Incidence of Childhood Cancer in Kingston and St Andrew, Jamaica, 1983–2002

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ABSTRACT

Objectives: There have been several modifications to the classification of childhood cancers since the first report (1968–1981) specific to the Jamaican paediatric population was published in 1988. This paper reports on paediatric cancer incidence in Kingston and St Andrew, Jamaica, for the 20-year period 1983–2002 based on these modifications.

Methods: All cases of cancer diagnosed in children (0–14 years), between 1983 and 2002 were extracted from the Jamaica Cancer Registry archives and classified using the International Classification of Childhood Cancer, third edition. Incidence figures were calculated as per the International Agency for Research on Cancer (IARC) reporting format for childhood cancer.

Results: There were 272 cases (133 males, 139 females) of childhood cancer identified in the 20-year period. The overall age standardized rate (ASR) was 69.4 per million; that for males was 67.8 per million, and for females, 70.9 per million. The three most common malignancies overall were leukaemia (21.3%), lymphoma (15.8%) and brain and spinal neoplasms (14.0%). In males, the highest ASRs were seen for leukaemia (14.8 per million), lymphoma (12.7 per million), and brain and spinal neoplasms (8.2 per million), and in females, leukaemia (14.4 per million), nephroblastoma (11.3 per million), and brain and spinal neoplasms (10.6 per million).

Keywords: Childhood cancer, Jamaica

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Conclusions: The rankings of the most common childhood malignancies in Jamaica (leukaemia, brain and spinal neoplasms and lymphomas) have shown few changes since the last review. However, there are differences in frequency and gender distribution of nephroblastoma and brain and spinal neoplasms.

INTRODUCTION

Age-related incidence of cancer (Kingston and St Andrew, Jamaica) is published at five-yearly intervals by the Jamaica Cancer Registry. However, there is the need to publish data on childhood cancer separately, because the topographical classification utilized in the reporting of cancer incidence does not adequately address the malignancies found in children; the latter are better appreciated when classified according to diagnosis rather than topography.

Cancer incidence specific to the paediatric population has not been separately reported for the Kingston and St Andrew population since 1988, when data were published for the period 1968–1981 (1). Since then, there have been modifications to the classification of childhood cancers, consequent on a number of new developments, including the recognition of new entities (2). It is against this background that we decided to report on the childhood cancer incidence in Kingston and St Andrew beginning in 1983, and at the same time, to modify the data to bring it in line with the currently accepted classification.

SUBJECTS AND METHODS

All cases of cancer diagnosed in children between the ages of 0 and 14 years, for the period 1983–2002 were extracted from the Jamaica Cancer Registry archives. Cancers identified were reclassified using the International Classification of Childhood Cancer, third edition (ICCC-3) based on ICD-O-3 (2) and incidence figures calculated as per International Agency for Research on Cancer (IARC) reporting format for childhood cancer (3).

Terminology and calculations

The selected age groups were 0 (less than one year), 1–4, 5–9 and 10–14 years. Rates were expressed per million of the population at risk per annum.

Relative frequency: Overall frequency – Percentage contribution of the particular group or subgroup to the total case series. Group-frequency – Percentage contribution of each subgroup category to the total of the individual diagnostic group.

Crude incidence rate: Total number of cases divided by the corresponding population at risk.

Age-specific incidence rate: Number of cases of a specified age-gender group divided by the corresponding age-gender-specific population at risk.

Age-standardized rate (ASR): Calculated by the direct method (3), using the world standard population for the age groups outlined above.

Cumulative rate: An approximation of the cumulative risk for an individual of developing the cancer in question before the age of 15 years. It is the sum of the age-specific incidence rates from 0–14 over each year of age.

% MV: The proportion of microscopically verified diagnoses expressed as a percentage of all cases.

RESULTS

Table 1 illustrates the age and gender distribution of the population of Kingston and St Andrew in the 0–14-year age group.

Table 2 shows relative frequencies, age-specific incidence rates and ASRs for both genders combined. There were 272 cases of childhood cancer identified during the 20-year study period (133 males, 139 females; M:F ratio 0.96) with an ASR of 69.4 per million. The five most common malignancies overall were leukaemia (21.3%), lymphoma (15.8%), brain and spinal neoplasms (14.0%), nephroblastoma (11.8%) and neuroblastoma (8.8%). The most common diagnosis made overall, and in both males and females, was lymphoid leukaemia (acute lymphoblastic leukaemia), accounting for 19.5% of all neoplasms.

