Cancer incidence and survival among New Zealand's adolescent and young adult population (15-29 years) 2000-2009

A supplementary analysis of New Zealand AYA cancer incidence and survival 2000-2009 to include those aged 25-29 years Prepared for the AYA Cancer Network Aotearoa

by

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Key Facts

The main finding of this additional analysis of AYA aged 25-29 years are largely consistent with the findings from the earlier analysis of AYA aged 15-24 years; namely the higher incidence of leukaemia in Pacific Peoples and gonadal germ cell tumours in Maori, the poor survival for those young people diagnosed with bone tumours, and the poorer overall cancer survival for Maori and Pacific AYA. In addition, this analysis highlights that young Maori women are at greater risk both of developing breast cancer and of dying from their disease.

- The overall age specific cancer incidence rate for 25-29 year olds is 588 per million. An average of 154 cancers are diagnosed among the 25-29 year group each year, which is approximately equal to that of the entire population aged 15-24 and greater than the number diagnosed in the entire New Zealand child population.
- The types of cancers affecting AYA vary considerably by age group. The most commonly diagnosed cancers in 15-19 year olds are lymphomas, leukaemias, and melanomas. For the 20-24 year population melanomas and carcinomas account for the greatest proportions of cancers diagnosed, followed by germ cell tumours. By 25-29 years, carcinomas (33% of all cases) are more common than melanomas (25%).
- Leukaemia incidence in Pacific Peoples aged 15-29 years is approximately double that of non-Maori/non-Pacific Peoples. Compared to non-Maori/non-Pacific Peoples, Maori have a significantly higher incidence of bone tumours, gonadal germ cell tumours and carcinomas, specifically breast carcinomas and carcinoma of the stomach. Melanoma is rarely diagnosed among Maori and Pacific AYA.
- Overall cancer relative survival for those aged 25-29 years was 95% at one year, 88% at three years, and 85% at five years. This was very similar to the survival reported for 20-24 year olds but significantly higher than survival for adolescents aged 15-19 years.
- For the 25-29 year age group, germ cell tumours and melanomas had very high five-year survival (98% and 95% respectively). Five-year survival for carcinomas overall was 82%, ranging from 33% for carcinomas of the trachea, bronchus & lung to 99% for thyroid carcinomas. The poorest survival was for those diagnosed with bone tumours (31%), which is consistent with the poor AYA bone tumour survival highlighted in the 15-24 year analysis, and less than half the 66% bone tumour survival reported by Australia for 25-29 year olds within a similar time period.
- Overall cancer survival in ages 25-29 was consistently higher each year of follow up for non-Maori/non-Pacific Peoples compared to both Maori and Pacific Peoples. Five-year relative survival was 88% in non-Maori/Pacific Peoples, significantly higher than the 77% for both Maori and Pacific Peoples. These results are consistent with the survival trends seen in 15-24 year olds.
- Five-year relative survival was significantly higher for non-Maori/Pacific AYA aged 15-29 years (86%) compared to Maori (73%) and Pacific Peoples (74%). This gap narrowed slightly when melanomas were excluded but a significant survival gap of 10% remained. Although not reaching statistical significance, there were noteworthy differences in five-year survival for Maori compared to non-Maori/non-Pacific Peoples for breast cancer (a 25% gap), leukaemias (20%), and bone tumours (18%).
- International comparisons again highlight New Zealand's poor survival for AYA diagnosed with bone tumours which was evident in the 15-24 analysis.¹ New Zealand's five-year relative survival for AYA diagnosed with breast cancer was 64%, while Australia,⁶ the United States,⁸ and Germany⁸ all reported survival of over 80% for a similar time period.

Background & Objectives

In 2013 an analysis of New Zealand cancer incidence and survival for AYA aged 15-24 years was conducted by the National Child Cancer Network on behalf of the AYA Cancer Advisory Group. The published report highlighted poor survival for bone tumours compared to those achieved internationally and poorer survival for AYA of Maori and Pacific Island descent compared to non-Maori/non-Pacific Peoples.¹ These findings were used to inform the AYA Cancer Advisory Group's recommendations to the Cancer Treatment Advisory Group and Ministry of Health. In December 2013 the Health Minister announced of the establishment of an AYA clinical network and the provision of additional funding to improve adolescent and young adult cancer services and survival outcomes.

