

Table 2.1

Age-Adjusted and Age-Specific SEER Cancer Incidence Rates, 2014-2018<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	177.6	196.2	265.0	227.1	137.1	163.7	251.7
Including Group III benign brain/CNS tumors <sup>d</sup>	194.4	219.3	277.9	237.8	153.0	186.9	293.4
I Leukemia (includes myelodysplastic syndromes)	54.7	50.2	51.4	92.9	44.5	36.4	37.0
I(a) Lymphoid leukemia	41.9	36.2	18.4	78.1	37.0	23.7	19.5
I(b) Acute myeloid leukemia	8.3	8.7	20.1	10.9	4.3	8.1	9.9
I(c) Chronic myeloproliferative diseases	1.7	2.6	3.2	1.1	1.4	2.3	5.0
I(d) Myelodysplastic syndrome and other myeloproliferative	1.6	1.6	7.5	1.5	0.9	1.3	1.6
I(e) Unspecified and other specified leukemias	1.1	1.1	2.2	1.3	0.9	1.1	1.0
II Lymphomas and reticuloendothelial neoplasms	24.2	32.5	23.0	17.9	21.6	31.8	57.2
II(a) Hodgkin lymphoma	5.8	12.7	-	0.7	3.5	13.0	33.3
II(b) Non-Hodgkin lymphoma (except Burkitt lymphoma)	9.0	11.5	-	6.1	9.4	12.2	18.7
II(c) Burkitt lymphoma	2.6	2.6	-	1.9	3.5	2.8	2.5
II(d) Miscellaneous lymphoreticular neoplasms	6.5	5.3	21.3	8.9	5.0	3.5	1.7
II(e) Unspecified lymphomas	0.2	0.4	-	-	-	-	1.0
III CNS and misc intracranial and intraspinal neoplasms <sup>d</sup>	51.6	54.8	45.5	53.9	50.3	52.3	64.3
III(a) Ependymomas and choroid plexus tumor	4.6	4.3	10.5	6.8	3.1	3.4	3.3
III(b) Astrocytoma	18.4	17.2	13.0	22.8	18.0	16.5	13.5
III(c) Intracranial and intraspinal embryonal tumors	7.2	6.0	11.5	10.0	7.5	4.0	2.3
III(d) Other gliomas	6.7	6.3	2.5	5.8	7.7	7.2	5.1
III(e) Other specified intracranial/intraspinal neoplasms	12.6	19.0	5.1	7.0	12.3	18.5	38.0
III(f) Unspecified intracranial and intraspinal neoplasms	2.0	2.0	2.8	1.4	1.6	2.7	2.1
IV Neuroblastoma and other peripheral nervous cell tumor	10.7	8.3	56.1	20.6	4.2	1.1	1.1
IV(a) Neuroblastoma and ganglioneuroblastoma	10.5	8.1	55.9	20.5	4.0	0.9	0.6
IV(b) Other peripheral nervous cell tumors	0.2	0.2	-	-	-	-	0.4
V Retinoblastoma	4.2	3.1	31.5	7.9	-	-	-
VI Renal tumors	8.9	7.1	16.5	19.2	6.6	2.0	1.8
VI(a) Nephroblastoma and other nonepithelial renal tumor	8.4	6.4	16.4	19.1	6.3	1.0	-
VI(b) Renal carcinoma	0.5	0.7	-	-	-	1.0	1.5
VI(c) Unspecified malignant renal tumors	-	-	-	-	-	-	-

- <sup>a</sup> SEER 21 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, Georgia excluding ATL/RG, Idaho, New York and Massachusetts).
- <sup>b</sup> International Classification of Childhood Cancer is based on ICD-O-3. International Classification of Childhood Cancer is based on ICD-O-3. Steliarova-Foucher E, Colombet M, Ries LAG, Moreno F, Dolya A, Shin HY, Hesselning P, Stiller CA. International Incidence of Childhood Cancer, Volume III. Lyon: International Agency for Research on Cancer, In press.
- <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, 2014-2018<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	3.3	2.9	14.6	6.3	1.1	1.1	1.7
VII(a) Hepatoblastoma	2.9	2.2	14.4	6.2	0.8	0.4	-
VII(b) Hepatic carcinoma	0.4	0.7	-	-	-	0.7	1.5
VII(c) Unspecified malignant hepatic tumors	-	-	-	-	-	-	-
VIII Malignant bone tumors	8.2	9.9	-	1.8	6.8	15.9	14.7
VIII(a) Osteosarcoma	4.7	5.7	-	-	3.3	10.1	8.7
VIII(b) Chondrosarcoma	0.3	0.4	-	-	-	0.6	0.8
VIII(c) Ewing tumor and related sarcomas of bone	2.8	3.1	-	1.1	2.8	4.4	3.9
VIII(d) Other specified malignant bone tumors	0.4	0.5	-	-	-	0.6	0.9
VIII(e) Unspecified malignant bone tumors	-	0.2	-	-	-	-	-
IX Soft tissue and other extraosseous sarcomas	11.0	12.6	14.3	10.7	8.6	13.0	17.4
IX(a) Rhabdomyosarcoma	4.9	4.5	4.0	7.7	4.0	3.8	3.5
IX(b) Fibrosarcoma, peripheral nerve & other fibrous	1.0	1.3	4.3	0.5	0.7	1.1	2.0
IX(c) Kaposi sarcoma	-	-	-	-	-	-	-
IX(d) Other specified soft tissue sarcomas	3.7	5.2	3.9	1.9	2.9	6.0	9.4
IX(e) Unspecified soft-tissue sarcomas	1.3	1.6	-	0.6	1.1	2.0	2.3
X Germ cell & trophoblastic tumors & neoplasms of gonads	6.1	11.8	19.7	3.6	2.9	8.6	28.7
X(a) Intracranial and intraspinal germ-cell tumors	1.6	1.9	-	-	1.3	2.9	2.7
X(b) Extracranial & extragonadal germ cell tumors	1.5	1.4	14.0	1.6	-	-	1.4
X(c) Malignant gonadal germ cell tumors	2.8	7.6	3.6	1.5	1.4	4.9	22.1
X(d) Gonadal carcinomas	-	0.5	-	-	-	-	1.6
X(e) Other and unspecified malignant gonadal tumors	-	0.3	-	-	-	-	0.9
XI Other malignant epithelial neoplasms and melanomas <sup>d</sup>	10.8	25.3	2.5	2.1	5.7	24.0	68.5
XI(a) Adrenocortical carcinoma	0.2	0.2	-	-	-	-	-
XI(b) Thyroid carcinoma	4.2	12.0	-	-	1.7	10.6	35.2
XI(c) Nasopharyngeal carcinoma	0.2	0.4	-	-	-	0.5	1.1
XI(d) Malignant melanoma	2.0	3.7	-	1.3	1.6	3.0	8.9
XI(e) Skin carcinoma	-	0.2	-	-	-	-	0.4
XI(f) Other and unspecified carcinomas <sup>d</sup>	4.1	8.7	-	-	2.1	9.7	22.5
XII Other and unspecified malignant neoplasms	0.8	0.8	2.2	1.1	-	0.7	1.0
XII(a) Other specified malignant tumors	0.6	0.6	-	1.1	-	-	0.6
XII(b) Other unspecified malignant tumors	0.2	0.2	-	-	-	-	0.4

