

PEDIATRIC CANCER IN IDAHO 1998-2007

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The Idaho Hospital Association (IHA) contracts with, and receives funding from, the Idaho Department of Health and Welfare, Division of Health, to provide a statewide cancer surveillance system: the Cancer Data Registry of Idaho (CDRI).

The statewide cancer registry database is a product of collaboration among many report sources, including hospitals, physicians, surgery centers, pathology laboratories, and other states in which Idaho residents are diagnosed and/or treated for cancer. Their cooperation in reporting timely, accurate, and complete cancer data is acknowledged and sincerely appreciated.

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CANCER DATA REGISTRY OF IDAHO

P.O. Box 1278

Boise, Idaho 83701-1278

208-338-5100 ext 213 (phone)

208-344-0180 (FAX)

<http://www.idcancer.org>



IDAHO DEPARTMENT OF
HEALTH & WELFARE

Pediatric Cancer in Idaho, 1998-2007

Although relatively rare in comparison with cancer in older adults, cancer is the second leading cause of death in persons aged 1-14 years. The epidemiology of cancer among children differs markedly from that of adults, both in the patterns of anatomic sites involved and the predominant histologic types. Most notably, the tumors diagnosed in children frequently involve the hematopoietic and central nervous systems or are of mesenchymal origin. In contrast, malignancies of epithelial tissues, which are predominant in adults, are uncommon in children. Similar to adult cancers, the etiology of many childhood cancers remains unclear.

The Cancer Data Registry of Idaho (CDRI) receives several requests per year from physicians and others for data on pediatric cancer incidence for the State of Idaho. This report describes the incidence of pediatric cancers in Idaho, with comparisons to data from the National Cancer Institute's Surveillance, Epidemiology, and End Results (SEER) Program and State Cancer Profiles.¹⁻² SEER currently collects and publishes cancer incidence and survival data from population-based cancer registries covering approximately 26 percent of the US population and is considered the standard for quality among cancer registries around the world. The National Cancer Institute's State Cancer Profiles includes data from SEER and the Centers for Disease Control and Prevention's National Program of Cancer Registries for states with high quality data. For the latest State Cancer Profiles (2006 incidence data), all states but Arizona and Wisconsin are included, representing about 96 percent of the U.S. population. State Cancer Profiles data are used in this report for pediatric cancer incidence rankings by state.

METHODS

The data analyzed for this report include cancers diagnosed between 1998 and 2007 among Idaho residents less than 20 years of age. Cases were grouped according to the International Classification of Childhood Cancer (ICCC) based on site and morphology coded according to ICD-O-3.³

A total of 825 cases were diagnosed among Idaho resident children under the age of 20 between 1998 and 2007. This number includes 774 malignant cancers and 51 benign and borderline behavior neoplasms. It was not possible to assign a group code of the ICCC system to 2 cases. Fifteen cases were in situ, which are not included in the ICCC system. Health District was assigned from county of residence at time of diagnosis. All rates presented were calculated per million population, and are averages for the period 1998 through 2007 (rates per million, rather than per 100,000, are commonly used for pediatric cancers). Age-adjustment was performed using the direct method to the 2000 U.S. standard population. Cancer incidence, mortality and survival statistics were calculated using SEER*Stat.⁴ State rankings were obtained via State Cancer Profiles.²

RESULTS

A total of 825 cases that met the study criteria were diagnosed among Idaho residents aged less than 20 years between 1998 and 2007, yielding an overall age-adjusted rate of 193.7 cases per million population. In comparison, the SEER rate for Whites was 194.6 cases per million population for 2004-2006. The distribution of pediatric cancers by ICCC grouping was very similar for Idaho and SEER Regions. Idaho's pediatric rate of astrocytomas was about 35% higher than the rate for SEER Whites, but the confidence intervals for the two rates overlapped. For no ICCC grouping did Idaho show a statistically significantly higher rate than SEER Regions based on the comparison of 95% confidence intervals.

For all races combined, Idaho ranked 6th highest among states in pediatric (ages 0-19) cancer incidence in 2006.² This result is partially related to differences in the distribution of race by state. Pediatric cancer incidence is higher among Whites, and Idaho has a higher proportion of White residents than many states. Among Whites, Idaho ranked 7th in pediatric cancer incidence.

About 80% of children aged less than 20 years diagnosed with malignant cancer survived at least 5 years after their diagnosis, both in Idaho and SEER Regions. For no ICCC major classification category, nor overall, was there a statistically significant difference in 5-year relative survival between Idaho and SEER cases.

Pediatric cancer incidence increased at a rate of about 0.9% per year in Idaho from 1970 to 2007. This parallels the long term increase observed in SEER Regions from 1973 to 2006 of about 0.7% per year.

Health District 2 had statistically significantly lower ($p < .05$) rates of ICCC major classification category I (Leukemias, myeloproliferative & myelodysplastic diseases) and all sites combined than the State of Idaho. Health District 5 had a statistically significantly higher ($p < .05$) rate of ICCC major classification category II (Lymphomas and reticuloendothelial neoplasms) than the State of Idaho. Health District 4 had a statistically significantly higher rate and Health District 6 had a statistically significantly lower rate of ICCC major classification category XI (other malignant epithelial neoplasms and melanomas) than the State of Idaho. This may indicate underreporting of melanomas and thyroid carcinomas from Health District 6. CDRI will be conducting a survey in 2010 to investigate underreporting of physician and pathology laboratory cases in Health Districts 6 and 7. For no other ICCC major classification category was there a statistically significant difference between any health district and the State of Idaho.