While New Zealand's AYA cancer service specification currently defines AYA as 12-24 years there is no universal definition of the AYA age range and an upper bound of 29 years is often used in other published data. During a presentation to the AYA Cancer Advisory Group of a preliminary analysis, a request was made to also include data pertaining to those aged 25-29 years. Ethics approval was sought to extend the project to incorporate this upper age range and to request the additional registrations from the New Zealand Cancer Registry. However, due to time constraints the 25-29 year analysis was not able to be undertaken alongside the 15-24 year analysis which was already well underway. The project was later submitted and accepted as a University of Otago summer studentship project which was undertaken between November 2013 and January 2014.

The purpose of the AYA 25-29 year study is to identify the spectrum of cancers specifically affecting New Zealanders aged 25-29 years and to determine whether the ethnic disparities and poorer outcomes for some tumour groups observed in the 15-24 year population are also evident for this upper AYA age bracket. The period of analysis (2000-2009) is identical to the earlier analysis of 15-24 years, in order to allow the 25-29 year cohort to be reported separately and also combined to report incidence and survival for those aged 15-29 years.

This brief report has been prepared for the newly established AYA Cancer Network Aotearoa and contains a summary of the key findings and data tables from the summer studentship project. It is intended that the data will be utilised for a range of purposes such as providing accurate, up-to-date information to this age group about their risk of developing cancer, prioritizing the opening of new clinical trials, informing a review of the current age definition of AYA for access to AYA cancer services, and identifying future research priorities in order to improve the outcomes for young New Zealanders diagnosed with cancer.

Authorship and acknowledgements

This analysis expands on the AYA cancer incidence and survival report released in December 2013 which was authored by Kirsten Ballantine and Dr Michael Sullivan and funded by the National Child Cancer Network.

The AYA 25-29 year analysis was accepted as a University of Otago Christchurch School of Medicine summer studentship project and sponsored by the Cancer Society of New Zealand, Canterbury-West Coast Division and Cancer Society Rangiora Group.

The project was completed in January 2014 by Victoria Utley, supervised by Dr Ruth Spearing (Haematologist), Kirsten Ballantine (Research Analyst, National Child Cancer Network), John Carson (AYA Keyworker), Dr Kate Gardner (Medical Oncologist) and Dr Rob Corbett (Paediatric Oncologist).

All incidence calculations were completed by Ma Yi (biostatistician, Canterbury District Health Board). Survival analyses were conducted by Jonathan Williman (biostatistician, University of Otago), utilising Stata® syntax written for the earlier AYA study by Vladimir Stevonovic (Principal Technical Specialist, Ministry of Health).

Methodology

A comprehensive description of the research methodology and the AYA Classification Scheme can be found in the original AYA (15-24 years) incidence and survival and report.¹ A brief summary is included below:

- Diagnostic and demographic information for all cancers diagnosed in those aged 25-29 years between January 1 2000 and December 31 2009 were provided by the New Zealand Cancer Registry.
- Date and cause of death was obtained from the National Mortality Collection, with follow up to the 31st December 2010.
- All primary malignant cancers were identified and re-coded according to the AYA Cancer Classification Scheme² using the site-recode scheme developed by Surveillance, Epidemiology End Results (SEER).³
- Age-specific incidence and relative survival estimates were calculated using SAS® and Stata® software respectively. Expected survival data was calculated according to the Ederer II method using life-tables for the total New Zealand resident population. These tables are produced by Statistics New Zealand and based on 2006 census data.
- Following standard cancer research methodology, all cases informed by autopsy or death certificate only or with a survival of zero days were included in incidence counts but excluded from the survival analyses.
- All ethnicities were classified according to a prioritised ethnicity system; Maori, Pacific Peoples, and 'all others' (referred to throughout this report as 'non-Maori/non-Pacific Peoples').

1 AYA (including 25-29 years) cancer incidence

1.1 **Overall AYA cancer incidence**

Between 2000 and 2009 there were an average of 154 primary malignant tumours diagnosed each year among New Zealanders aged 25-29 years. There was considerable year on year variation; the number of cases informed to the New Zealand Cancer Registry ranged from 131 in 2009 to 180 in the year 2000.