Table 3 shows the number of cases and the incidence rates for males and for females. The overall ASR for males was 67.8 per million, and the rate for females was 70.9 per million. In females, the highest ASRs were seen in leukaemia (14.4 per million), nephroblastoma (11.3 per million), brain and spinal neoplasms (10.6 per million), lymphoma (8.0 per million) and neuroblastoma (5.3 per million). In males, the highest ASRs were those for leukaemia (14.8 per million), lymphoma (12.7 per million), brain and spinal neoplasms (8.2 per million), neuroblastoma (7.6 per million) and retinoblastoma (6.8 per million).

The Figure shows the relative frequencies of the most common cancers in each age group:

0 years

There were 19 cancers in this age group (14 males, 5 females). The most common cancers were nephroblastoma and soft tissue sarcomas. These two cancers were also the most common cancers in males in this age group (28.6% and 21.4%, respectively) with neuroblastoma and retinoblastoma sharing third place ranking (14.3% each). All three cases of soft tissue sarcoma in this age group were present in

males. Hepatoblastoma was only seen in females and was the most common cancer in that gender (40%).

1–4 years

There were 101 cancers in this age group (40 males, 61 females), which had the highest incidence of cancer (91.7 per million) when compared to the other groups. The three most common cancers in males were retinoblastoma (22.5%), neuroblastoma (20.0%) and leukaemia (17.5%) while in females leukaemia (24.6%), nephroblastoma (24.6%) and retinoblastoma (13.1%) were most common.

5–9 years

There were 84 cancers in this age group (47 males, 37 females). The three most common cancers in males were leukaemia (32.6%), lymphoma (23.4%) and brain and spinal neoplasms (17.0%), while in females, brain and spinal neoplasms (24.3%), leukaemia (18.9%) and nephroblastoma (13.5%) were most common.

10–14 years

There were 68 cancers in this age group (32 males, 36 females), which showed the lowest incidence (52.6 per million) of all the groups. As in the 5–9 age group, the top three cancers in males of this age group were lymphoma (28.1%) leukaemia (18.8%) and brain and spinal neoplasms (18.8%); however, lymphoma rather than leukaemia was most commonly seen. The top three cancers in females were lymphoma (30.6%), leukaemia (16.7%) and bone neoplasms (16.7%).

DISCUSSION

The distribution of childhood cancers was similar to that reported elsewhere, with leukaemia, brain and spinal neoplasms and lymphoma being the most common (4, 5). The overall ASR for males was lower than that recorded in the previous review of childhood cancers in Jamaica (1) [87.8 per million in 1968–1981 *vs* 67.8 per million in 1983–2002], but the ASR for females remained roughly the same [70.1 per million in 1968–1981 *vs* 70.9 per million in 1983–2002]. The difference in the ASR for males between the two studies can be accounted for by the decreases in the ASRs of leukaemia, lymphoma and brain and spinal neoplasms in males in the current review. The reasons for the decreased incidence rates of these tumours are unclear.

The profiles of the most common childhood malignancies in both males and females have shown few changes since the last review. In females, leukaemia retained the first place ranking, and lymphoma, brain and spinal neoplasms, neuroblastoma and nephroblastoma remained among the top five, but the order of ranking changed. Nephroblastoma now occupies second place compared to fifth place in the last review. In males, leukaemia remained the most common malignancy followed by lymphoma, brain and spinal neoplasms and neuroblastoma. However, nephroblastoma which ranked fifth in the last review is currently ranked sixth, being replaced by retinoblastoma. The current high ranking of nephroblastoma in females is accompanied by a low male to female ratio, which is unusual in most populations (6) but has also been reported in another Caribbean island, Trinidad and Tobago (7), and in Nigeria (8). Brain and spinal neoplasms were also more commonly seen in females than in males (male to female ratio 0.8), and this has been previously documented elsewhere, although in general these tumours exhibit male predominance with male to female ratios ranging from 1.1–2.3 (9).

The most common malignancy in both males and females remained lymphoid leukaemia. This is in keeping with reports from Europe and North America (4, 10).

The burden of childhood malignancies was greatest in the 1–4-year age group, and this is similar to the findings of the previous report, which recorded the highest incidence in the 0–4-year age group for both males and females (1). It was not possible to further compare the tumour burden across individual age groups due to differences in age group categorization and data analysis, in light of recent revisions to the classification of childhood cancers (2, 3).