<sup>a</sup> Not classified by ICC  
 SEER 21 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, Georgia excluding ATL/RG, Idaho, New York and Massachusetts).

<sup>b</sup> International Classification of Childhood Cancer is based on ICD-O-3. International Classification of Childhood Cancer is based on ICD-O-3. Steliarova-Foucher E, Colombet M, Ries LAG, Moreno F, Dolya A, Shin HY, Hesselting P, Stiller CA. International Incidence of Childhood Cancer, Volume III. Lyon: International Agency for Research on Cancer, In press.

<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 2.2

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>1975-2018</u>	<u>1975-1986</u>	<u>1987-1996</u>	<u>1997-2008</u>	<u>2009-2018</u>
All ICCC Groups Combined	165.8	146.4	159.3	168.1	189.4
I Leukemia	40.8	35.5	38.2	42.8	46.3
I(a) Lymphoid leukemia	29.9	26.1	28.6	31.4	33.2
I(b) Acute myeloid leukemia	7.4	6.2	6.9	8.0	8.2
II Lymphomas and reticuloendothelial neoplasms	26.3	24.6	24.4	24.2	32.2
II(a) Hodgkin lymphoma	13.0	14.3	13.5	11.8	12.7
II(b,c,e) Non-Hodgkin lymphoma					
III CNS & misc intracranial & intraspinal neoplasms	28.9	24.1	29.9	29.7	31.8
III(a) Ependymomas and choroid plexus tumor	2.5	1.9	2.6	2.5	3.1
III(b) Astrocytoma	14.6	12.1	15.7	14.7	16.2
III(c) Intracranial and intraspinal embryonal tumors	5.6	4.5	5.7	6.2	6.1
III(d) Other gliomas	5.3	4.6	5.1	5.6	5.7
IV Neuroblastoma and other peripheral nervous cell tumors	8.6	8.2	8.5	8.7	8.9
IV(a) Neuroblastoma and ganglioneuroblastoma	8.3	8.0	8.2	8.5	8.6
V Retinoblastoma	3.1	2.8	3.2	3.2	3.1
VI Renal tumors	6.7	6.5	6.8	6.7	6.7
VI(a) Nephroblastoma and other nonepithelial renal tumor	6.1	6.2	6.4	6.0	6.0
VII Hepatic tumors	2.2	1.4	1.8	2.5	2.9
VII(a) Hepatoblastoma	1.6	0.9	1.4	1.8	2.2
VIII Malignant bone tumors	8.7	8.4	8.8	8.6	9.2
VIII(a) Osteosarcoma	4.8	4.3	4.9	4.7	5.4
VIII(c) Ewing tumor and related sarcomas of bone	3.0	3.2	2.8	2.9	3.0
IX Soft tissue and other extraosseous sarcomas	11.6	10.7	10.9	12.4	12.1
IX(a) Rhabdomyosarcoma	4.4	4.2	4.7	4.6	4.1
X Germ cell & trophoblastic tumors & neoplasms of gonads	10.7	9.4	10.8	11.0	11.5
X(a) Intracranial and intraspinal germ-cell tumor	1.5	1.0	1.6	1.7	1.9
X(c) Malignant gonadal germ cell tumor	6.8	6.0	6.7	7.2	7.1
XI Other malignant epithelial neoplasms and melanomas <sup>d</sup>	17.6	14.0	15.2	17.4	23.8
XI(b) Thyroid carcinoma	6.9	5.0	5.2	6.4	11.0
XI(d) Malignant melanoma	5.0	4.2	5.3	6.0	4.7

- <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).
- <sup>b</sup> International Classification of Childhood Cancer is based on ICD-O-3. Steliarova-Foucher E, Colombet M, Ries LAG, Moreno F, Dolya A, Shin HY, Hesselting P, Stiller CA. International Incidence of Childhood Cancer, Volume III. Lyon: International Agency for Research on Cancer, In press.
- <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> Includes *in situ* urinary bladder tumors.
- Statistic could not be calculated. Rate based on less than 16 cases for the time interval.