The number of young adults aged 25-29 who are diagnosed with cancer each year is approximately equal to the annual number of cancers diagnosed among those aged 15-24 years (161) and greater than the average number of new diagnoses in the entire child population for the 2000-2009 period (133). Overall cancer incidence for 25-29 year olds was 588 per million per year. Of the entire 15-29 year cohort, approximately half (49%) of all cancer cases were diagnosed in those aged 25-29 years, despite this age group comprising of less than a third (31%) of the total AYA population.

Table 1.1Average number of cancer cases per year by age group

Age Group	Population base ^a	Average cases per year	Age-specific per y	incidence per million year (95% CI)
15-19 years	301 864	69.0	228.6	(211.5 - 245.6)
20-24 years	281 209	91.6	325.7	(304.6 - 346.8)
25-29 years	262 175	154.1	587.8	(558.4 - 617.1)
TOTAL 15-29 years	845 248	314.7	368.0 ^b	(355.1 - 380.8)

^a An average of the estimated New Zealand resident population as at June 30 for the years 2000-2009, Statistics New Zealand

^bAge standardised to the New Zealand 2006 census population

1.2 Cancer incidence by age group and AYA diagnostic group and subgroup

The overall cancer incidence for 25-29 year olds of 588 per 1,000,000 (i.e. 58.8 per 100,000) which New Zealand recorded between 2000 and 2009 is comparable to the 60.0 per 100,000 reported by SEER for the 2001 to 2010 period⁴ and Canada from 2002-2006 (510 per million).⁵ A notable exception is the incidence of melanoma among NZ AYA at 14.5 per 100,000 compared to 9.1 per 100,000 reported by SEER.⁴

For the combined 15-29 year group, cancer incidence is 368 per million. This rate is similar to that reported by Canada for the 2002-2006 period (347.2 per million)⁵ but considerably lower than Australia's reported incidence for AYA cancer of 419 per million for the 2003-2007 period.⁶ Incidence of melanoma among New Zealand AYA (145 per million) is higher than for Australia (108 per million).⁶

Table 1.2 shows the incidence of cancer by age quintile. Incidence of gonadal germ cell tumours, melanoma, and virtually all types of carcinoma is significantly higher for AYA aged 25-29 years compared to those aged 15-19 and 20-24 years. The older AYA group also have a significantly higher incidence of non-Hodgkin lymphomas and astrocytomas when compared to the adolescent group. In contrast, the incidence of acute lymphoid leukaemia (ALL), osteosarcoma, and ewing tumours is significantly lower for 25-29 year olds compared to the adolescent population.

Table 1.2AYA cancer incidence (per million) by age group and AYAdiagnostic group and selected subgroups, New Zealand, 2000-2009

