CANCER IN CHILDREN AND YOUTH (0-19 YEARS)

Cancer occurs rarely among Canadian children and youth. Most individuals in this age group who develop cancer will survive their illness. Table W2 shows the number of new cases of cancer along with age-standardized incidence rates (ASIR) for 2001-2005, the number of deaths due to cancer along with age-standardized mortality rates (ASMR) for 2000-2004, and estimated five-year survival proportions for the period from 2000 to 2004 for Canadian children and youth aged 0-19 years. Cancer was diagnosed in an average of 1,271 children each year between 2001 and 2005, and 208 died on average each year between 2000 and 2004 from their disease.

Leukemia accounted for 25% of new cases and 28% of deaths due to cancer in children, and remains the most common of the cancers in this age group. Lymphomas, the second most common group of cancers in children and youth, constituted 18% of new cases and 8% of deaths, while cancers of the central nervous system accounted for 17% of new cases and 24% of deaths.

The five-year observed survival proportion (OSP) for all childhood and youth cancers combined was estimated at 82%. Among diagnostic groups, five-year survival estimates were highest for retinoblastoma (99%), other malignant epithelial neoplasms (92%) and for germ cell and other gonadal tumours (88%). Survival estimates were poorest for malignant bone tumours (64%) and hepatic tumours (71%).

The trends in ASIR and ASMR between 1985 and 2009 are shown in Figure W2. Incidence rates for the most common cancers in this age group show some yearly fluctuation but have changed little during this period. On the other hand, mortality rates have dropped since 1985. For example, the ASMR for all cancers combined has declined from 43.0 per million in 1985 to an estimated 22.4 per million in 2009. The decline is likely the result of improvements in treatment for childhood cancer.

The *Canadian Cancer Statistics* has more information about childhood cancer (ages 0-14) and cancer in adolescents and young adults (15-29 years).

Cancer occurs rarely among Canadian children and youth, most individuals in this age group who develop cancer will survive their illness. While cancer mortality rates have declined, incidence rates have changed very little since 1985 in children and youth.

Table W2

New Cases and Deaths, Average Annual Age-Standardized Incidence (ASIR) and Mortality (ASMR) Rates, and Five-Year Observed Survival Proportions (OSP) Estimates (%) and 95% Confidence Intervals (CI), by Diagnostic Group in Children and Youth (0-19 Years), Canada*

Diagnostic Group (Subgroup)	New cases (2001-2005)	ASIR (per 1,000,000) per year	Deaths (2000-2004)	ASMR (per 1,000,000) per year	5-year OSP (95% CI) (2000-2004)
Total† (5 years)	**6,353**	**162.6**	**1,038**	**26.0**	**82 (81-83)**
Average Per Year	**1,271**		**208**		
I Leukemia	**1,615**	**42.8**	**294**	**7.4**	**82 (80-84)**
a. Lymphoid	1,203	32.1	115	2.8	88 (86-90)
b. Acute Myeloid	246	6.3	89	2.3	60 (54-66)
II. Lymphoma	**1,140**	**27.5**	**82**	**2.0**	**88 (86-90)**
a. Hodgkin Lymphoma	638	15.0	15	0.4	94 (91-95)
b. Non-Hodgkin Lymphoma	270	6.6	26	0.6	81 (75-85)
c. Burkitt Lymphoma	108	2.7	12	0.3	85 (77-91)
III. Central Nervous System	**1,061**	**27.3**	**248**	**6.3**	**76 (73-79)**
a. Ependymoma	97	2.6	21	0.6	75 (64-83)
b. Astrocytoma	470	12.0	60	1.5	83 (79-86)
c. Intracranial & Intraspinal Embryonal	231	6.1	67	1.7	63 (56-69)
XI. Other Malignant Epithelial	**608**	**14.5**	**21**	**0.5**	**92 (90-94)**
b. Thyroid	269	6.3	0	0.0	99 (96-100)
d. Malignant Melanoma	157	3.7	3	0.1	97 (92-99)
X. Germ Cell and Other Gonadal	**397**	**9.7**	**26**	**0.6**	**88 (84-91)**
c. Gonadal Germ Cell Tumours	262	6.2	6	0.1	92 (88-95)
IX. Soft Tissue	**391**	**9.8**	**84**	**2.1**	**76 (70-80)**
a. Rhabdomyosarcoma	153	3.9	43	1.1	74 (65-81)
VIII. Malignant Bone	**325**	**7.8**	**109**	**2.6**	**64 (58-69)**
a. Osteosarcoma	156	3.7	56	1.3	60 (51-67)
c. Ewing's Sarcoma	133	3.2	48	1.1	62 (52-70)
IV. Neuroblastoma & Other PNC	**318**	**9.3**	**86**	**2.3**	**73 (67-78)**
a. Neuroblastoma	311	9.1	86	2.3	72 (66-77)
VI. Renal Tumours	**232**	**6.5**	**35**	**0.9**	**87 (81-90)**
a. Nephroblastoma	203	5.7	27	0.7	88 (83-92)
V. Retinoblastoma	**87**	**2.6**	**3**	**0.1**	**99 (93-100)**
VII. Hepatic Tumours	**74**	**2.1**	**17**	**0.5**	**71 (58-81)**
XII. Other and Unspecified Cancers	**99**	**2.6**	**23**	**0.6**	**90 (81-95)**

ASIR, age-standardized incidence rate; ASMR, age-standardized mortality rate; OSP, observed survival proportion; CI, confidence interval

* Data from Quebec were excluded from survival calculations, in part, because the method for ascertaining the date of cancer diagnosis differs from the method used by other provinces/territories and because of issues in correctly ascertaining the vital statistics of these cases.