From 1998 to 2008, 136 of Idaho's children aged 0-19 died from some form of cancer.⁵ The leading types of cancer mortality were leukemia and brain and other central nervous system. While pediatric cancer incidence rates have increased over time, mortality rates have decreased. From 1975-2006, pediatric cancer mortality rates have decreased about 2% per year, in Idaho and the U.S. The annual rates plotted for Idaho demonstrate large year-to-year variability that is

expected due to the relatively small numbers of deaths per year. Idaho ranked 34th highest among states in pediatric (ages 0-19) cancer mortality 1998-2006.

CONCLUSIONS

These data demonstrate strong similarity in pediatric cancer incidence and survival patterns between Idaho and SEER Regions. Compared with cancer in adults, there is less geographic variability in pediatric cancer incidence. Nonetheless, Idaho ranks among the highest states in terms of pediatric cancer incidence.

Largely because of improvements in therapy for pediatric cancers, there has been a decrease in mortality rates over time. Data collected by CDRI for 2008 show that approximately 44% of pediatric patients participated in clinical trials at Idaho institutions. In addition, many pediatric cases are treated out-of-state, and may be enrolled in clinical trials through out-of-state treatment facilities. While this clinical trial participation rate is much higher than that for adults (<3%), there remains much room for improvement.

Based upon the results in this report, the Cancer Data Registry of Idaho will continue to monitor pediatric central nervous system cancer incidence statewide.

Pediatric Cancer Incidence in Idaho and SEER Regions (Ages 0-19)

Site/Type of Cancer	Idaho 1998-2007			SEER 2004-2006		
	Rate	Cases	Pop	Rate	Cases	Pop
All Sites Combined	193.7	825	4,225,528	194.6	4,909	25,061,061
I Leukemias, myeloproliferative & myelodysplastic diseases	44.9	191	4,225,528	50.2	1,270	25,061,061
I(a) Lymphoid leukemias	33.0	140	4,225,528	38.6	976	25,061,061
I(b) Acute myeloid leukemias	8.0	34	4,225,528	8.3	211	25,061,061
I(c) Chronic myeloproliferative diseases	1.9	8	4,225,528	0.9	22	25,061,061
I(d) Myelodysplastic syndrome and other myeloproliferative	0.9	4	4,225,528	1.3	32	25,061,061
I(e) Unspecified and other specified leukemias	1.1	5	4,225,528	1.2	29	25,061,061
II Lymphomas and reticuloendothelial neoplasms	23.7	101	4,225,528	23.4	584	25,061,061
II(a) Hodgkin lymphomas	14.0	60	4,225,528	11.6	288	25,061,061
II(b) Non-Hodgkin lymphomas (except Burkitt lymphoma)	6.3	27	4,225,528	8.5	213	25,061,061
II(c) Burkitt lymphoma	2.2	9	4,225,528	2.5	62	25,061,061
II(d) Miscellaneous lymphoreticular neoplasms	0.9	4	4,225,528	0.6	17	25,061,061
II(e) Unspecified lymphomas	0.2	1	4,225,528	0.2	4	25,061,061
III CNS and misc intracranial and intraspinal neoplasms	47.5	201	4,225,528	43.4	1,088	25,061,061
III(a) Ependymomas and choroid plexus tumor	3.5	15	4,225,528	4.5	114	25,061,061
III(b) Astrocytomas	20.6	87	4,225,528	15.0	376	25,061,061
III(c) Intracranial and intraspinal embryonal tumors	8.5	36	4,225,528	6.4	161	25,061,061
III(d) Other gliomas	6.4	27	4,225,528	5.2	128	25,061,061
III(e) Other specified intracranial/intraspinal neoplasms	8.0	34	4,225,528	11.4	285	25,061,061
III(f) Unspecified intracranial and intraspinal neoplasms	0.5	2	4,225,528	1.0	24	25,061,061
IV Neuroblastoma and other peripheral nervous cell tumors	7.2	31	4,225,528	8.9	232	25,061,061
IV(a) Neuroblastoma and ganglioneuroblastoma	6.9	30	4,225,528	8.5	224	25,061,061
IV(b) Other peripheral nervous cell tumors	0.2	1	4,225,528	0.3	8	25,061,061
V Retinoblastoma	3.7	16	4,225,528	3.8	101	25,061,061
VI Renal tumors	7.0	30	4,225,528	5.5	140	25,061,061
VI(a) Nephroblastoma and other nonepithelial renal tumors	6.8	29	4,225,528	4.9	127	25,061,061
VI(b) Renal carcinomas	0.2	1	4,225,528	0.5	13	25,061,061
VI(c) Unspecified malignant renal tumors	0.0	0	4,225,528	0.0	0	25,061,061
VII Hepatic tumors	1.4	6	4,225,528	2.7	71	25,061,061
VII(a) Hepatoblastoma	0.9	4	4,225,528	1.9	51	25,061,061
VII(b) Hepatic carcinomas	0.5	2	4,225,528	0.8	20	25,061,061
VII(c) Unspecified malignant hepatic tumors	0.0	0	4,225,528	0.0	0	25,061,061
VIII Malignant bone tumors	10.2	43	4,225,528	9.2	230	25,061,061
VIII(a) Osteosarcomas	6.4	27	4,225,528	4.6	115	25,061,061
VIII(b) Chondrosarcomas	0.2	1	4,225,528	0.3	8	25,061,061
VIII(c) Ewing tumor and related sarcomas of bone	2.9	12	4,225,528	3.5	86	25,061,061
VIII(d) Other specified malignant bone tumors	0.0	0	4,225,528	0.8	19	25,061,061
VIII(e) Unspecified malignant bone tumors	0.7	3	4,225,528	0.1	2	25,061,061
IX Soft tissue and other extraosseous sarcomas	13.7	58	4,225,528	15.3	385	25,061,061
IX(a) Rhabdomyosarcomas	5.9	25	4,225,528	4.4	112	25,061,061
IX(b) Fibrosarcomas, peripheral nerve & other fibrous	1.2	5	4,225,528	3.8	95	25,061,061
IX(c) Kaposi sarcoma	0.0	0	4,225,528	0.0	1	25,061,061
IX(d) Other specified soft tissue sarcomas	4.0	17	4,225,528	6.2	155	25,061,061
IX(e) Unspecified soft tissue sarcomas	2.6	11	4,225,528	0.9	22	25,061,061
X Germ cell & trophoblastic tumors & neoplasms of gonads	11.1	48	4,225,528	14.3	361	25,061,061
X(a) Intracranial & intraspinal germ cell tumors	0.9	4	4,225,528	2.3	58	25,061,061
X(b) Extracranial & extragonadal germ cell tumors	1.4	6	4,225,528	1.8	47	25,061,061
X(c) Malignant gonadal germ cell tumors	8.1	35	4,225,528	9.6	239	25,061,061
X(d) Gonadal carcinomas	0.7	3	4,225,528	0.5	12	25,061,061
X(e) Other and unspecified malignant gonadal tumors	0.0	0	4,225,528	0.2	5	25,061,061