AVA diagnostic groun/subground	15	-19 years	20	-24 years	25	25-29 years		15-29 years andardised) ^b
	IR	95% CI	IR	95% CI	IR	95% CI	IR	95% CI
1. Leukaemias	33.8	(27.2-40.4)	27.7	(21.6-33.9)	26.0	(19.8-32.1)	29.4	(25.8-33.1)
1.1 Acute lymphoid leukaemia	18.2	(13.4-23.0)	10.0	(6.3-13.7)	6.9	(3.7-10.0)	12.1	(9.7-14.4)
1.2 Acute myeloid leukaemia	11.3	(7.5-15.1)	13.9	(9.5-18.2)	11.4	(7.4-15.5)	12.2	(9.8-14.5)
1.3 Chronic myeloid leukaemia	2.0	(0.4-3.6)	2.5	(0.7-4.3)	6.1	(3.1-9.1)	3.4	(2.2-4.6)
2. Lymphomas	45.1	(37.5-52.6)	42.0	(34.4-49.5)	64.1	(54.4-73.8)	49.7	(45.0-54.4)
2.1 Non-Hodgkin lymphoma	15.9	(11.4-20.4)	14.2	(9.8-18.6)	31.7	(24.9-38.5)	20.0	(17.0-23.0)
2.2 Hodgkin lymphoma	29.2	(23.1-35.2)	27.7	(21.6-33.9)	32.4	(25.5-39.3)	29.7	(26.0-33.3)
3. CNS tumours	16.6	(12.0-21.2)	16.0	(11.3-20.7)	24.0	(18.1-30.0)	18.6	(15.7-21.5)
3.1 Astrocytoma	5.0	(2.5-7.5)	9.3	(5.7-12.8)	13.4	(8.9-17.8)	8.9	(6.9-10.9)
3.2 Other gliomas	4.0	(1.7-6.2)	2.1	(0.4-3.8)	4.6	(2.0-7.2)	3.5	(2.3-4.8)
3.3 Ependymoma	1.7	(0.2-3.1)	2.5	(0.7-4.3)	2.3	(0.5-4.1)	2.1	(1.1-3.1)
3.4 Medulloblastoma & other PNET	3.6	(1.5-5.8)	1.4	(0.0-2.8)	0.8	(0.0-1.8)	2.1	(1.1-3.0)
4. Osseous & chondromatous neoplasms	27.2	(21.3-33.0)	8.2	(4.8-11.5)	6.5	(3.4-9.6)	14.7	(12.1-17.3)
4.1 Osteosarcoma	12.6	(8.6-16.6)	3.6	(1.4-5.8)	2.7	(0.7-4.7)	6.6	(4.9-8.4)
4.3 Ewing tumour	12.6	(8.6-16.6)	4.3	(1.9-6.7)	1.9	(0.2-3.6)	6.6	(4.9-8.4)
5. Soft tissue sarcomas	12.6	(8.6-16.6)	15.7	(11.0-20.3)	13.0	(8.6-17.3)	13.7	(11.2-16.2)
5.1 Fibromatous neoplasms	1.3	(0.0-2.6)	3.6	(1.4-5.8)	1.9	(0.2-3.6)	2.2	(1.2-3.3)
5.2 Rhabdomyosarcoma	3.6	(1.5-5.8)	1.4	(0.0-2.8)	0.8	(0.0-1.8)	2.1	(1.1-3.0)
5.3 Other soft tissue sarcoma	7.6	(4.5-10.7)	10.7	(6.9-14.5)	10.3	(6.4-14.2)	9.4	(7.4-11.5)
6. Germ cell & trophoblastic neoplasms	28.5	(22.5-34.5)	54.8	(46.1-63.4)	96.1	(84.3-108.0)	57.4	(52.3-62.5)
6.1 Germ cell & trophoblastic neoplasms of gonads	24.9	(19.2-30.5)	50.9	(42.5-59.2)	92.7	(81.0-104.3)	53.7	(48.8-58.6)
6.2 Germ cell & trophoblastic neoplasms of non-gonadal sites	3.6	(1.5-5.8)	3.9	(1.6-6.2)	3.4	(1.2-5.7)	3.7	(2.4-5.0)
7. Melanoma and skin carcinomas	30.8	(24.6-37.1)	74.7	(64.6-84.8)	144.6	(130.0-159.1)	79.3	(73.4-85.3)
7.1 Melanoma	30.8	(24.6-37.1)	74.3	(64.3-84.4)	144.6	(130.0-159.1)	79.2	(73.3-85.2)
8. Carcinomas	28.5	(22.5-34.5)	74.3	(64.3-84.4)	196.1	(179.1-213.0)	93.7	(87.2-100.1)
8.1 Thyroid carcinoma	8.3	(5.0-11.5)	21.7	(16.3-27.1)	41.6	(33.8-49.4)	22.7	(19.5-25.9)
8.2 Other carcinoma of head and neck	5.0	(2.5-7.5)	6.8	(3.7-9.8)	12.6	(8.3-16.9)	7.8	(6.0-9.7)
8.4 Carcinoma of breast	-	-	6.4	(3.4-9.4)	38.5	(31.0-46.0)	13.6	(11.2-16.1)
8.5 Carcinoma of genitourinary tract	6.0	(3.2-8.7)	18.1	(13.2-23.1)	64.8	(55.1-74.6)	27.6	(24.1-31.1)
8.5.3 Carcinoma of gonads	4.0	(1.7-6.2)	3.9	(1.6-6.2)	10.7	(6.7-14.6)	6.0	(4.3-7.6)
8.5.4 Carcinoma of cervix and uterus	0.7	(0.0-1.6)	11.7	(7.7-15.7)	45.0	(36.9-53.1)	17.6	(14.8-20.4)
8.6 Carcinoma of gastro-intestinal tract	7.3	(4.2-10.3)	17.8	(12.9-22.7)	33.2	(26.2-40.2)	18.5	(15.6-21.4)
8.6.1 Carcinoma of colon and rectum	2.7	(0.8-4.5)	10.3	(6.6-14.1)	25.9	(19.8-32.1)	12.1	(9.8-14.5)
8.6.2 Carcinoma of stomach	3.3	(1.3-5.4)	5.0	(2.4-7.6)	5.0	(2.3-7.7)	4.4	(3.0-5.8)
9. Misc. specified neoplasms	4.6	(2.2-7.1)	9.3	(5.7-12.8)	10.3	(6.4-14.2)	7.9	(6.0-9.7)
9.2 Other specified and embryonal tumours, NOS	3.3	(1.3-5.4)	7.8	(4.6-11.1)	9.5	(5.8-13.3)	6.7	(4.9-8.4)
10. Unspecified (malig.) neoplasms	1.0	(0.0-2.1)	3.2	(1.1-5.3)	7.3	(4.0-10.5)	3.6	(2.3-4.9)
Total cancers diagnosed	228.6	211.5-245.6	325.7	304.6-346.8	587.8	558.4 -617.1	368.0	355.1-380.8