Table 2.3

Age-Adjusted SEER Cancer Incidence Trends, 1975-2018<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 1975-2018	APC 1975-2018	APC 1975-1996	APC 1997-2018	% Change 1975-2018	APC 1975-2018	APC 1975-1996	APC 1997-2018
All ICCG Groups Combined	46.3	0.8*	0.8*	0.9*	43.4	0.8*	0.8*	1.0*
I Leukemia	48.0	0.8*	0.8*	0.7*	45.3	0.8*	0.7*	0.8*
I(a) Lymphoid leukemia	68.1	0.7*	0.9*	0.4	65.8	0.7*	0.9*	0.5*
I(b) Acute myeloid leukemia	24.4	1.0*	1.6*	0.5	16.4	0.9*	1.4*	0.4
II Lymphomas and reticuloendothelial neo.	44.4	1.2*	-0.9*	3.3* <sup>#</sup>	28.3	0.7*	-0.1	2.2* <sup>#</sup>
II(a) Hodgkin lymphoma	-8.4	-0.5*	-1.5*	0.3 <sup>#</sup>	-11.7	-0.5*	-0.6	0.3 <sup>@</sup>
II(b,c,e) Non-Hodgkin lymphoma								
III CNS & misc intracranial & intraspinal neo.	69.2	0.7*	1.9*	0.3 <sup>#</sup>	63.5	0.7*	1.7*	0.5 <sup>#</sup>
III(a) Ependymomas and choroid plexus tumors	195.4	1.0*	2.3*	1.7*	185.5	1.1*	2.2*	1.8*
III(b) Astrocytoma	62.0	0.8*	2.5*	0.3 <sup>#</sup>	57.4	0.7*	2.1*	0.7 <sup>#</sup>
III(c) Intracranial and intraspinal embryonal tum.	183.4	0.8*	1.8*	-0.3 <sup>#</sup>	184.6	0.8*	1.9*	-0.4 <sup>#</sup>
III(d) Other gliomas	20.7	0.5	0.1	0.3	27.5	0.7*	0.7	0.5
IV Neuroblastoma and other peripheral nervous cell tumors	17.7	0.3	0.5	0.3	20.7	0.3*	0.6	0.4
IV(a) Neuroblastoma and ganglioneuroblastoma	12.6	0.3	0.5	0.2	14.1	0.3	0.4	0.3
V Retinoblastoma	-3.9	0.2	1.2	-0.2	-3.9	0.2	1.2	-0.2
VI Renal tumors	30.2	0.0	0.5	-0.1	28.0	0.1	0.6	-0.1
VI(a) Nephroblastoma and other nonepithelial renal tumors	23.8	-0.1	0.5	-0.2	23.8	-0.1	0.5	-0.2
VII Hepatic tumors	270.1	2.1*	2.2	1.3	372.1	2.1*	2.0	1.2
VII(a) Hepatoblastoma	560.8	2.4*	3.4*	1.4	560.8	2.3*	3.3*	1.4
VIII Malignant bone tumors	48.6	0.3	0.6	0.8	11.0	0.2	0.7	0.1
VIII(a) Osteosarcoma	139.7	0.8*	1.5*	1.3	57.0	0.6*	1.4*	0.6
VIII(c) Ewing tum. and related sarcomas of bone	18.5	-0.2	-0.7	0.8	-3.8	-0.2	-0.1	-0.1
IX Soft tissue and other extrasosseous sarcomas	16.4	0.5*	0.6	0.2	18.8	0.5*	0.5	-0.2
IX(a) Rhabdomyosarcoma	-0.3	0.1	1.0	-0.2	-4.1	0.0	0.9	-0.6
X Germ cell & trophoblastic tum. & neo. of gonads	37.8	0.9*	1.8*	0.5	12.4	0.6*	1.4*	0.1 <sup>#</sup>
X(a) Intracranial and intraspinal germ-cell tum.	69.3	-	-	0.2	69.4	1.6*	4.5*	0.3 <sup>#</sup>
X(c) Malignant gonadal germ cell tumors	18.5	0.1	-0.8	0.6	31.3	0.6*	1.2*	-0.2 <sup>#</sup>
XI Other malignant epithelial neo. and melanomas <sup>d</sup>	71.2	1.8*	0.4	3.0* <sup>#</sup>	111.6	1.6*	0.8*	2.8* <sup>#</sup>
XI(b) Thyroid carcinoma	119.0	1.8*	0.0	3.8* <sup>#</sup>	223.1	2.5*	0.7	4.3* <sup>#</sup>
XI(d) Malignant melanoma	31.4	1.4*	1.2	0.1	30.4	0.5	1.8*	-1.4 <sup>#</sup>

<sup>a</sup> The APC is the Annual Percent Change over the time interval.

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

<sup>c</sup> International Classification of Childhood Cancer is based on ICD-O-3. International Classification of Childhood Cancer is based on ICD-O-3. Steliarova-Foucher E, Colombet M, Ries LAG, Moreno F, Dolya A, Shin HY, Hesselning P, Stiller CA.

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

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

# The APC for 1997-2018 is significantly different from the APC for 1975-1996 (p<.05).

@ The APC for 1997-2018 is significantly different from the APC for 1975-1996 (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 2.4