CONCLUSION

The rankings of the most common childhood malignancies in Jamaica (leukaemia, brain and spinal neoplasms and lymphomas) have shown few changes since the last review, the major change being nephroblastoma which is now ranked second in females and is more common than in males. Brain and spinal neoplasms were also more common in females.

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Table 1: Average annual population at risk: 1983–2002

Age (years)	Male	Female
< 1	6607	6735
1–4	27 268	27 829
5–9	33 440	33 624
10–14	32 694	31 955
0–14	100 009	100 143

Table 2: Incidence of childhood cancer in the 0–14 age group in Kingston and St Andrew

	NUMBER OF CASES						REL. FREQ. (%)		RATES PER MILLION							
	0	1–4	5–9	10–14	**All**	M/F	Overall	Group	0	1–4	5–9	10–14	Crude	**ASR**	Cum	%MV
I. LEUKAEMIA	0	22	24	12	**58**	1.1	21.3	100.0	0.0	20.0	17.9	9.3	14.5	**14.6**	*216*	100.0
Lymphoid	0	20	22	11	**53**	1.0	19.5	91.4	0.0	18.1	16.4	8.5	13.2	**13.4**	*197*	100.0
Acute myeloid	0	1	1	1	**3**	2.0	1.1	5.2	0.0	0.9	0.7	0.8	0.7	**0.7**	*11*	100.0
Chronic myeloproliferative diseases	0	0	0	0	**0**	_	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**	*0*	0.0
Myelodysplastic syndrome and other myeloproliferative diseases	0	0	0	0	**0**	_	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**	*0*	0.0
Unspecified and other specified	0	1	1	0	**2**	1.0	0.7	3.4	0.0	0.9	0.7	0.0	0.5	**0.5**	*7*	100.0
II. LYMPHOMAS AND RETICULOENDOTHELIAL NEOPLASMS	1	7	15	20	**43**	1.5	15.8	100.0	3.7	6.4	11.2	15.5	10.7	**10.4**	*162*	100.0
Hodgkin's lymphoma	0	1	4	4	**9**	1.3	3.3	20.9	0.0	0.9	3.0	3.1	2.2	**2.1**	*34*	100.0
Non-Hodgkin's Lymphomas	0	2	8	15	**25**	2.1	9.2	58.1	0.0	1.8	6.0	11.6	6.2	**5.9**	*95*	100.0
Burkitt's lymphoma	0	2	0	0	**2**	_	0.7	4.7	0.0	1.8	0.0	0.0	0.5	**0.6**	*7*	100.0
Miscellaneous lymphoreticular neoplasms	1	2	1	0	**4**	1.0	1.5	9.3	3.7	1.8	0.7	0.0	1.0	**1.1**	*15*	100.0
Unspecified	0	0	2	1	**3**	0.0	1.1	7.0	0.0	0.0	1.5	0.8	0.7	**0.7**	*11*	100.0
III. BRAIN AND SPINAL NEOPLASMS	2	9	17	10	**38**	0.8	14.0	100.0	7.5	8.2	12.7	7.7	9.5	**9.4**	*142*	68.4
Ependymoma	0	1	0	0	**1**	0.0	0.4	2.6	0.0	0.9	0.0	0.0	0.2	**0.3**	*4*	100.0
Astrocytoma	0	3	3	3	**9**	1.3	3.3	23.7	0.0	2.7	2.2	2.3	2.2	**2.2**	*34*	100.0
Intrcranial and intraspinal embryonal tumours	2	2	5	2	**11**	0.4	4.0	28.9	7.5	1.8	3.7	1.5	2.7	**2.8**	*41*	100.0
Other gliomas	0	1	2	1	**4**	0.3	1.5	10.5	0.0	0.9	1.5	0.8	1.0	**1.0**	*15*	100.0
Other specified	0	0	0	1	**1**	_	0.4	2.6	0.0	0.0	0.0	0.8	0.2	**0.2**	*4*	100.0
Unspecified	0	2	7	3	**12**	1.4	4.4	31.6	0.0	1.8	5.2	2.3	3.0	**2.9**	*45*	0.0
	2	15	6	1	**24**	1.4	8.8	100.0	7.5	13.6	4.5	0.8	6.0	**6.5**	*88*	100.0
IV. NEUROBLASTOMA AND OTHER PERIPHERAL NERVOUS CELL TUMOURS																
Neuroblastoma	2	14	6	1	**23**	1.6	8.5	95.8	7.5	12.7	4.5	0.8	5.7	**6.2**	*85*	100.0
Other	0	1	0	0	**1**	_	0.4	4.2	0.0	0.9	0.0	0.0	0.2	**0.3**	*4*	100.0
V. RETINOBLASTOMA	2	17	2	0	**21**	1.3	7.7	100.0	7.5	15.4	1.5	0.0	5.2	**5.8**	*77*	100.0
VI. RENAL TUMOURS	5	20	8	0	**33**	0.6	12.1	100.0	18.7	18.1	6.0	0.0	8.2	**9.0**	*121*	97.0
Nephroblastoma and other nonepithelial renal tumours	5	19	8	0	**32**	0.5	11.8	97.0	18.7	17.2	6.0	0.0	8.0	**8.7**	*118*	100.0
Renal carcinoma	0	0	0	0	**0**	_	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**	*0*	0.0
Unspecified	0	1	0	0	**1**	_	0.4	3.0	0.0	0.9	0.0	0.0	0.2	**0.3**	*4*	0.0
VII. HEPATIC TUMOURS	2	5	0	0	**7**	0.2	2.6	100.0	7.5	4.5	0.0	0.0	1.7	**2.0**	*26*	100.0
Hepatoblastoma	2	4	0	0	**6**	0.2	2.2	85.7	7.5	3.6	0.0	0.0	1.5	**1.7**	*22*	100.0
Hepatic carcinoma	0	1	0	0	**1**	_	0.4	14.3	0.0	0.9	0.0	0.0	0.2	**0.3**	*4*	100.0