^a Incidence rates (IR) and corresponding confidence intervals for AYA diagnostic subgroups 1.4, 3.5, 3.6, 4.2, 7.2 8.3, 8.7, and 9.1 have been censored due to the small number of cases recorded within the ten-year study period. ^b Age standardised to the 2006 New Zealand census population

1.3 Average number of cancers diagnosed annually by age group and AYA diagnostic group and subgroup

From an AYA service delivery planning perspective and for prioritising the opening of new clinical trials it is useful to simply consider the average number of new cancers diagnosed annually among AYA according to each diagnostic group/subgroup.

For the 25-29 year group there are around 51 carcinomas, 38 melanomas, 25 germ cell tumours, 17 lymphomas, 8 leukaemias, 6 malignant central nervous system tumours, and 5 bone/soft tissue sarcomas diagnosed each year.

By diagnostic subgroup there 24 gonadal germ cell tumours diagnosed each year, 17 genitourinary carcinomas, 11 thyroid cancers, and 9 gastroutinary tract carcinomas. There are around 10 breast cancers diagnosed in older AYAs (25-29 years) each year compared to less than two cases among those less than 25 years of age.

Although Hodgkin lymphomas are more common than non-Hodgkin lymphomas for the younger AYA population, for the 25-29 year group there are approximately the same number of Hodgkin and non-Hodgkin lymphomas diagnosed in the 25-29 year age group annually.

Table 1.3Average number of AYA cancers diagnosed annually by age groupand AYA diagnostic group/subgroup, New Zealand, 2000-2009