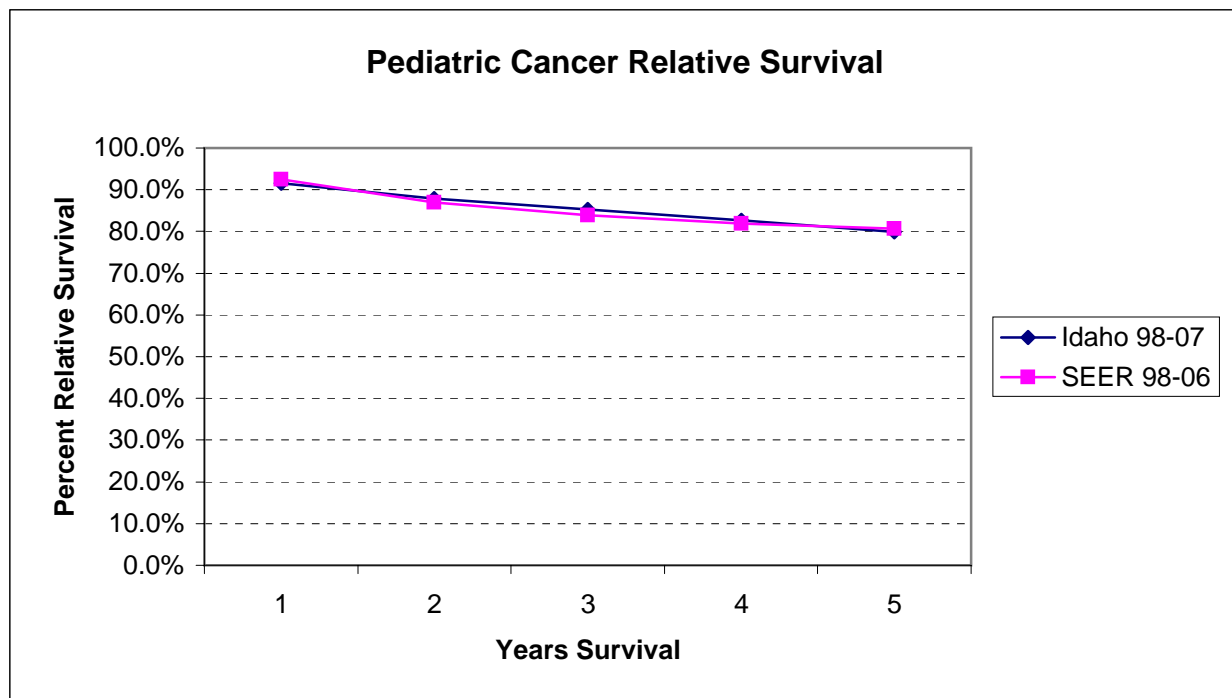
Pediatric Cancer Incidence in Idaho and SEER Regions (Ages 0-19) - continued