Unspecified	0	0	0	0	**0**	_	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**	*0*	0.0
VIII. MALIGNANT BONE TUMOURS	0	0	4	9	**13**	0.4	4.8	100.0	0.0	0.0	3.0	7.0	3.2	**3.0**	*50*	100.0
Osteosarcoma	0	0	4	7	**11**	0.6	4.0	84.6	0.0	0.0	3.0	5.4	2.7	**2.5**	*42*	100.0
Chondrosarcoma	0	0	0	1	**1**	_	0.4	7.7	0.0	0.0	0.0	0.8	0.2	**0.2**	*4*	100.0
Ewing's tumour and related sarcomas	0	0	0	0	**0**	_	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**	*0*	0.0
Other specified	0	0	0	0	**0**	_	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**	*0*	0.0
Unspecified	0	0	0	1	**1**	_	0.4	7.7	0.0	0.0	0.0	0.8	0.2	**0.2**	*4*	100.0
IX. SOFT TISSUE SARCOMAS	3	1	3	4	**11**	1.8	4.0	100.0	11.2	0.9	2.2	3.1	2.7	**2.8**	*42*	90.9
Rhabdomyosarcoma	0	1	2	0	**3**	0.5	1.1	27.3	0.0	0.9	1.5	0.0	0.7	**0.8**	*11*	100.0
Fibrosarcoma, peripheral nerve sheath tumours and other fibrous tumours	2	0	0	0	**2**	_	0.7	18.2	7.5	0.0	0.0	0.0	0.5	**0.6**	*7*	100.0
Kaposi's sarcoma	0	0	0	0	**0**	_	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**	*0*	0.0
Other specified	0	0	1	2	**3**	2.0	1.1	27.3	0.0	0.0	0.7	1.5	0.7	**0.7**	*11*	100.0
Unspecified	1	0	0	2	**3**	2.0	1.1	27.3	3.7	0.0	0.0	1.5	0.7	**0.7**	*11*	66.7
X. GERM CELL TUMOURS, TROPHOBLASTIC TUMOURS AND NEOPLASMS OF GONADS	2	3	2	2	**9**	0.5	3.3	100.0	7.5	2.7	1.5	1.5	2.2	**2.4**	*34*	100.0
Intracranial and intraspinal germ cell	1	0	0	0	**1**	0.0	0.4	11.1	3.7	0.0	0.0	0.0	0.2	**0.3**	*4*	100.0
malignant extracranial and extragonadal germ cell	1	0	0	0	**1**	_	0.4	11.1	3.7	0.0	0.0	0.0	0.2	**0.3**	*4*	100.0
Malignant gonadal germ cell	0	3	2	2	**7**	0.4	2.6	77.8	0.0	2.7	1.5	1.5	1.7	**1.8**	*26*	100.0
Gonadal carcinoma	0	0	0	0	**0**	_	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**	*0*	0.0
Other and unspecified	0	0	0	0	**0**	_	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**	*0*	0.0
XI. OTHER MALIGNANT EPITHELIAL NEOPLASMS AND MALIGNANT MELANOMA	0	0	1	8	**9**	1.3	3.3	100.0	0.0	0.0	0.7	6.2	2.2	**2.0**	*35*	100.0
Adrenocortical	0	0	0	0	**0**	_	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**	*0*	0.0
Thyroid	0	0	0	0	**0**	_	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**	*0*	0.0
Nasopharyngeal	0	0	1	2	**3**	_	1.1	33.3	0.0	0.0	0.7	1.5	0.7	**0.7**	*11*	100.0
Melanoma	0	0	0	0	**0**	_	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**	*0*	0.0
Skin	0	0	0	0	**0**	_	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**	*0*	0.0
Other and unspecified	0	0	0	6	**6**	0.5	2.2	66.7	0.0	0.0	0.0	4.6	1.5	**1.3**	*23*	100.0
XII. OTHER AND UNSPECIFIED NEOPLASMS	0	2	2	2	**6**	0.5	2.2	100.0	0.0	1.8	1.5	1.5	1.5	**1.5**	*22*	100.0
Other specified	0	0	0	1	**1**	1.0	0.4	16.7	0.0	0.0	0.0	0.8	0.2	**0.2**	*4*	100.0
Other unspecified	0	2	2	1	**5**	0.3	1.8	83.3	0.0	1.8	1.5	0.8	1.2	**1.3**	*19*	100.0
TOTAL	19	101	84	68	**272**	1.0	100.0	100.0	71.2	91.7	62.6	52.6	67.9	**69.4**	*1014*	94.9