	Average number of cases per year by age group									
AYA diagnostic group	12-14	15-19	20-24	25-29	12-29	15-29				
	years	years	years	years	years	years				
1 Leukaemias	5.5	10.2	7.8	6.8	30.3	24.8				
1.1 Acute lymphoid leukaemias	3.6	5.5	2.8	1.8	13.7	10.1				
1.2 Acute myeloid leukaemias	1.7	3.4	3.9	3.0	12.0	10.3				
1.3 Chronic myeloid leukaemias	-	0.6	0.7	1.6	2.9	2.9				
1.4 Other and unspecified leukaemias	0.2	0.7	0.4	0.4	1.7	1.5				
2 Lymphomas	4.2	13.6	11.8	16.8	46.4	42.2				
2.1 Non-Hodgkin lymphomas	2.3	4.8	4.0	8.3	19.4	17.1				
2.2 Hodgkin lymphomas	1.9	8.8	7.8	8.5	27.0	25.1				
3 Central nervous system & intracranial/intraspinal neoplasms	4.5	5.0	4.5	6.3	20.3	15.8				
3.1 Astrocytomas	2.0	1.5	2.6	3.5	9.6	7.6				
3.2 Other gliomas	0.7	1.2	0.6	1.2	3.7	3.0				
3.3 Ependymomas	0.4	0.5	0.7	0.6	2.2	1.8				
3.4 Medulloblastoma and other PNET	0.4	1.1	0.4	0.2	2.1	1.7				
3.5 Other specified intracranial and intraspinal neoplasms	0.9	0.1	0.2	0.2	1.4	0.5				
3.6 Unspecified intracranial and intraspinal neoplasms	0.1	0.6	-	0.6	1.3	1.2				
4 Osseous & chondromatous neoplasms	3.1	8.2	2.3	1.7	15.3	12.2				
4.1 Osteosarcomas	1.5	3.8	1.0	0.7	7.0	5.5				
4.2 Chondrosarcomas	0.1	0.2	0.1	0.3	0.7	0.6				
4.3 Ewing tumors	1.4	3.8	1.2	0.5	6.9	5.5				
4.4 Other specified and unspecified bone tumors	0.1	0.4	-	0.2	0.7	0.6				

		Aver	age number	of cases pe	r year	
AYA diagnostic group	12-14 years	15-19 years	20-24 years	25-29 years	12-29 years	15-29 years
5 Soft tissue sarcomas	1.6	3.8	4.4	3.4	13.2	11.6
5.1 Fibromatous neoplasms	0.1	0.4	1.0	0.5	2.0	1.9
5.2 Rhabdomyosarcomas	0.5	1.1	0.4	0.2	2.2	1.7
5.3 Other soft tissue sarcomas	1.0	2.3	3.0	2.7	9.0	8.0
6 Germ cell and trophoblastic neoplasms	1.6	8.6	15.4	25.2	50.8	49.2
6.1 Germ cell and trophoblastic neoplasms of gonads	0.7	7.5	14.3	24.3	46.8	46.1
6.2 Germ cell and trophoblastic neoplasms of non-gonadal sites	0.9	1.1	1.1	0.9	4.0	3.1
7 Melanoma and skin carcinomas	1.1	9.3	21.0	37.9	69.3	68.2
7.1 Melanoma	1.1	9.3	20.9	37.9	69.2	68.1
7.2 Skin carcinomas	-	-	0.1	-	0.1	0.1
8 Carcinomas	1.4	8.6	20.9	51.4	82.3	80.9
8.1 Thyroid carcinomas	0.3	2.5	6.1	10.9	19.8	19.5
8.2 Other carcinomas of head and neck	0.7	1.5	1.9	3.3	7.4	6.7
8.3 Carcinomas of trachea, bronchus, and lung	0.2	0.4	0.4	0.6	1.6	1.4
8.4 Carcinomas of breast	-	-	1.8	10.1	11.9	11.9
8.5 Carcinomas of genitourinary tract	0.1	1.8	5.1	17.0	24.0	23.9
8.5.1 Carcinoma of kidney	0.1	0.1	0.5	1.6	2.3	2.2
8.5.2 Carcinoma of bladder	-	0.2	0.2	0.4	0.8	0.8
8.5.3 Carcinoma of gonads	-	1.2	1.1	2.8	5.1	5.1
8.5.4 Carcinoma of cervix and uterus	-	0.2	3.3	11.8	15.3	15.3
8.5.5 Carcinoma of other and ill-def sites	-	0.1	•	0.4	0.5	0.5
8.6 Carcinomas of gastrointestinal tract	0.1	2.2	5.0	8.7	16.0	15.9
8.6.1 Carcinoma of colon and rectum	0.1	0.8	2.9	6.8	10.6	10.5
8.6.2 Carcinoma of stomach	-	1.0	1.4	1.3	3.7	3.7
8.6.3 <i>Carcinoma of liver and intra-hepatic</i> bile ducts	-	0.2	0.3	0.3	0.8	0.8
8.6.4 Carcinoma of pancreas	-	0.2	0.4	0.1	0.7	0.7
8.6.5 Carcinoma of other and ill-def sites	-			0.2	0.2	0.2
8.7 Carcinomas of other and ill-def sites	-	0.2	0.6	0.8	1.6	1.6
9 Miscellaneous specified neoplasms, NOS	0.7	1.4	2.6	2.7	7.4	6.7
9.1 Other paediatric and embryonal tumors, NOS	-	0.4	0.4	0.2	1.0	1.0
9.2 Other specified and embryonal tumors, NOS	-	1.0	2.2	2.5	5.7	5.7
10 Unspecified malignant neoplasms	-	0.3	0.9	1.9	3.1	3.1
10.1 Unspecified malignant neoplasms	-	0.3	0.9	1.9	3.1	3.1
TOTAL	23.7	69.0	91.6	154.1	338.4	314.7