Site/Type of Cancer	Idaho 1998-2007			SEER 2004-2006		
	Rate	Cases	Pop	Rate	Cases	Pop
XI Other malignant epithelial neoplasms and melanomas	22.6	97	4,225,528	17.5	437	25,061,061
XI(a) Adrenocortical carcinomas	0.0	0	4,225,528	0.3	8	25,061,061
XI(b) Thyroid carcinomas	8.6	37	4,225,528	5.8	145	25,061,061
XI(c) Nasopharyngeal carcinomas	0.2	1	4,225,528	0.3	7	25,061,061
XI(d) Malignant melanomas	8.1	35	4,225,528	7.1	178	25,061,061
XI(e) Skin carcinomas	0.0	0	4,225,528	0.1	3	25,061,061
XI(f) Other and unspecified carcinomas	5.7	24	4,225,528	3.8	96	25,061,061
XII Other and unspecified malignant neoplasms	0.7	3	4,225,528	0.4	10	25,061,061
XII(a) Other specified malignant tumors	0.5	2	4,225,528	0.2	6	25,061,061
XII(b) Other unspecified malignant tumors	0.2	1	4,225,528	0.2	4	25,061,061
Not classified by ICCC or in situ	4.0	17	4,225,528	4.6	114	25,061,061

Rates are per 1,000,000 and age-adjusted to the 2000 U.S. standard.

SEER data are for White race. Cases and rates are for benign, borderline, and malignant behavior.

Statistical Note: Rates based upon 10 or fewer cases (numerator) should be interpreted with caution.



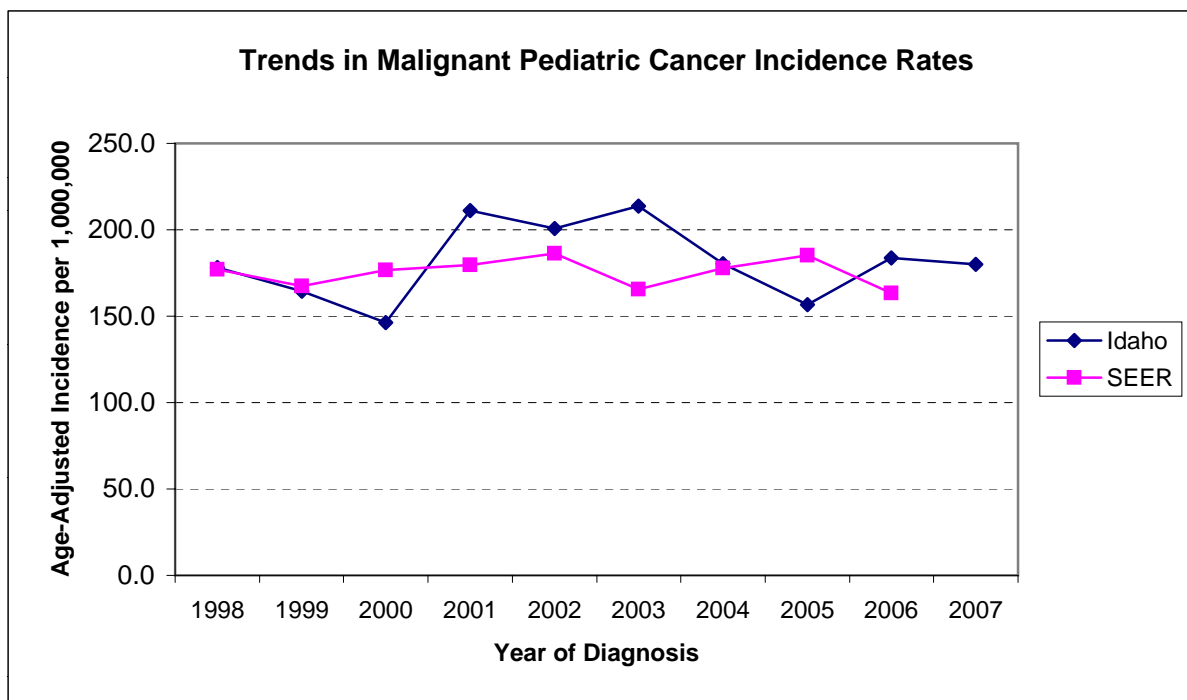
Five-Year Relative Cancer Survival by Major ICCC Classification Category

Site/Type of Cancer	Idaho 1998-2007			SEER 1998-2006		
	Cases	% Survival	95% CI	Cases	% Survival	95% CI
All Sites Combined	751	79.9%	76.6% - 83.2%	12,790	80.6%	79.8% - 81.4%
I Leukemias, myeloproliferative & myelodysplastic diseases	187	80.5%	74.2% - 86.8%	3,562	78.4%	76.8% - 80.0%
II Lymphomas and reticuloendothelial neoplasms	98	95.2%	90.3% - 100.0%	1,802	89.5%	87.9% - 91.1%
III CNS and misc intracranial and intraspinal neoplasms	156	72.3%	64.5% - 80.1%	2,192	74.1%	71.9% - 76.3%
IV Neuroblastoma and other peripheral nervous cell tumors	28	68.3%	46.2% - 90.4%	625	74.3%	70.2% - 78.4%
V Retinoblastoma	14	80.2%	45.1% - 100.0%	273	98.6%	96.6% - 100.0%
VI Renal tumors	30	87.1%	73.2% - 100.0%	455	89.0%	85.7% - 92.3%
VII Hepatic tumors	6	44.5%	0.8% - 88.2%	176	61.3%	52.7% - 69.9%
VIII Malignant bone tumors	38	47.2%	24.3% - 70.1%	620	65.8%	61.1% - 70.5%
IX Soft tissue and other extraosseous sarcomas	52	81.1%	68.4% - 93.8%	875	71.1%	67.6% - 74.6%
X Germ cell & trophoblastic tumors & neoplasms of gonads	47	85.8%	74.6% - 97.0%	932	90.9%	88.7% - 93.1%
XI Other malignant epithelial neoplasms and melanomas	92	86.0%	76.8% - 95.2%	1,238	90.7%	88.7% - 92.7%
XII Other and unspecified malignant neoplasms	3	100.0%	100.0% - 100.0%	40	68.0%	51.7% - 84.3%