Table 3: Incidence of childhood cancer in boys and girls
0–14 years in Kingston and St Andrew

	MALE								FEMALE							
	NUMBER OF CASES				RATES PER MILLION				NUMBER OF CASES				RATES PER MILLION			
	0	1–4	5–9	10–14	**All**	Crude	**ASR**	Cum	0	1–4	5–9	10–14	**All**	Crude	**ASR**	*Cum*
I. LEUKAEMIA	0	7	17	6	**30**	15.0	**14.8**	*224*	0	15	7	6	**28**	14.0	**14.4**	207
Lymphoid	0	7	15	5	**27**	13.5	**13.4**	*202*	0	13	7	6	**26**	13.0	**13.3**	192
Acute myeloid	0	0	1	1	**2**	1.0	**0.9**	*15*	0	1	0	0	**1**	0.5	**0.6**	7
Chronic myeloproliferative diseases	0	0	0	0	**0**	0.0	**0.0**	*0*	0	0	0	0	**0**	0.0	**0.0**	0
Myelodysplastic syndrome and other myeloproliferative diseases	0	0	0	0	**0**	0.0	**0.0**	*0*	0	0	0	0	**0**	0.0	**0.0**	0
Unspecified and other specified	0	0	1	0	**1**	0.5	**0.5**	*7*	0	1	0	0	**1**	0.5	**0.6**	7
II. LYMPHOMAS AND RETICULOENDOTHELIAL NEOPLASMS	1	5	11	9	**26**	13.0	**12.7**	*195*	0	2	4	11	**17**	8.5	**8.0**	130
Hodgkin's lymphoma	0	1	3	1	**5**	2.5	**2.5**	*37*	0	0	1	3	**4**	2.0	**1.8**	31
Non-Hodgkin's Lymphomas	0	2	7	8	**17**	8.5	**8.1**	*128*	0	0	1	7	**8**	4.0	**3.7**	62
Burkitt's lymphoma	0	2	0	0	**2**	1.0	**1.1**	*15*	0	0	0	0	**0**	0.0	**0.0**	0
Miscellaneous lymphoreticular neoplasms	1	0	1	0	**2**	1.0	**1.1**	*15*	0	2	0	0	**2**	1.0	**1.1**	14
Unspecified	0	0	0	0	**0**	0.0	**0.0**	*0*	0	0	2	1	**3**	1.5	**1.4**	23
III. BRAIN AND SPINAL NEOPLASMS	1	2	8	6	**17**	8.5	**8.2**	*128*	1	7	9	4	**21**	10.5	**10.6**	156
Ependymoma	0	0	0	0	**0**	0.0	**0.0**	*0*	0	1	0	0	**1**	0.5	**0.6**	7
Astrocytoma	0	1	2	2	**5**	2.5	**2.4**	*38*	0	2	1	1	**4**	2.0	**2.0**	30
Intrcranial and intraspinal embryonal tumours	1	0	1	1	**3**	1.5	**1.5**	*23*	1	2	4	1	**8**	4.0	**4.1**	59
Other gliomas	0	0	1	0	**1**	0.5	**0.5**	*7*	0	1	1	1	**3**	1.5	**1.5**	22
Other specified	0	0	0	1	**1**	0.5	**0.4**	*8*	0	0	0	0	**0**	0.0	**0.0**	0
Unspecified	0	1	4	2	**7**	3.5	**3.4**	*53*	0	1	3	1	**5**	2.5	**2.4**	37
IV. NEUROBLASTOMA AND OTHER PERIPHERAL NERVOUS CELL TUMOURS	2	8	4	0	**14**	7.0	**7.6**	*104*	0	7	2	1	**10**	5.0	**5.3**	73
Neuroblastoma	2	8	4	0	**14**	7.0	**7.6**	*104*	0	6	2	1	**9**	4.5	**4.8**	66
Other	0	0	0	0	**0**	0.0	**0.0**	*0*	0	1	0	0	**1**	0.5	**0.6**	7
V. RETINOBLASTOMA	2	9	1	0	**12**	6.0	**6.8**	*89*	0	8	1	0	**9**	4.5	**4.9**	65
VI. RENAL TUMOURS	4	5	3	0	**12**	6.0	**6.6**	*89*	1	15	5	0	**21**	10.5	**11.3**	152
Nephroblastoma and other nonepithelial renal tumours	4	4	3	0	**11**	5.5	**6.1**	*82*	1	15	5	0	**21**	10.5	**11.3**	152
Renal carcinoma	0	0	0	0	**0**	0.0	**0.0**	*0*	0	0	0	0	**0**	0.0	**0.0**	0
Unspecified	0	1	0	0	**1**	0.5	**0.6**	*7*	0	0	0	0	**0**	0.0	**0.0**	0
VII. HEPATIC TUMOURS	0	1	0	0	**1**	0.5	**0.6**	*7*	2	4	0	0	**6**	3.0	**3.4**	44
Hepatoblastoma	0	1	0	0	**1**	0.5	**0.6**	*7*	2	3	0	0	**5**	2.5	**2.8**	36
Hepatic carcinoma	0	0	0	0	**0**	0.0	**0.0**	*0*	0	1	0	0	**1**	0.5	**0.6**	7

