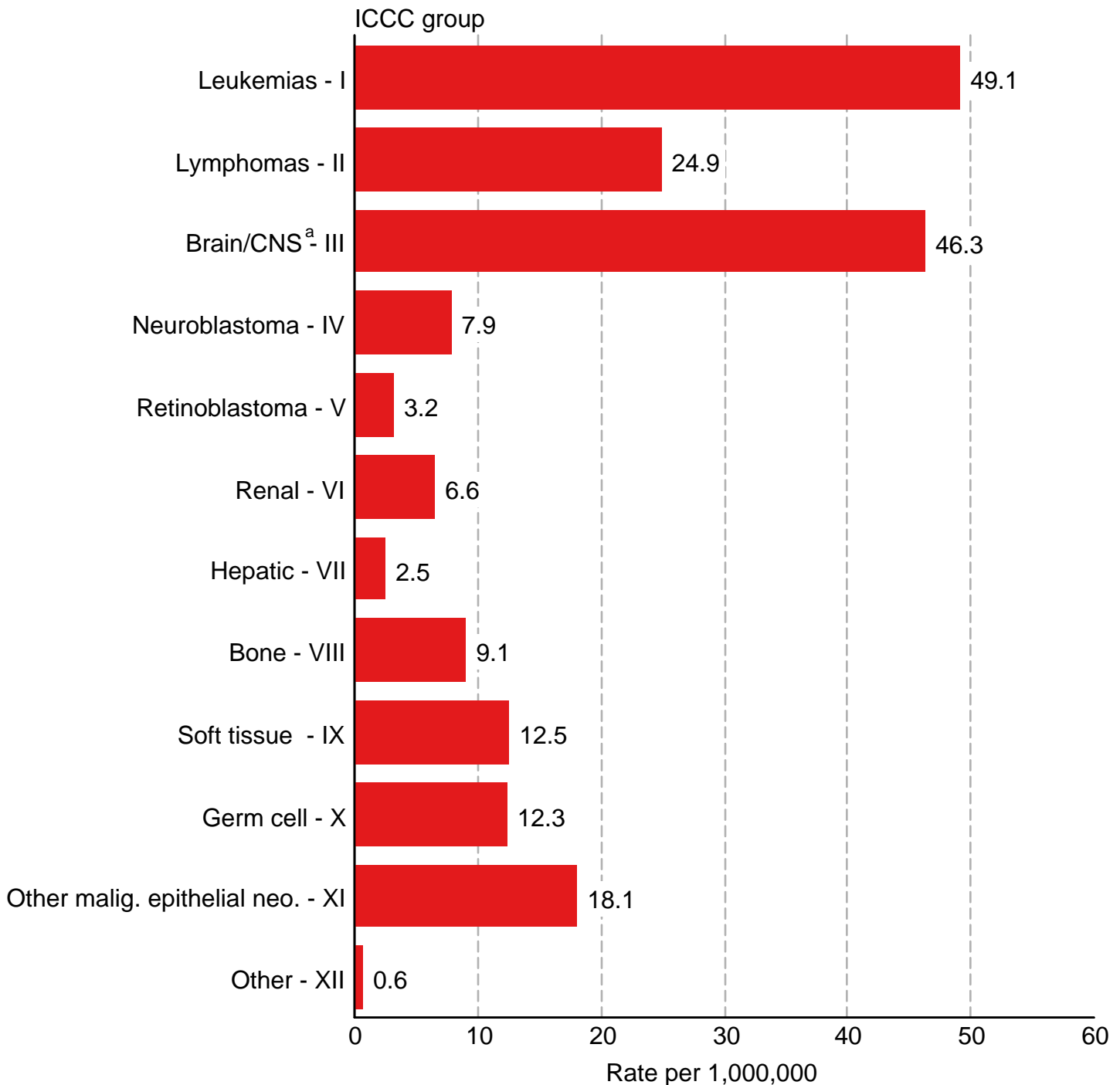
Site	Sex	Complete Prevalence Counts by Age at Prevalence							All Ages		
		0-19	20-29	30-39	40-49	50-59	60+	All Ages	Diagnosed between 1975-2011	Diagnosed before 1975	% <sup>b</sup>
									Count	Count	% <sup>b</sup>
All Sites	Both	115,689	98,695	65,873	55,981	41,852	20,877	398,967	326,512	72,455	18
	Male	62,037	51,574	32,716	25,507	17,574	10,684	200,092	168,045	32,047	16
	Female <sup>c</sup>	53,652	47,121	33,157	30,474	24,278	10,193	198,875	158,467	40,408	20
I Leukemia	Both	36,451	21,624	12,675	5,684	1,981	266	78,681	74,399	4,282	5
	Male	20,275	11,238	6,458	2,955	936	116	41,978	40,061	1,917	5
	Female	16,176	10,386	6,217	2,729	1,045	150	36,703	34,338	2,365	6
Acute lymphocytic leukemia <sup>d</sup>	Both	30,816	17,704	10,733	5,036	840	8	65,137	61,916	3,221	5
	Male	17,122	9,418	5,618	2,799	465	4	35,426	33,759	1,667	5
	Female	13,694	8,286	5,115	2,237	375	4	29,711	28,157	1,554	5
I(b) Acute myeloid leukemia	Both	3,991	2,609	1,236	762	283	7	8,888	8,389	499	6
	Male	2,135	1,183	508	356	154	5	4,341	4,077	264	6
	Female	1,856	1,426	728	406	129	2	4,547	4,312	235	5
II(a) Hodgkin lymphoma	Both	4,686	9,188	8,009	7,778	5,470	1,603	36,734	31,454	5,280	14
	Male	2,667	4,625	4,018	3,845	2,678	820	18,653	15,828	2,825	15
	Female	2,019	4,563	3,991	3,933	2,792	783	18,081	15,626	2,455	14
II(b,c,e) Non-Hodgkin lymphoma	Both	6,848	7,511	4,846	3,366	1,946	1,295	25,812	22,302	3,510	14
	Male	4,523	4,905	3,321	2,150	1,022	748	16,669	14,771	1,898	11
	Female	2,325	2,606	1,525	1,216	924	547	9,143	7,531	1,612	18
III CNS and misc intracranial & intraspinal neoplasms	Both	21,183	15,559	9,245	8,586	5,494	1,997	62,064	51,221	10,843	17