Malignant Pediatric Cancer Incidence in Idaho and SEER Regions (Ages 0-19)

Year of Diagnosis	Idaho 1998-2007			SEER 1998-2006		
	Rate	Cases	Pop	Rate	Cases	Pop
Total	181.6	774	4,225,528	175.4	13,196	75,059,191
1998	178.2	73	406,767	177.0	1,466	8,273,535
1999	164.5	69	411,481	167.3	1,390	8,317,117
2000	146.3	61	415,095	176.8	1,472	8,337,592
2001	211.3	88	414,885	179.6	1,502	8,362,298
2002	200.8	84	416,059	186.3	1,556	8,357,620
2003	213.8	90	418,183	165.5	1,383	8,349,968
2004	180.5	77	422,569	177.8	1,493	8,357,733
2005	156.6	68	430,816	185.1	1,558	8,351,448
2006	183.6	82	440,075	163.3	1,376	8,351,880
2007	179.9	82	449,598			

Rates are per 1,000,000 and age-adjusted to the 2000 U.S. standard.



Pediatric Cancer Incidence in Idaho (Ages 0-19) by Health District, Major Classification Categories

Site/Type of Cancer	Health District 1			Health District 2			Health District 3		
	Rate	95% CI	Cases	Rate	95% CI	Cases	Rate	95% CI	Cases
All Sites Combined	175.8	141.5 - 215.9	91	125.9	86.7 - 177.0	34	205.4	172.7 - 242.5	140
I Leukemias, myeloproliferative & myelodysplastic diseases	55.4	36.8 - 80.1	28	17.0	4.6 - 42.9	4	57.6	41.1 - 78.4	40
II Lymphomas and reticuloendothelial neoplasms	17.0	7.8 - 32.5	9	15.6	5.0 - 38.4	5	27.4	16.2 - 43.2	18
III CNS and misc intracranial and intraspinal neoplasms	30.6	17.5 - 49.8	16	42.5	21.0 - 76.6	11	48.0	33.0 - 67.4	33
IV Neuroblastoma and other peripheral nervous cell tumors	6.2	1.3 - 17.8	3	12.7	2.6 - 36.7	3	3.9	0.8 - 11.7	3
V Retinoblastoma	2.0	0.1 - 11.0	1	0.0	0.0 - 14.8	0	2.7	0.3 - 9.9	2
VI Renal tumors	10.0	3.2 - 23.2	5	0.0	0.0 - 14.8	0	13.5	6.5 - 25.0	10
VII Hepatic tumors	0.0	0.0 - 7.2	0	0.0	0.0 - 14.8	0	0.0	0.0 - 5.3	0
VIII Malignant bone tumors	9.4	3.0 - 22.0	5	10.9	2.2 - 32.7	3	4.7	1.0 - 13.5	3
IX Soft tissue and other extraosseous sarcomas	5.6	1.2 - 16.6	3	4.3	0.1 - 23.2	1	7.5	2.4 - 17.3	5
X Germ cell & trophoblastic tumors & neoplasms of gonads	11.8	4.3 - 25.7	6	13.1	3.5 - 35.3	4	15.4	7.4 - 28.1	10
XI Other malignant epithelial neoplasms and melanomas	25.9	14.2 - 43.6	14	9.8	2.0 - 30.5	3	24.8	14.2 - 40.1	16
XII Other and unspecified malignant neoplasms	1.8	0.0 - 10.4	1	0.0	0.0 - 14.8	0	0.0	0.0 - 5.3	0