Unspecified	0	0	0	0	**0**	0.0	**0.0**	*0*	0	0	0	0	**0**	0.0	**0.0**	0
VIII. MALIGNANT BONE TUMOURS	0	0	1	3	**4**	2.0	**1.8**	*30*	0	0	3	6	**9**	4.5	**4.2**	69
Osteosarcoma	0	0	1	3	**4**	2.0	**1.8**	*30*	0	0	3	4	**7**	3.5	**3.3**	54
Chondrosarcoma	0	0	0	0	**0**	0.0	**0.0**	*0*	0	0	0	1	**1**	0.5	**0.5**	8
Ewing's tumour and related sarcomas	0	0	0	0	**0**	0.0	**0.0**	*0*	0	0	0	0	**0**	0.0	**0.0**	0
Other specified	0	0	0	0	**0**	0.0	**0.0**	*0*	0	0	0	0	**0**	0.0	**0.0**	0
Unspecified	0	0	0	0	**0**	0.0	**0.0**	*0*	0	0	0	1	**1**	0.5	**0.5**	8
IX. SOFT TISSUE SARCOMAS	3	1	0	3	**7**	3.5	**3.7**	*53*	0	0	3	1	**4**	2.0	**1.9**	30
Rhabdomyosarcoma	0	1	0	0	**1**	0.5	**0.6**	*7*	0	0	2	0	**2**	1.0	**1.0**	15
Fibrosarcoma, peripheral nerve sheath tumours and other fibrous tumours	2	0	0	0	**2**	1.0	**1.2**	*15*	0	0	0	0	**0**	0.0	**0.0**	0
Kaposi's sarcoma	0	0	0	0	**0**	0.0	**0.0**	*0*	0	0	0	0	**0**	0.0	**0.0**	0
Other specified	0	0	0	2	**2**	1.0	**0.9**	*15*	0	0	1	0	**1**	0.5	**0.5**	7
Unspecified	1	0	0	1	**2**	1.0	**1.0**	*15*	0	0	0	1	**1**	0.5	**0.5**	8
X. GERM CELL TUMOURS, TROPHOBLASTIC TUMOURS AND NEOPLASMS OF GONADS	1	2	0	0	**3**	1.5	**1.7**	*22*	1	1	2	2	**6**	3.0	**3.0**	45
Intracranial and intraspinal germ cell	0	0	0	0	**0**	0.0	**0.0**	*0*	1	0	0	0	**1**	0.5	**0.6**	7
malignant extracranial and extragonadal germ cell	1	0	0	0	**1**	0.5	**0.6**	*8*	0	0	0	0	**0**	0.0	**0.0**	0
Malignant gonadal germ cell	0	2	0	0	**2**	1.0	**1.1**	*15*	0	1	2	2	**5**	2.5	**2.4**	38
Gonadal carcinoma	0	0	0	0	**0**	0.0	**0.0**	*0*	0	0	0	0	**0**	0.0	**0.0**	0
Other and unspecified	0	0	0	0	**0**	0.0	**0.0**	*0*	0	0	0	0	**0**	0.0	**0.0**	0
XI. OTHER MALIGNANT EPITHELIAL NEOPLASMS AND MALIGNANT MELANOMA	0	0	1	4	**5**	2.5	**2.3**	*38*	0	0	0	4	**4**	2.0	**1.8**	31
Adrenocortical	0	0	0	0	**0**	0.0	**0.0**	*0*	0	0	0	0	**0**	0.0	**0.0**	0
Thyroid	0	0	0	0	**0**	0.0	**0.0**	*0*	0	0	0	0	**0**	0.0	**0.0**	0
Nasopharyngeal	0	0	1	2	**3**	1.5	**1.4**	*23*	0	0	0	0	**0**	0.0	**0.0**	0
Melanoma	0	0	0	0	**0**	0.0	**0.0**	*0*	0	0	0	0	**0**	0.0	**0.0**	0
Skin	0	0	0	0	**0**	0.0	**0.0**	*0*	0	0	0	0	**0**	0.0	**0.0**	0
Other and unspecified	0	0	0	2	**2**	1.0	**0.9**	*15*	0	0	0	4	**4**	2.0	**1.8**	31
XII. OTHER AND UNSPECIFIED NEOPLASMS	0	0	1	1	**2**	1.0	**0.9**	*15*	0	2	1	1	**4**	2.0	**2.0**	30
Other specified	0	0	0	1	**1**	0.5	**0.4**	*8*	0	0	0	0	**1**	0.5	**0.0**	0
Other unspecified	0	0	1	0	**1**	0.5	**0.5**	*7*	0	2	1	1	**3**	1.5	**2.0**	30
TOTAL	14	40	47	32	**133**	66.5	**67.8**	*995*	5	61	37	36	**139**	69.4	**70.9**	1032