Age-Adjusted SEER Cancer Incidence Trends, 1975-2018<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 1975-2018	APC 1975-2018	APC 1975-1996	APC 1997-2018	% Change 1975-2018	APC 1975-2018	APC 1975-1996	APC 1997-2018
All ICCG Groups Combined	46.8	0.8*	1.0*	0.9*	44.9	0.8*	1.0*	0.9*
I Leukemia	40.0	0.8*	0.9*	0.7*	38.9	0.8*	0.7*	0.8*
I(a) Lymphoid leukemia	57.9	0.7*	1.2*	0.4	61.0	0.7*	1.1*	0.5
I(b) Acute myeloid leukemia	46.5	1.2*	1.9*	0.5	29.7	1.0*	1.1	0.2
II Lymphomas and reticuloendothelial neo.	45.4	1.1*	-1.1*	3.4* <sup>#</sup>	25.6	0.8*	-0.3	2.5* <sup>#</sup>
II(a) Hodgkin lymphoma	5.1	-0.6	-1.8	0.7 <sup>#</sup>	-25.2	-0.5*	-0.9	0.6 <sup>#</sup>
II(b,c,e) Non-Hodgkin lymphoma								
III CNS & misc intracranial & intraspinal neo.	97.8	0.7*	2.2*	0.2 <sup>#</sup>	77.7	0.6*	2.0*	0.3 <sup>#</sup>
III(a) Ependymomas and choroid plexus tumors	305.4	0.8	2.0	2.1*	305.4	0.8*	2.0	2.0*
III(b) Astrocytoma	88.2	0.6*	2.7*	0.3 <sup>#</sup>	71.3	0.5*	2.1*	0.6 <sup>#</sup>
III(c) Intracranial and intraspinal embryonal tum.	333.0	0.6	2.0*	-0.6 <sup>#</sup>	299.0	0.6*	2.1*	-0.8 <sup>#</sup>
III(d) Other gliomas	21.2	0.6	0.7	0.0	20.4	0.7*	1.4	0.4
IV Neuroblastoma and other peripheral nervous cell tumors	11.7	0.3	1.1	0.6	14.8	0.3	1.3	0.7
IV(a) Neuroblastoma and ganglioneuroblastoma	8.0	0.3	1.1	0.5	11.2	0.3	1.1	0.6
V Retinoblastoma	13.5	0.4	1.8	-0.2	13.5	0.4	1.9	-0.2
VI Renal tumors	50.2	-0.1	1.1	-0.2	40.8	0.0	1.0	-0.3
VI(a) Nephroblastoma and other nonepithelial renal tumors	57.6	-0.2	1.2	-0.4	57.6	-0.2	1.1	-0.3
VII Hepatic tumors	63.8	2.0*	3.7*	0.7	200.7	2.0*	3.5*	0.7
VII(a) Hepatoblastoma	145.8	2.2*	4.3*	0.8 <sup>@</sup>	145.8	2.2*	4.6*	1.0 <sup>#</sup>
VIII Malignant bone tumors	19.5	0.5	1.2	0.3	16.9	0.4	1.5*	-0.1
VIII(a) Osteosarcoma	139.5	0.9*	1.7	0.9	140.8	0.7*	2.2*	0.4
VIII(c) Ewing tum. and related sarcomas of bone	-7.3	0.0	0.1	-0.5	-28.5	0.0	0.3	-0.6
IX Soft tissue and other extrasosseous sarcomas	28.2	0.7*	0.7	0.6	32.8	0.7*	0.6	0.2
IX(a) Rhabdomyosarcoma	12.0	0.1	1.3	0.1	10.4	0.0	0.9	-0.2
X Germ cell & trophoblastic tum. & neo. of gonads	3.1	0.6	1.9	-0.6	46.0	0.8*	1.7*	-0.1 <sup>#</sup>
X(a) Intracranial and intraspinal germ-cell tum.	15.9	-	-	-0.9	37.1	1.6*	4.7*	0.1 <sup>#</sup>
X(c) Malignant gonadal germ cell tum. (testis)	-34.5	-0.5	-1.0	-1.1	49.9	0.7*	1.0	-0.3
XI Other malignant epithelial neo. and melanomas <sup>d</sup>	70.3	1.7*	0.4	3.0* <sup>#</sup>	121.3	1.6*	0.9	2.6* <sup>#</sup>
XI(b) Thyroid carcinoma	446.7	-	-	5.6*	344.5	2.6*	-1.1	5.5* <sup>#</sup>
XI(d) Malignant melanoma	-53.5	1.3*	0.3	0.8	-17.0	0.5	2.1	-1.4 <sup>#</sup>

<sup>a</sup> The APC is the Annual Percent Change over the time interval.

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

<sup>c</sup> International Classification of Childhood Cancer is based on ICD-O-3. International Classification of Childhood Cancer is based on ICD-O-3. Steliarova-Foucher E, Colombet M, Ries LAG, Moreno F, Dolya A, Shin HY, Hesselning P, Stiller CA.

International Incidence of Childhood Cancer, Volume III. Lyon: International Agency for Research on Cancer, In press.

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

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

<sup>#</sup> The APC for 1997-2018 is significantly different from the APC for 1975-1996 (p<.05).

<sup>@</sup> The APC for 1997-2018 is significantly different from the APC for 1975-1996 (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 2.5

Age-Adjusted SEER Cancer Incidence Trends, 1975-2018<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 1975-2018	APC 1975-2018	APC 1975-1996	APC 1997-2018	% Change 1975-2018	APC 1975-2018	APC 1975-1996	APC 1997-2018
All ICCG Groups Combined	45.6	0.8*	0.6*	0.9*	41.6	0.8*	0.6*	1.0*
I Leukemia	60.7	0.7*	0.6	0.6*	55.1	0.9*	0.7	0.7*
I(a) Lymphoid leukemia	82.9	0.7*	0.6	0.5	72.9	0.8*	0.6	0.5
I(b) Acute myeloid leukemia	-3.6	0.6*	1.3	0.6	-1.5	0.8*	1.7*	0.6
II Lymphomas and reticuloendothelial neo.	42.3	1.4*	-0.7	3.1* <sup>#</sup>	32.2	0.6*	0.1	1.8* <sup>#</sup>
II(a) Hodgkin lymphoma	-25.4	-0.5	-1.2	-0.1	4.7	-0.5*	-0.4	0.0
II(b,c,e) Non-Hodgkin lymphoma								
III CNS & misc intracranial & intraspinal neo.	42.6	0.8*	1.5*	0.4	48.3	0.8*	1.4*	0.7
III(a) Ependymomas and choroid plexus tumors	45.4	1.1*	1.7	1.4	58.5	1.2*	1.4	1.7*
III(b) Astrocytoma	36.8	1.0*	2.3*	0.3 <sup>@</sup>	41.7	0.8*	2.0*	0.8
III(c) Intracranial and intraspinal embryonal tum.	101.5	0.9*	1.4	0.4	111.0	1.0*	1.7*	0.2
III(d) Other gliomas	20.3	0.5	-0.9	0.7	34.9	0.7	-0.3	0.7
IV Neuroblastoma and other peripheral nervous cell tumors	22.7	0.3	-0.2	-0.1	25.8	0.3	-0.4	0.0
IV(a) Neuroblastoma and ganglioneuroblastoma	16.6	0.3	-0.3	-0.1	16.6	0.2	-0.4	-0.1
V Retinoblastoma	-27.5	0.0	0.3	-0.5	-27.5	0.0	0.3	-0.5
VI Renal tumors	7.1	0.0	0.0	0.1	12.5	0.1	0.4	0.2
VI(a) Nephroblastoma and other nonepithelial renal tumors	-10.8	0.0	-0.1	0.1	-10.8	-0.1	0.0	0.1
VII Hepatic tumors	875.1	2.2*	0.2	2.0	875.1	2.0*	0.1	1.6
VII(a) Hepatoblastoma	-	-	-	1.8	-	-	-	1.8
VIII Malignant bone tumors	90.1	0.1	0.2	1.2	3.7	-0.1	-0.4	0.4
VIII(a) Osteosarcoma	139.9	0.7	1.2	1.6	1.9	0.3	0.2	1.0
VIII(c) Ewing tum. and related sarcomas of bone	55.2	-	-1.6	-	64.0	-0.5	-0.7	0.4
IX Soft tissue and other extrasosseous sarcomas	3.2	0.2	0.6	-0.4	3.0	0.3	0.4	-0.8
IX(a) Rhabdomyosarcoma	-14.2	-0.1	0.4	-0.5	-21.5	-0.1	0.8	-1.1
X Germ cell & trophoblastic tum. & neo. of gonads	73.1	1.0*	1.6	1.3	-15.4	0.2	0.9	0.6
X(a) Intracranial and intraspinal germ-cell tum.	299.8	-	-	1.7	299.8	-	-	1.0
X(c) Malignant gonadal germ cell tum. (ovary)	63.1	0.5	-0.6	1.6	10.7	0.1	1.3	0.2
XI Other malignant epithelial neo. and melanomas <sup>d</sup>	72.0	1.8*	0.5	2.9* <sup>#</sup>	106.9	1.7*	0.8	2.9* <sup>#</sup>
XI(b) Thyroid carcinoma	37.1	1.6*	0.0	3.0* <sup>@</sup>	186.9	2.4*	1.2	4.0* <sup>#</sup>
XI(d) Malignant melanoma	144.7	-	-	-0.2	82.7	0.5	1.6	-1.5 <sup>#</sup>