Site/Type of Cancer	Health District 4			Health District 5			Health District 6			Health District 7		
	Rate	95% CI	Cases	Rate	95% CI	Cases	Rate	95% CI	Cases	Rate	95% CI	Cases
All Sites Combined	218.9	191.9 - 248.7	237	189.5	154.0 - 230.7	99	184.1	149.8 - 224.0	100	199.5	165.5 - 238.3	123
I Leukemias...	47.2	35.2 - 61.9	52	36.5	22.0 - 57.0	19	33.6	19.9 - 53.0	18	50.0	33.6 - 71.4	30
II Lymphomas...	20.7	12.9 - 31.2	22	40.4	25.0 - 61.7	21	22.0	11.4 - 38.5	12	21.1	11.2 - 36.2	13
III CNS and...	49.3	37.0 - 64.3	54	47.9	31.0 - 70.7	25	55.2	37.2 - 78.8	30	53.5	36.5 - 75.7	32
IV Neuroblastoma...	9.5	4.7 - 17.1	11	1.9	0.0 - 10.6	1	10.8	4.0 - 23.6	6	6.6	1.8 - 16.9	4
V Retinoblastoma	5.1	1.9 - 11.2	6	3.8	0.5 - 13.8	2	3.8	0.5 - 13.5	2	4.9	1.0 - 14.4	3
VI Renal tumors	7.9	3.6 - 15.1	9	1.9	0.0 - 10.6	1	5.6	1.1 - 16.3	3	3.6	0.4 - 12.6	2
VII Hepatic tumors	3.6	1.0 - 9.2	4	3.8	0.5 - 13.7	2	0.0	0.0 - 6.8	0	0.0	0.0 - 6.1	0
VIII Malignant bone tumors	9.6	4.6 - 17.6	10	15.2	6.6 - 29.9	8	14.8	6.4 - 29.2	8	9.9	3.6 - 21.6	6
IX Soft tissue...	18.6	11.4 - 28.7	20	11.5	4.2 - 25.0	6	20.3	10.1 - 36.4	11	19.2	9.9 - 33.7	12
X Germ cell...	12.5	6.7 - 21.3	13	5.7	1.2 - 16.6	3	16.2	7.4 - 30.8	9	4.5	0.9 - 13.6	3
XI Other malig epithelial...	35.0	24.5 - 48.4	36	20.9	10.5 - 37.5	11	1.8	0.0 - 10.1	1	23.1	13.2 - 38.0	16
XII Other/unspecified...	0.0	0.0 - 3.4	0	0.0	0.0 - 7.0	0	0.0	0.0 - 6.8	0	3.1	0.4 - 11.4	2

Rates are per 1,000,000 and age-adjusted to the 2000 U.S. standard.

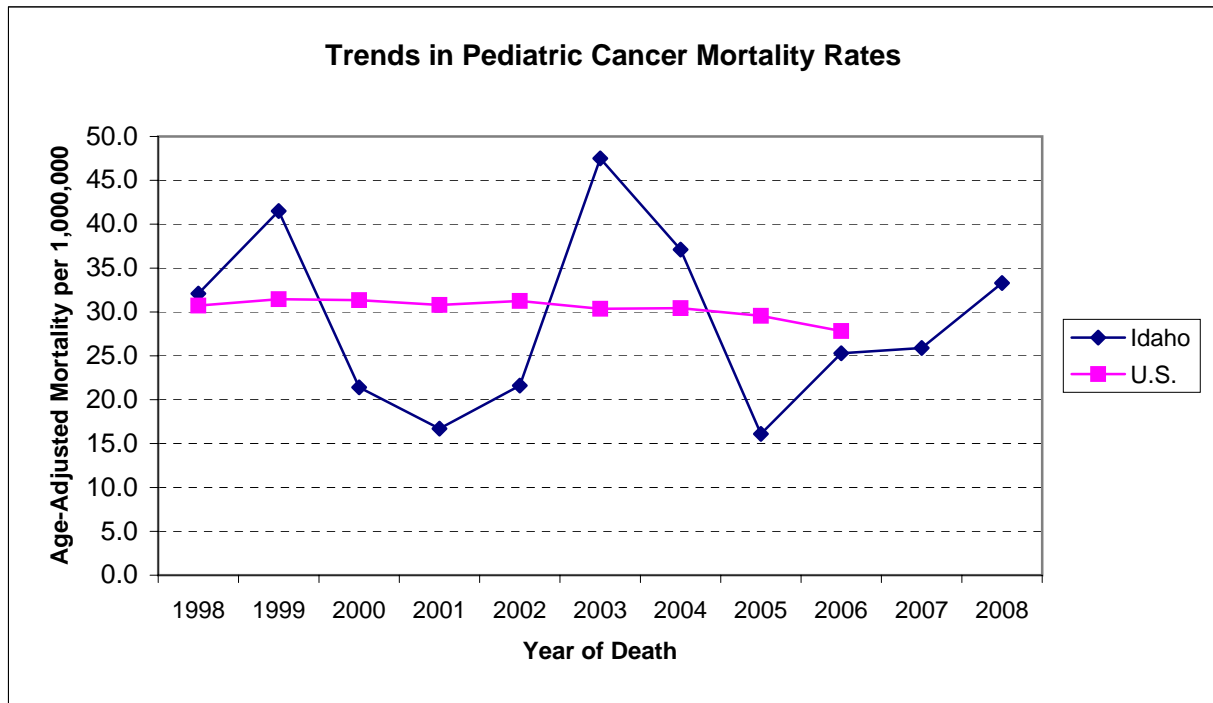
Confidence intervals (CIs) are 95% for rates.

Statistical Note: Rates based upon 10 or fewer cases (numerator) should be interpreted with caution.

Pediatric Cancer Mortality in Idaho and the U.S. (Ages 0-19)

Year of Death	Idaho 1998-2008			U.S. 1998-2006		
	Rate	Deaths	Pop	Rate	Deaths	Pop
Total	28.9	136	4,681,717	30.4	22,150	728,015,191
1998	32.1	13	406,767	30.7	2,435	79,320,164
1999	41.5	17	411,481	31.5	2,517	80,039,970
2000	21.4	9	415,095	31.3	2,523	80,545,685
2001	16.7	7	414,885	30.8	2,487	80,782,196
2002	21.6	9	416,059	31.2	2,530	80,982,963
2003	47.5	20	418,183	30.4	2,466	81,187,686
2004	37.1	16	422,569	30.4	2,481	81,479,136
2005	16.1	7	430,816	29.6	2,420	81,690,257
2006	25.3	11	440,075	27.8	2,291	81,987,134
2007	25.9	12	449,598			
2008	33.3	15	456,189			

Rates are per 1,000,000 and age-adjusted to the 2000 U.S. standard.