	Male	11,260	8,627	5,046	4,342	2,464	911	32,650	27,727	4,923	15
	Female	9,923	6,932	4,199	4,244	3,030	1,086	29,414	23,494	5,920	20
IV Neuroblastoma & other peripheral nervous cell tumor	Both	9,642	4,053	2,315	1,874	1,602	907	20,393	16,178	4,215	21
	Male	4,976	2,076	1,064	588	557	216	9,477	8,172	1,305	14
	Female	4,666	1,977	1,251	1,286	1,045	691	10,916	8,006	2,910	27
VI Renal tumors	Both	7,849	4,793	3,712	4,483	2,757	991	24,585	16,656	7,929	32
	Male	3,819	2,264	1,640	2,534	1,496	577	12,330	7,810	4,520	37
	Female	4,030	2,529	2,072	1,949	1,261	414	12,255	8,846	3,409	28
VIII Malignant bone tumors	Both	3,642	4,433	3,275	2,535	2,524	1,048	17,457	13,938	3,519	20
	Male	2,124	2,628	1,725	1,318	1,106	548	9,449	7,830	1,619	17
	Female	1,518	1,805	1,550	1,217	1,418	500	8,008	6,108	1,900	24
VIII(a) Osteosarcoma	Both	1,853	2,331	1,782	1,354	1,252	874	9,446	7,376	2,070	22
	Male	1,044	1,307	969	689	543	411	4,963	4,022	941	19
	Female	809	1,024	813	665	709	463	4,483	3,354	1,129	25
VIII(c) Ewing tumor & related sarcomas of bone	Both	1,410	1,424	1,028	757	383	168	5,170	4,581	589	11
	Male	850	877	478	377	194	60	2,836	2,593	243	9
	Female	560	547	550	380	189	108	2,334	1,988	346	15
IX Soft tissue & other extraosseous sarcomas	Both	6,987	7,139	4,429	4,833	4,423	4,952	32,763	22,369	10,394	32
	Male	3,889	3,847	2,234	2,424	2,094	2,777	17,265	11,894	5,371	31
	Female	3,098	3,292	2,195	2,409	2,329	2,175	15,498	10,475	5,023	32
X Germ cell & trophoblastic tumors & neoplasms of gonads	Both	5,233	7,977	5,821	6,018	6,842	7,142	39,033	25,272	13,761	35
	Male	2,702	5,252	3,597	3,211	3,381	3,296	21,439	14,942	6,497	30
	Female	2,531	2,725	2,224	2,807	3,461	3,846	17,594	10,330	7,264	41