- <sup>a</sup> The APC is the Annual Percent Change over the time interval.  
 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. International Classification of Childhood Cancer is based on ICD-O-3. Steliarova-Foucher E, Colombet M, Ries LAG, Moreno F, Dolya A, Shin HY, Hesselning P, Stiller CA. International Incidence of Childhood Cancer, Volume III. Lyon: International Agency for Research on Cancer, In press.
- <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 1997-2018 is significantly different from the APC for 1975-1996 (p<.05).
- @ The APC for 1997-2018 is significantly different from the APC for 1975-1996 (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 2.6

5-Year Relative Survival (Percent), 2011-2017<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	85.1	84.3	86.0	79.9	86.6	85.3	83.5	85.9	84.7
I Leukemia	85.1	84.5	85.9	62.7	91.6	90.7	81.3	75.2	87.4
I(a) Lymphoid leukemia	89.4	88.6	90.2	59.3	94.6	93.2	85.9	76.0	91.5
I(b) Acute myeloid leukemia	67.7	66.9	68.6	65.3	71.2	69.1	64.6	67.2	67.9
II Lymphomas and reticuloendothelial neo.	94.3	94.3	94.2	90.2	94.5	96.8	93.5	94.0	94.5
II(a) Hodgkin lymphoma	97.8	97.7	97.8	-	100.0	100.0	97.9	97.4	98.5
II(b,c,e) Non-Hodgkin lymphoma	89.9	90.9	87.9	-	89.6	94.8	88.5	88.7	90.7
III CNS & misc intracranial & intraspinal neo.	74.2	74.7	73.7	57.7	76.5	71.3	77.9	75.8	73.9
III(a) Ependymomas and choroid plexus tumor	82.9	82.8	83.0	69.0 <sup>d</sup>	82.7	82.4 <sup>d</sup>	86.0 <sup>d</sup>	89.1	81.7
III(b) Astrocytoma	80.3	80.9	79.7	69.1 <sup>d</sup>	90.7	78.8	80.1	73.6	82.4
III(c) Intracranial and intraspinal embryonal tumors	67.5	68.1	66.6	36.1 <sup>d</sup>	61.3	78.4	74.4	68.2 <sup>d</sup>	67.5
III(d) Other gliomas	61.0	62.9	58.7	-	56.2	42.0	71.5	81.4	55.6
IV Neuroblastoma and other peripheral nervous cell tumors	81.7	81.2	82.2	91.2	76.7	79.5	93.2	65.9 <sup>d</sup>	82.2
IV(a) Neuroblastoma and ganglioneuroblastoma	81.6	81.2	82.0	91.2	76.7	79.5	93.6	-	82.1
V Retinoblastoma	95.9	94.5	97.1	97.4	94.1	-	-	-	95.9
VI Renal tumors	91.4	89.8	92.7	87.3	94.0	92.4	84.6	79.6	92.3
VI(a) Nephroblastoma and other nonepithelial renal tumor	93.2	92.7	93.5	87.1	94.3	93.9	89.8 <sup>d</sup>	-	93.2
VII Hepatic tumors	77.6	77.0	78.1	85.7	79.6	80.4 <sup>d</sup>	67.1 <sup>d</sup>	56.0 <sup>d</sup>	79.8
VII(a) Hepatoblastoma	82.4	81.7	83.2	85.7	79.6	91.9 <sup>d</sup>	-	-	82.1
VIII Malignant bone tumors	71.1	70.1	72.4	-	84.3 <sup>d</sup>	77.5	69.5	68.4	72.8
VIII(a) Osteosarcoma	68.1	65.4	71.6	-	-	75.4	64.8	68.4	67.8
VIII(c) Ewing tumor and related sarcomas of bone	70.3	72.2	67.4	-	90.1 <sup>d</sup>	76.5 <sup>d</sup>	73.1	59.4	76.3
IX Soft tissue and other extraosseous sarcomas	73.7	71.3	76.7	75.3	74.5	80.0	73.3	70.6	75.4
IX(a) Rhabdomyosarcoma	66.0	66.2	65.6	81.3 <sup>d</sup>	69.4	78.5	58.2	50.1 <sup>d</sup>	69.8
X Germ cell & trophoblastic tumors & neo. of gonads	92.0	92.7	90.8	84.9	89.0	96.9	89.6	93.2	89.5
X(a) Intracranial and intraspinal germ-cell tumor	89.4	90.1	87.4	-	-	95.8	89.8	92.4	87.7
X(c) Malignant gonadal germ cell tumor	96.0	96.2	95.5	92.4 <sup>d</sup>	100.0	100.0	94.2	95.9	95.9
XI Other malignant epithelial neo. and melanomas <sup>f</sup>	94.4	91.7	95.6	-	88.2	95.8	95.1	94.3	94.8
XI(b) Thyroid carcinoma	99.8	99.7	99.8	-	-	100.0	99.4	99.9	99.5
XI(d) Malignant melanoma	94.9	93.7	95.7	-	89.7 <sup>d</sup>	98.6	95.0	94.7	95.5

<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). [Expected survival rates](#) are derived from life tables by socio-economic status, geography and race developed by the SEER program.