Figure: Leading cancer diagnoses in children, Kingston and St. Andrew, 1983–2002, by gender and age group.

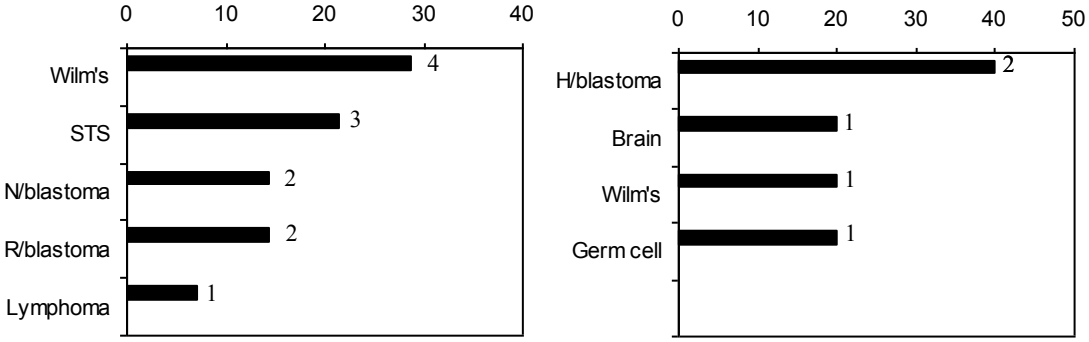
Each diagnosis is represented as a percentage of total cancers in that age group. Actual numbers appear to the right of the bars.