<sup>a</sup> International Classification of Childhood Cancer is based on ICD-O-3. Steliarova-Foucher E, Stiller C, Lacour B, Kaatsch P. International Classification of Childhood Cancer, Third Edition. Cancer. April 1, 2005; Vol 103, No. 7, pg 1457-1467.  
<sup>b</sup> Percent diagnosed before 1975 of all ages complete prevalence counts.  
<sup>c</sup> All sites females excludes breast cancer.  
<sup>d</sup> SEER site recode Acute Lymphocytic Leukemia was used instead of the ICCC classification lymphocytic leukemia (Ia) because of statistical modeling requirements.  
For more information regarding the modeling of the prevalence estimates, see Mariotto et al. Long-Term Survivors of Childhood Cancers in the United States. Cancer Epidemiol Biomarkers Prev 2009, page 1034.



Figure 29.1

## Childhood Cancer : SEER Incidence Rates 2008-2012 by ICCC Group (includes myelodysplastic syndromes and Group III benign brain) Under 20 Years of Age, Both Sexes, All Races



Source: 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).

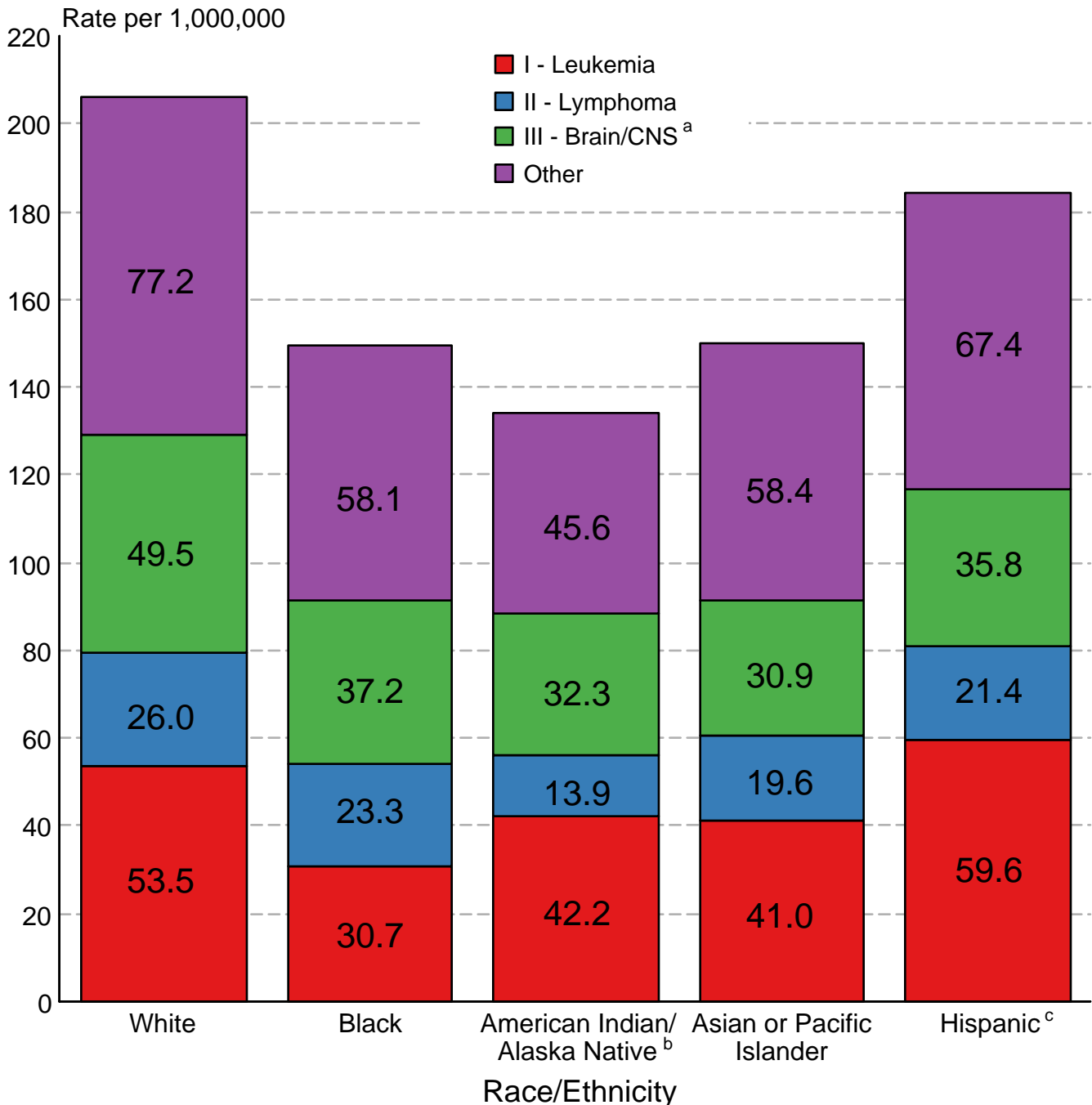
Rates are age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130).