Appendix A

Site/histology recode based on International Classification of Childhood Cancer, Third edition (ICCC-3) based on ICD-O-3¹

Site Group	ICD-O-3 Histology (Type)	ICD-O-2/3 Site	Recode
I Leukemias, myeloproliferative diseases, and myelodysplastic diseases			
(a) Lymphoid leukemias	9820, 9823, 9826, 9827, 9831-9837, 9940, 9948	C000-C809	011
(b) Acute myeloid leukemias	9840, 9861, 9866, 9867, 9870-9874, 9891, 9895-9897, 9910, 9920, 9931	C000-C809	012
(c) Chronic myeloproliferative diseases	9863, 9875, 9876, 9950, 9960-9964	C000-C809	013
(d) Myelodysplastic syndrome and other myeloproliferative diseases	9945, 9946, 9975, 9980, 9982-9987, 9989	C000-C809	014
(e) Unspecified and other specified leukemias	9800, 9801, 9805, 9860, 9930	C000-C809	015
II Lymphomas and reticuloendothelial neoplasms			
(a) Hodgkin lymphomas	9650-9655, 9659, 9661-9665, 9667	C000-C809	021
(b) Non-Hodgkin lymphomas (except Burkitt lymphoma)	9591, 9670, 9671, 9673, 9675, 9678-9680, 9684, 9689-9691, 9695, 9698-9702, 9705, 9708, 9709, 9714, 9716-9719, 9727-9729, 9731-9734, 9760-9762, 9764-9769, 9970	C000-C809	022
(c) Burkitt lymphoma	9687	C000-C809	023
(d) Miscellaneous lymphoreticular neoplasms	9740-9742, 9750, 9754-9758	C000-C809	024
(e) Unspecified lymphomas	9590, 9596	C000-C809	025
III CNS and miscellaneous intracranial and intraspinal neoplasms			
(a) Ependymomas and choroid plexus tumor	9383, 9390-9394	C000-C809	031
(b) Astrocytomas	9380	C723	032
	9384, 9400-9411, 9420, 9421-9424, 9440-9442	C000-C809	032
(c) Intracranial and intraspinal embryonal tumors	9470-9474, 9480, 9508	C000-C809	033
	9501-9504	C700-C729	033
(d) Other gliomas	9380	C700-C722, C724-C729, C751, C753	034
	9381, 9382, 9430, 9444, 9450, 9451, 9460	C000-C809	034

(e) Other specified intracranial and intraspinal neoplasms	8270-8281, 8300, 9350-9352, 9360-9362, 9412, 9413, 9492, 9493, 9505-9507, 9530-9539, 9582	C000-C809	035
(f) Unspecified intracranial and intraspinal neoplasms	8000-8005	C700-C729, C751-C753	036
IV Neuroblastoma and other peripheral nervous cell tumors			
(a) Neuroblastoma and ganglioneuroblastoma	9490, 9500	C000-C809	041
(b) Other peripheral nervous cell tumors	8680-8683, 8690-8693, 8700, 9520-9523	C000-C809	042
	9501-9504	C000-C699, C739-C768, C809	042
V Retinoblastoma	9510-9514	C000-C809	050
VI Renal tumors			
(a) Nephroblastoma and other nonepithelial renal tumors	8959, 8960, 8964-8967	C000-C809	061
	8963, 9364	C649	061
(b) Renal carcinomas	8010-8041, 8050-8075, 8082, 8120-8122, 8130-8141, 8143, 8155, 8190-8201, 8210, 8211, 8221-8231, 8240, 8241, 8244-8246, 8260-8263, 8290, 8310, 8320, 8323, 8401, 8430, 8440, 8480-8490, 8504, 8510, 8550, 8560-8576	C649	062
	8311, 8312, 8316-8319, 8361	C000-C809	062
(c) Unspecified malignant renal tumors	8000-8005	C649	063
VII Hepatic tumors			
(a) Hepatoblastoma	8970	C000-C809	071
(b) Hepatic carcinomas	8010-8041, 8050-8075, 8082, 8120-8122, 8140, 8141, 8143, 8155, 8190-8201, 8210, 8211, 8230, 8231, 8240, 8241, 8244-8246, 8260-8264, 8310, 8320, 8323, 8401, 8430, 8440, 8480-8490, 8504, 8510, 8550, 8560-8576	C220, C221	072
	8160-8180	C000-C809	072
(c) Unspecified malignant hepatic tumors	8000-8005	C220, C221	073
VIII Malignant bone tumors			
(a) Osteosarcomas	9180-9187, 9191-9195, 9200	C400-C419, C760-C768, C809	081
(b) Chondrosarcomas	9210, 9220, 9240	C400-C419, C760-C768, C809	082
	9221, 9230, 9241-9243	C000-C809	082
(c) Ewing tumor and related sarcomas of bone	9260	C400-C419, C760-C768, C809	083
	9363-9365	C400-C419	083