<sup>b</sup> Based on follow-up of patients into 2018.  
International Classification of Childhood Cancer is based on ICD-O-3. International Classification of Childhood Cancer is based on ICD-O-3. Steliarova-Foucher E, Colombet M, Ries LAG, Moreno F, Dolya A, Shin HY, Hesselting P, Stiller CA. International Incidence of Childhood Cancer, Volume III. Lyon: International Agency for Research on Cancer, In press.

<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 2.7  
 U.S. Childhood Cancer Survivors at January 1, 2018  
 Number of People Previously Diagnosed with Cancer as Children (Ages 0-19 Years) in the United States and Alive January 1, 2018  
 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 1992-2017	Diagnosed before 1992 Count	% <sup>b</sup>
All Sites	Both	129,438	109,940	87,134	72,029	50,019	34,479	483,039	294,469	188,570	39
	Male	69,706	57,472	39,284	25,384	18,154	15,022	225,022	155,179	69,843	31
	Female <sup>c</sup>	59,732	52,468	47,850	46,645	31,865	19,457	258,017	139,290	118,727	46
I Leukemia	Both	43,371	28,353	15,979	11,314	6,328	1,661	107,006	78,538	28,468	27
	Male	23,841	15,620	7,865	5,011	2,622	640	55,599	43,350	12,249	22
	Female	19,530	12,733	8,114	6,303	3,706	1,021	51,407	35,188	16,219	32
Acute lymphocytic leukemia <sup>d</sup>	Both	35,121	22,738	14,230	9,619	3,895	250	85,853	61,186	24,667	29
	Male	19,232	12,732	7,377	4,974	2,012	153	46,480	34,625	11,855	26
	Female	15,889	10,006	6,853	4,645	1,883	97	39,373	26,561	12,812	33
I(b) Acute myeloid leukemia	Both	5,075	3,400	2,264	1,856	1,367	888	14,850	9,878	4,972	33
	Male	2,705	1,730	1,103	825	663	438	7,464	5,158	2,306	31
	Female	2,370	1,670	1,161	1,031	704	450	7,386	4,720	2,666	36
II(a) Hodgkin lymphoma	Both	4,318	10,086	8,095	7,619	6,810	3,923	40,851	23,789	17,062	42
	Male	2,511	5,394	3,897	3,648	3,390	1,940	20,780	12,229	8,551	41
	Female	1,807	4,692	4,198	3,971	3,420	1,983	20,071	11,560	8,511	42
II(b,c,e) Non-Hodgkin lymphoma	Both	7,599	8,196	5,475	3,127	2,338	2,242	28,977	20,687	8,290	29
	Male	5,139	5,482	3,445	1,595	1,145	1,249	18,055	13,782	4,273	24
	Female	2,460	2,714	2,030	1,532	1,193	993	10,922	6,905	4,017	37
III CNS and misc intracranial & intraspinal neoplasms	Both	20,861	16,218	13,336	9,311	6,965	4,184	70,875	43,954	26,921	38
	Male	11,252	8,609	6,535	4,400	3,042	1,888	35,726	23,526	12,200	34
	Female	9,609	7,609	6,801	4,911	3,923	2,296	35,149	20,428	14,721	42
IV Neuroblastoma & other peripheral nervous cell tumor	Both	9,642	3,802	2,419	3,011	2,047	1,649	22,570	13,329	9,241	41
	Male	4,936	1,977	815	1,104	658	456	9,946	6,862	3,084	31
	Female	4,706	1,825	1,604	1,907	1,389	1,193	12,624	6,467	6,157	49
VI Renal tumors	Both	7,891	4,871	7,488	7,429	4,378	2,462	34,519	12,892	21,627	63
	Male	3,615	2,149	4,218	4,069	2,430	1,415	17,896	5,785	12,111	68
	Female	4,276	2,722	3,270	3,360	1,948	1,047	16,623	7,107	9,516	57
VIII Malignant bone tumors	Both	4,084	4,487	3,824	3,993	3,465	2,354	22,207	12,148	10,059	45
	Male	2,339	2,659	2,229	1,921	1,752	1,178	12,078	7,182	4,896	41
	Female	1,745	1,828	1,595	2,072	1,713	1,176	10,129	4,966	5,163	51
VIII(a) Osteosarcoma	Both	2,258	2,546	2,103	1,997	1,759	1,406	12,069	6,835	5,234	43
	Male	1,247	1,405	1,219	905	896	704	6,376	3,851	2,525	40
	Female	1,011	1,141	884	1,092	863	702	5,693	2,984	2,709	48
VIII(c) Ewing tumor & related sarcomas of bone	Both	1,451	1,386	1,044	830	756	536	6,003	3,790	2,213	37
	Male	870	898	640	436	376	202	3,422	2,370	1,052	31
	Female	581	488	404	394	380	334	2,581	1,420	1,161	45
IX Soft tissue & other extraosseous sarcomas	Both	7,456	6,786	5,520	4,813	5,885	9,840	40,300	18,253	22,047	55
	Male	4,256	3,550	2,698	2,011	3,237	6,265	22,017	9,835	12,182	55
	Female	3,200	3,236	2,822	2,802	2,648	3,575	18,283	8,418	9,865	54
X Germ cell & trophoblastic tumors & neoplasms of gonads	Both	5,392	9,465	7,980	7,249	7,621	11,592	49,299	22,663	26,636	54
	Male	2,802	6,134	4,784	4,170	4,221	5,632	27,743	14,055	13,688	49
	Female	2,590	3,331	3,196	3,079	3,400	5,960	21,556	8,608	12,948	60

<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 1992 of all ages complete prevalence counts.

<sup>c</sup> All sites females excludes breast cancer.