† Total includes 6 malignant new cases and 10 deaths which were unclassifiable.

Note: Rates are age-standardized to the 1991 Canadian population and are expressed per million per year due to disease rarity. Cases were classified according to the third edition of the International Classification of Childhood Cancer.[1] PNC denotes peripheral nervous cell tumours.

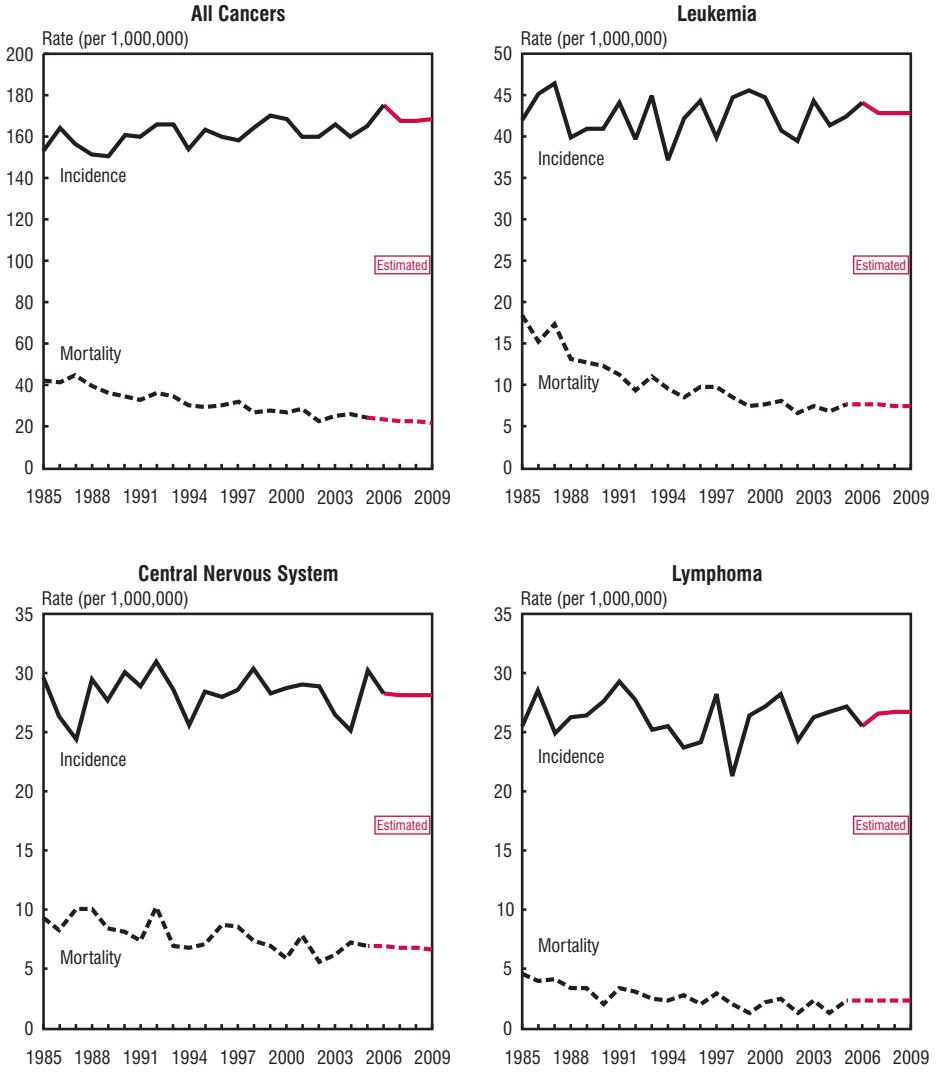
[1] Fritz A, Jack A, Parkin DM, et al (eds.). *International Classification of Diseases for Oncology. Third Edition.* Geneva, World Health Organization, 2000.

Analysis by: Health Statistics Division, Statistics Canada

Data sources: Canadian Cancer Registry and Canadian Vital Statistics Death databases at Statistics Canada

Figure W2

Age-Standardized Incidence and Mortality Rates for Selected Cancers in Children and Youth (0-19 Years), Canada, 1985-2009



Note: The range of rate scales differs widely between the cancers. Incidence figures exclude non-melanoma skin cancer (basal and squamous). Actual incidence data were available to 2006 except for Quebec.

Analysis by: Chronic Disease Surveillance Division, CCDPC, Public Health Agency of Canada

Data sources: Canadian Cancer Registry and Canadian Vital Statistics Death databases at Statistics Canada