International Classification of Childhood Cancer is based on ICD-O-3. Steliarova-Foucher E, Stiller C, Lacour B, Kaatsch P. International Classification of Childhood Cancer, Third Edition. Cancer. April 1, 2005; Vol 103, No. 7, pg 1457-1467.

<sup>a</sup> Rate for Group III (Brain/CNS) includes benign brain tumors.

Figure 29.2

## Childhood Cancer: SEER Incidence Rates 2008- 2012 by ICCC Group and Race/Ethnicity (includes myelodysplastic syndromes and Group III benign brain) Both Sexes, Under 20 Years of Age



Source: 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 rates are age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130).

International Classification of Childhood Cancer is based on ICD-O-3. Steliarova-Foucher E, Stiller C, Lacour B, Kaatsch P. International Classification of Childhood Cancer, Third Edition. Cancer. April 1, 2005; Vol 103, No. 7, pg 1457-1467.

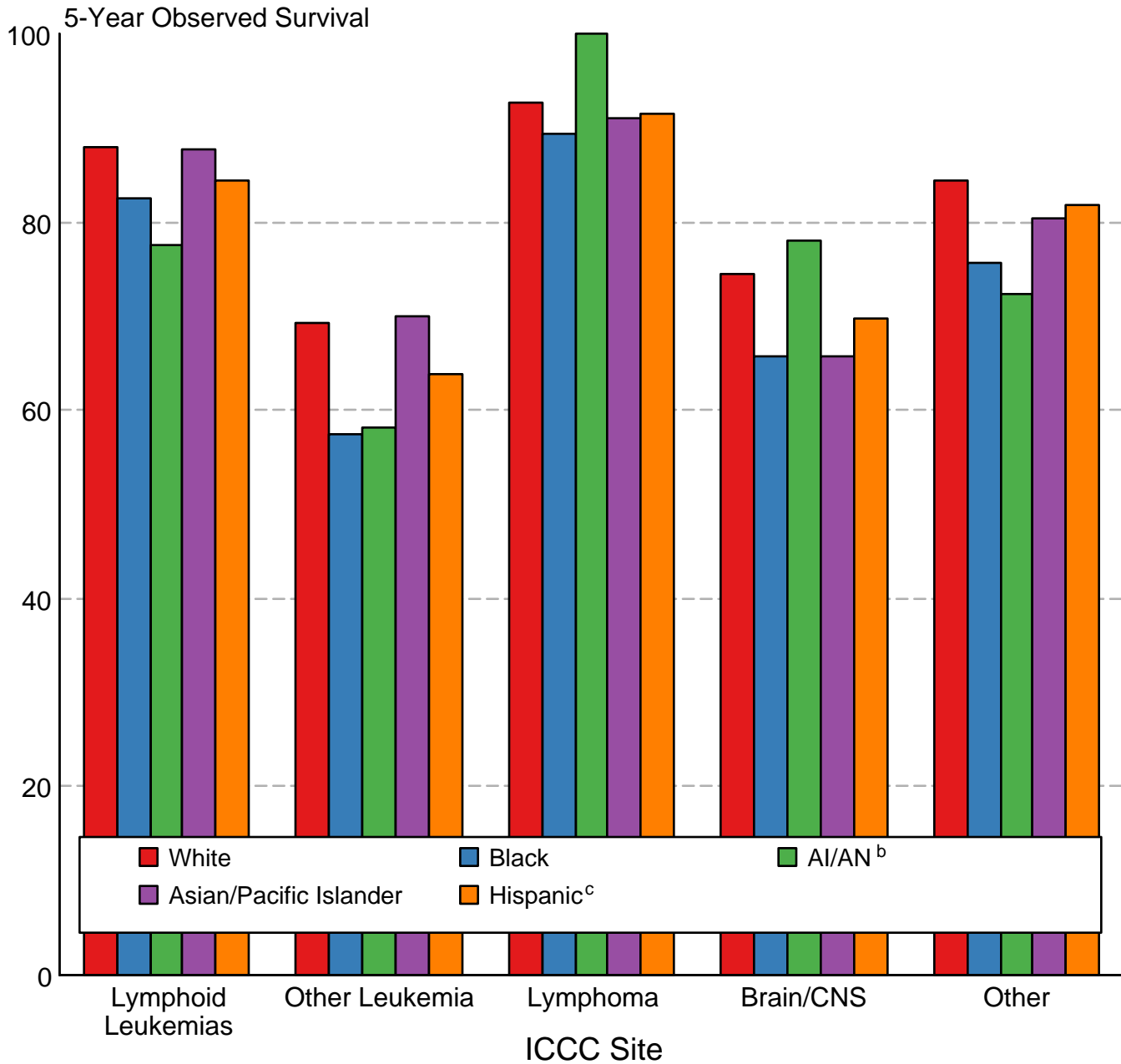
<sup>a</sup> Rate for Group III (Brain/CNS) includes benign brain tumors.

<sup>b</sup> Incidence rates for American Indian/Alaska Native are based on the CHSDA(Contract Health Service Delivery Area) counties.

<sup>c</sup> Hispanic is not mutually exclusive from whites, blacks, Asian/Pacific Islanders, and American Indians/Alaska Natives. Incidence data for Hispanics are based on NHIA and exclude cases from the Alaska Native Registry.

Figure 29.3

## Childhood Cancer 5-Year Observed Survival (%) by ICCC Group<sup>a</sup> and Race/Ethnicity Both Sexes, Under 20 Years of Age, 2005-2011



Source: 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).

International Classification of Childhood Cancer is based on ICD-O-3. Steliarova-Foucher E, Stiller C, Lacour B, Kaatsch P. International Classification of Childhood Cancer, Third Edition. Cancer. April 1, 2005; Vol 103, No. 7, pg 1457-1467.

<sup>a</sup> Excludes myelodysplastic syndromes (MDS) and benign brain tumors.

<sup>b</sup> American Indian/Alaska Native. Survival data for American Indian/Alaska Native are based on the CHSDA (Contract Health Service Delivery Area) counties.

<sup>c</sup> Hispanic is not mutually exclusive from whites, blacks, Asian/Pacific Islanders, and American Indians/Alaska Natives. Survival data for Hispanics are based on NHIA and excludes cases from the Alaska Native Registry.