ALL CANCERS

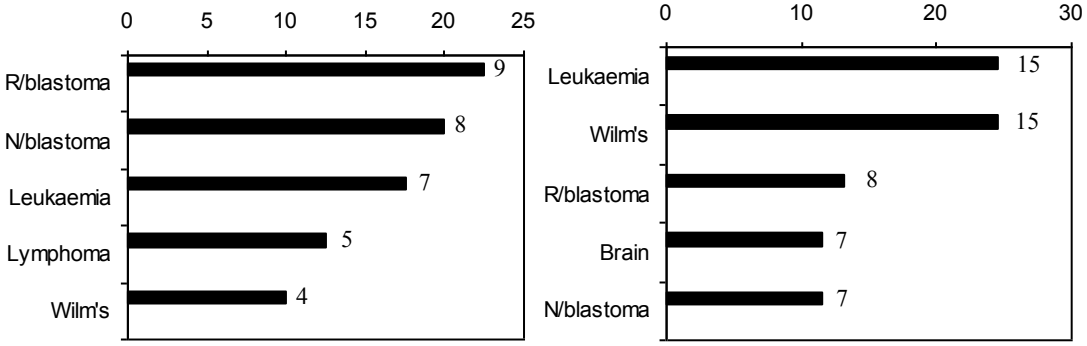
Incidence by age group and gender

Male	
< 1	14
1–4	40
5–9	47
10–14	32
Total	133
Female	
< 1	5
1–4	61
5–9	37
10–14	36
Total	139

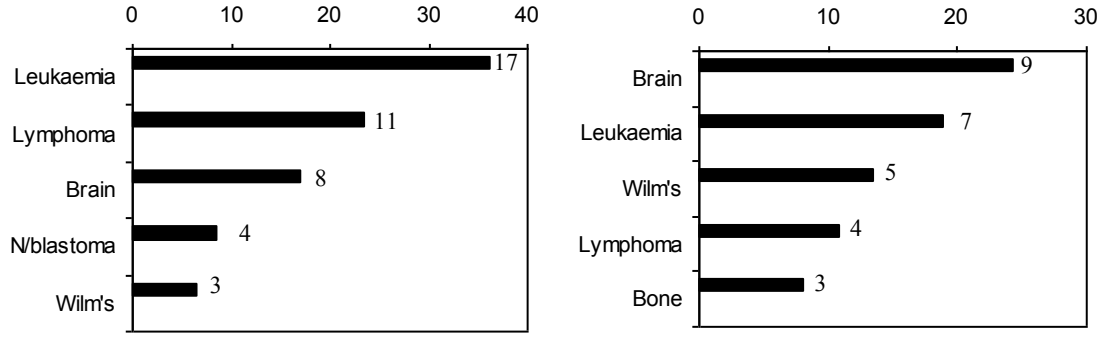
STS: Soft tissue sarcoma
H/blastoma: Hepatoblastoma
N/blastoma: Neuroblastoma
R/blastoma: Retinoblastoma
Wilm's: Nephroblastoma
Other epith: Other malignant epithelial neoplasms and malignant melanoma



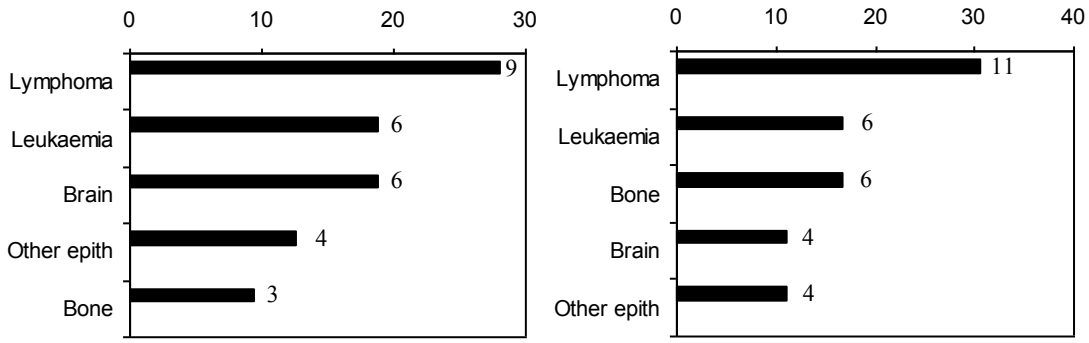
< 1 year



1–4 years



5–9 years



10–14 years

Male

Female