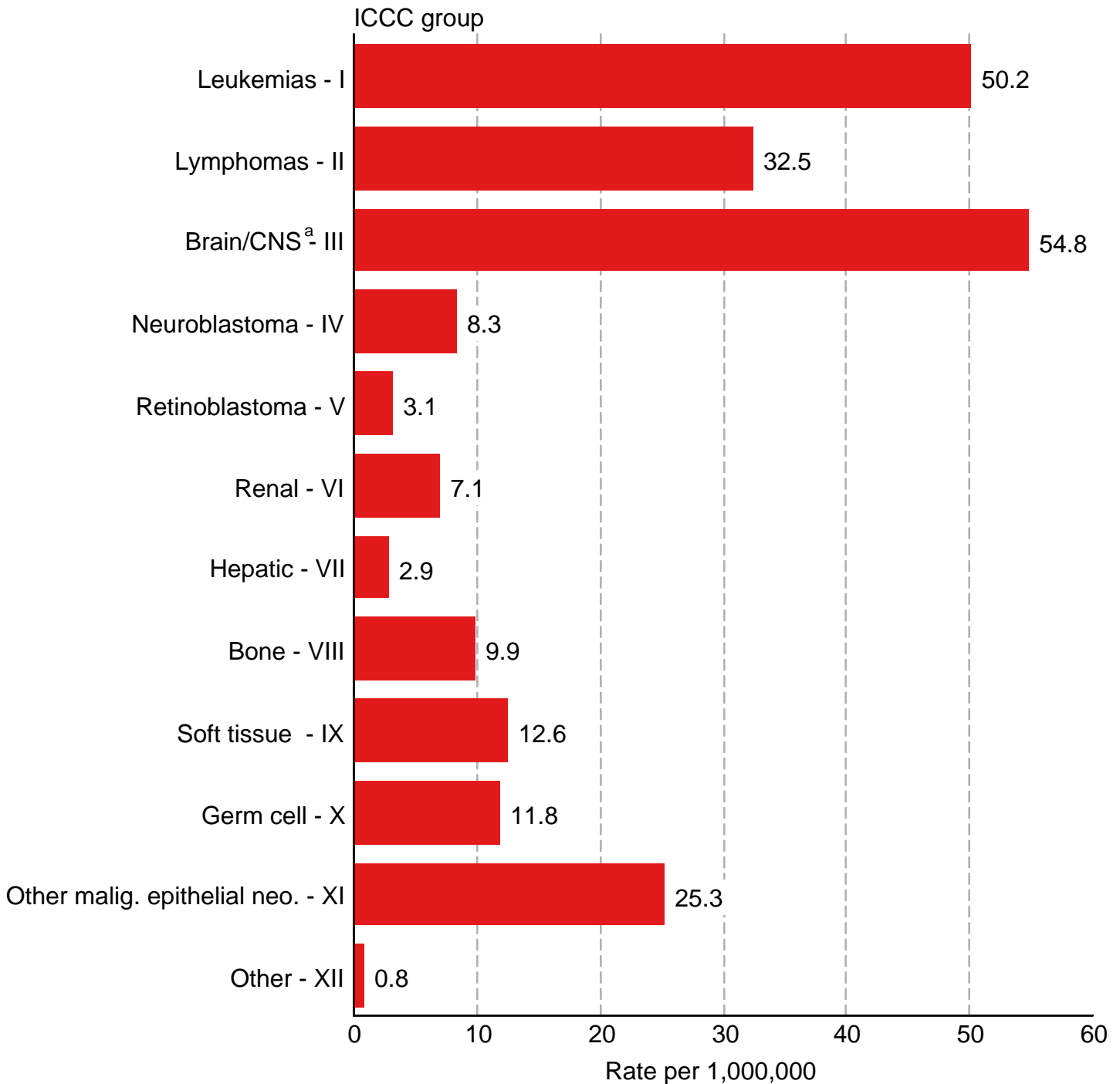
<sup>d</sup> SEER site recode Acute Lymphocytic Leukemia was used instead of the ICCC classification lymphocytic leukemia (Ia) because of statistical modeling requirements.

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 2.1

# Childhood Cancer : SEER Incidence Rates 2014-2018 by ICCC Group (includes myelodysplastic syndromes and Group III benign brain) Under 20 Years of Age, Both Sexes, All Races