(d) Other specified malignant bone tumors	8810, 8811, 8823, 8830	C400-C419	084
	8812, 9250, 9261, 9262, 9270-9275, 9280-9282, 9290, 9300-9302, 9310-9312, 9320-9322, 9330, 9340-9342, 9370-9372	C000-C809	084
(e) Unspecified malignant bone tumors	8000-8005, 8800, 8801, 8803-8805	C400-C419	085
IX Soft tissue and other extraosseous sarcomas			
(a) Rhabdomyosarcomas	8900-8905, 8910, 8912, 8920, 8991	C000-C809	091
(b) Fibrosarcomas, peripheral nerve sheath tumors, and other fibrous neoplasms	8810, 8811, 8813-8815, 8821, 8823, 8834-8835	C000-C399, C440-C768, C809	092
	8820, 8822, 8824-8827, 9150, 9160, 9491, 9540-9571, 9580	C000-C809	092
(c) Kaposi sarcoma	9140	C000-C809	093
(d) Other specified soft tissue sarcomas	8587, 8710-8713, 8806, 8831-8833, 8836, 8840-8842, 8850-8858, 8860-8862, 8870, 8880, 8881, 8890-8898, 8921, 8982, 8990, 9040-9044, 9120-9125, 9130-9133, 9135, 9136, 9141, 9142, 9161, 9170-9175, 9231, 9251, 9252, 9373, 9581	C000-C809	094
	8830	C000-C399, C440-C768, C809	094
	8963	C000-C639, C659-C699, C739-C768, C809	094
	9180, 9210, 9220, 9240	C490-C499	094
	9260	C000-C399, C470-C759	094
	9364	C000-C399, C470-C639, C659-C699, C739-C768, C809	094
	9365	C000-C399, C470-C639, C659-C768, C809	094
(e) Unspecified soft tissue sarcomas	8800-8805	C000-C399, C440-C768, C809	095
X Germ cell tumors, trophoblastic tumors, and neoplasms of gonads			
(a) Intracranial and intraspinal germ cell tumors	9060-9065, 9070-9072, 9080-9085, 9100, 9101	C700-C729, C751-C753	101
(b) Malignant extracranial and extragonadal germ cell tumors	9060-9065, 9070-9072, 9080-9085, 9100-9105	C000-C559, C570-C619, C630-C699, C739-C750, C754-C768, C809	102
(c) Malignant gonadal germ cell tumors	9060-9065, 9070-9073, 9080-9085, 9090, 9091, 9100, 9101	C569, C620-C629	103
(d) Gonadal carcinomas	8010-8041, 8050-8075, 8082, 8120-8122, 8130-8141, 8143, 8190-8201,	C569, C620-C629	104

	8210, 8211, 8221-8241, 8244-8246, 8260-8263, 8290, 8310, 8313, 8320, 8323, 8380-8384, 8430, 8440, 8480-8490, 8504, 8510, 8550, 8560-8573, 9000, 9014, 9015		
	8441-8444, 8450, 8451, 8460-8473	C000-C809	104
(e) Other and unspecified malignant gonadal tumors	8590-8671	C000-C809	105
	8000-8005	C569, C620-C629	105
XI Other malignant epithelial neoplasms and malignant melanomas			
(a) Adrenocortical carcinomas	8370-8375	C000-C809	111
(b) Thyroid carcinomas	8010-8041, 8050-8075, 8082, 8120-8122, 8130-8141, 8190, 8200, 8201, 8211, 8230, 8231, 8244-8246, 8260-8263, 8290, 8310, 8320, 8323, 8430, 8440, 8480, 8481, 8510, 8560-8573	C739	112
	8330-8337, 8340-8347, 8350	C000-C809	112
(c) Nasopharyngeal carcinomas	8010-8041, 8050-8075, 8082, 8083, 8120-8122, 8130-8141, 8190, 8200, 8201, 8211, 8230, 8231, 8244-8246, 8260-8263, 8290, 8310, 8320, 8323, 8430, 8440, 8480, 8481, 8500-8576	C110-C119	113
(d) Malignant melanomas	8720-8780, 8790	C000-C809	114
(e) Skin carcinomas	8010-8041, 8050-8075, 8078, 8082, 8090-8110, 8140, 8143, 8147, 8190, 8200, 8240, 8246, 8247, 8260, 8310, 8320, 8323, 8390-8420, 8430, 8480, 8542, 8560, 8570-8573, 8940, 8941	C440-C449	115
(f) Other and unspecified carcinomas	8010-8084, 8120-8157, 8190-8264, 8290, 8310, 8313-8315, 8320-8325, 8360, 8380-8384, 8430-8440, 8452-8454, 8480-8586, 8588-8589, 8940, 8941, 8983, 9000, 9010-9016, 9020, 9030	C000-C109, C129-C218, C239-C399, C480-C488, C500-C559, C570-C619, C630-C639, C659-C729, C750-C768, C809	116
XII Other and unspecified malignant neoplasms			
(a) Other specified malignant tumors	8930-8936, 8950, 8951, 8971-8981, 9050-9055, 9110	C000-C809	121
	9363	C000-C399, C470-C759	121
(b) Other unspecified malignant tumors	8000-8005	C000-C218, C239-C399, C420-C559, C570-C619, C630-C639, C659-C699, C739-C750, C754-C809	122
Not Classified by ICCC or in situ			999

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