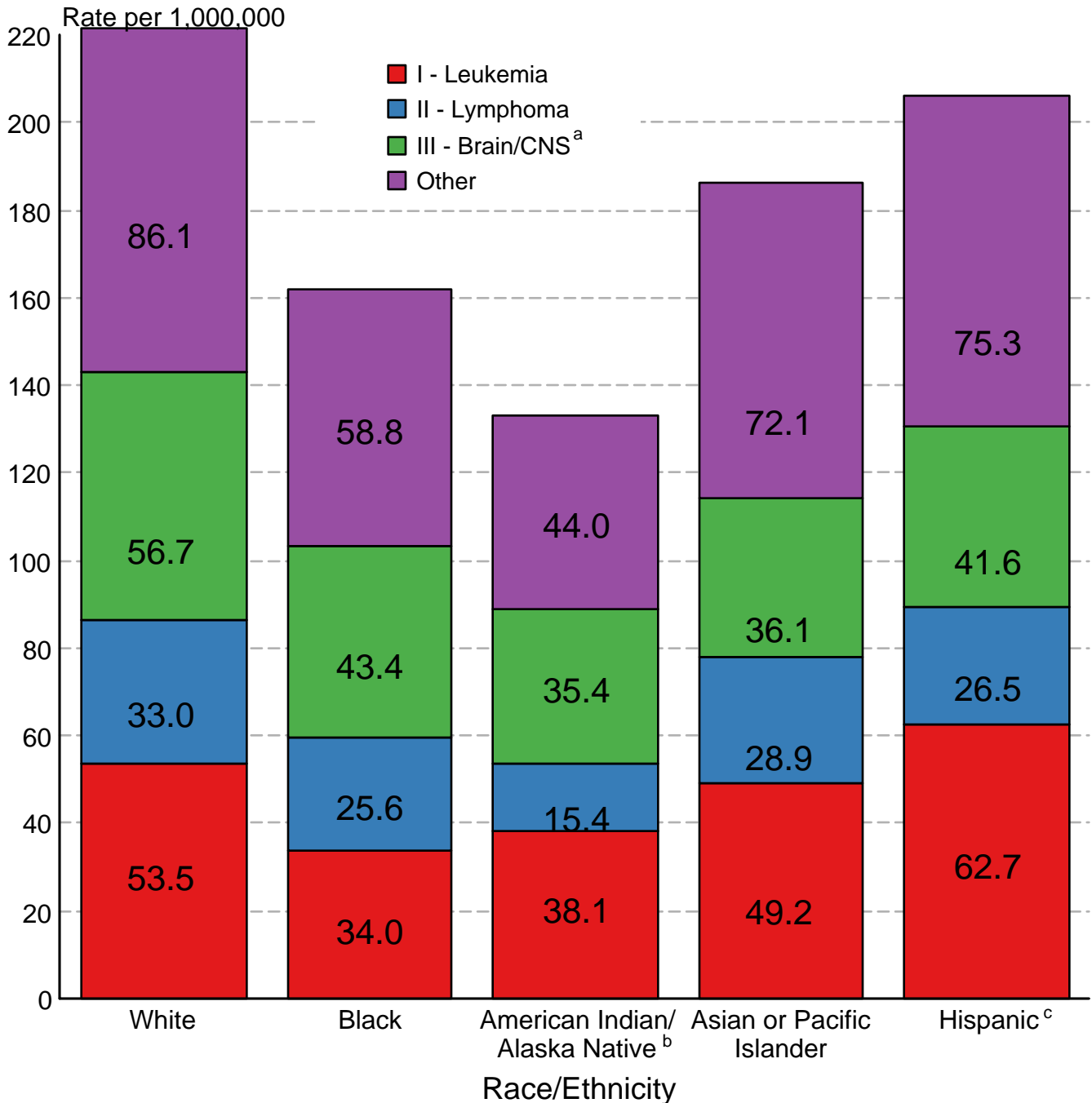


Source: SEER 21 areas (San Francisco, Connecticut, Detroit, Hawaii, Iowa, New Mexico, Seattle, Utah, Atlanta, San Jose-Monterey, Los Angeles, Alaska Native Registry, Rural Georgia, California excluding SF/SJM/LA, Kentucky, Louisiana, New Jersey, Georgia excluding ATL/RG, Idaho, New York and Massachusetts). 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 2.2

## Childhood Cancer: SEER Incidence Rates 2014- 2018 by ICCC Group and Race/Ethnicity (includes myelodysplastic syndromes and Group III benign brain) Both Sexes, Under 20 Years of Age



Source: SEER 21 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, Georgia excluding ATL/RG, Idaho, New York and Massachusetts).

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.

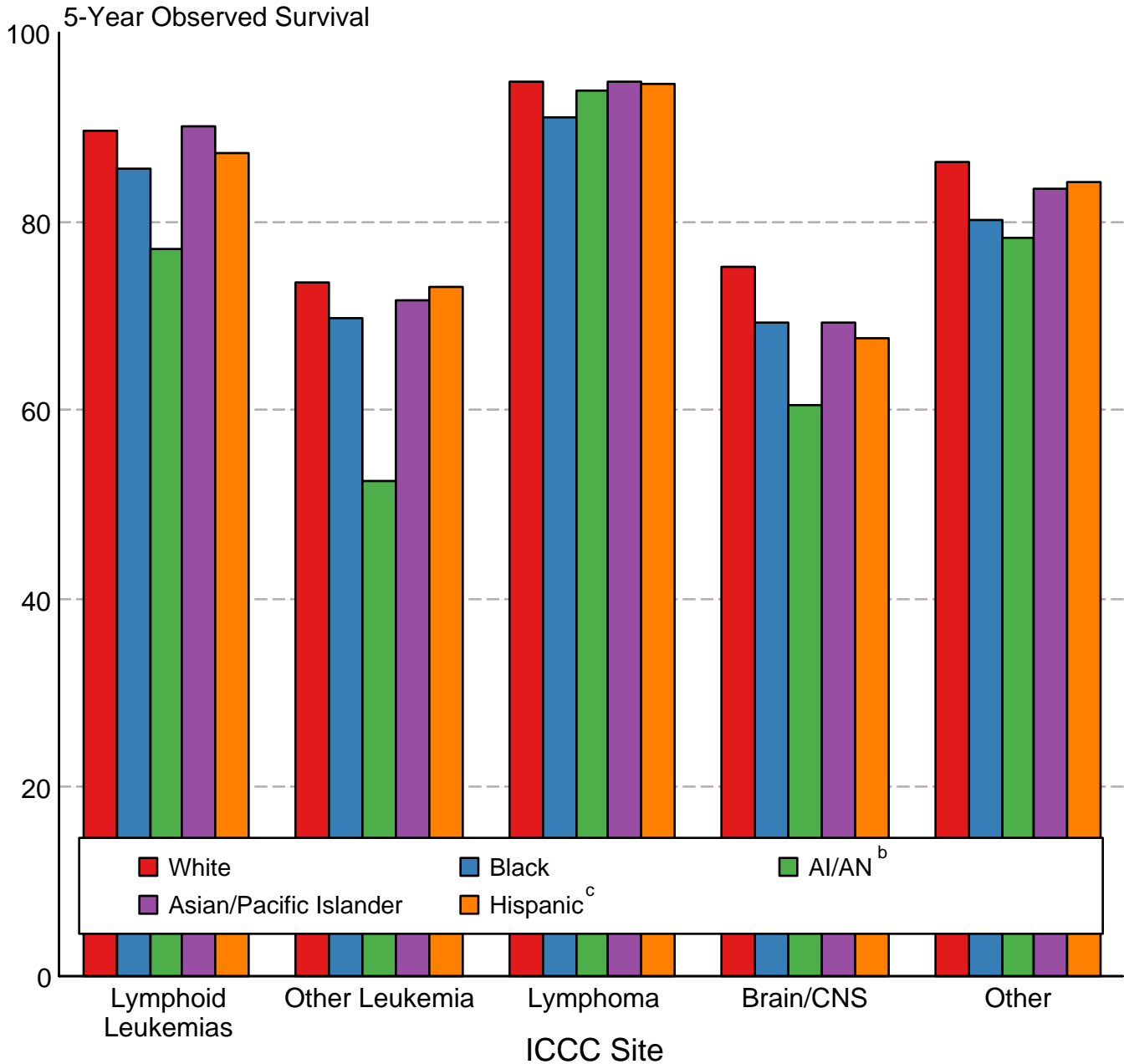
<sup>a</sup> Rate for Group III (Brain/CNS) includes benign brain tumors.

<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 2.3

## Childhood Cancer 5-Year Observed Survival (%) by ICCC Group<sup>a</sup> and Race/Ethnicity Both Sexes, Under 20 Years of Age, 2011-2017



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.