Table 1.3 (cont.)Average number of AYA cancers diagnosed annually by age groupand AYA diagnostic group/subgroup, New Zealand, 2000-2009

1.4 Distribution of cancers by age group

Carcinomas are the most common type of cancer affecting 25-29 year olds (51 per year, 33% of total cancers diagnosed), followed by melanomas (38, 25%) and germ cell tumours (25, 16%). Nearly three quarters (74%) of all cancers diagnosed in 25-29 year olds came from one of these three diagnostic groups.

The predominant cancers are substantially different to those diagnosed in the younger AYA population; lymphomas and leukaemias are the two most commonly diagnosed cancers in 15-19 year olds, but are overtaken by carcinomas, melanoma and germ cell tumours with increasing age.



Figure 1.4a Cancers diagnosed in young adults aged 25-29, New Zealand 2000-2009













Figure 1.4e Cancers diagnosed in young adults aged 20-24, New Zealand, 2000-2009





1.5 Cancer incidence among AYA 25-29 years and relative risk by gender

There are no significant differences in the average annual number of cancers diagnosed in male (70) and female (84) 25-29 year olds. The most common cancers for males are germ cell tumours (24 per year, 33% of all cancers diagnosed), followed by melanomas (14, 20%), carcinomas (10, 14%), and lymphomas (9, 13%). In females, carcinomas make up half of all cancers diagnosed (41 per year, 49%), followed by melanomas (24, 29%); these two groups alone accounting for nearly 80% of all cancers diagnosed. Incidence of gonadal germ cell tumours is significantly greater in males (relative risk, RR=18.6). Conversely, males are at lower risk of developing melanomas (RR=0.6) and carcinomas (RR=0.3), notably thyroid carcinomas (RR=0.2) and carcinomas of the genitourinary tract (RR=0.1).



Table 1.5AYA 25-29 years cancer incidence (per million) and relative risk bygender and AYA diagnostic group and selected subgroups, New Zealand, 2000-2009

		Male		Female		
AYA diagnostic group/selected subgroups	Cases per year	Age- standardised incidence (per million)	Cases per year	Age- standardised incidence (per million)	Relat to fen	ive risk male nale (95% CI)
1. Leukaemias	4.3	33.6	2.5	18.6	1.8	(1.1-3.0)
1.1 Acute lymphoid leukaemia	1.1	8.6	0.7	5.2	a	a
1.2 Acute myeloid leukaemia	1.9	14.9	1.1	8.2	1.8	(0.9-3.8)
1.3 Chronic myeloid leukaemia	1.1	8.6	0.5	3.7	а	а
1.4 Other and unspecified leukaemia	0.2	1.6	0.2	1.5	а	а
2. Lymphomas	9.2	71.9	7.6	56.6	1.3	(0.9-1.7)
2.1 Non-Hodgkin lymphoma	5.0	39.1	3.3	24.6	1.6	(1.0-2.5)
2.2 Hodgkin lymphoma	4.2	32.8	4.3	32.0	1.0	(0.7-1.6)

^a relative risk was not calculated due to the small number of cases for one or both gender groups

Table 1.5 (cont.)AYA 25-29 years cancer incidence (per million) and relative risk by
gender and AYA diagnostic group and selected subgroups, New Zealand, 2000-2009

		Male		Female		
AYA diagnostic group/selected subgroups	Cases per year	Age- standardised incidence (per million)	Cases per year	Age- standardised incidence (per million)	Relat to fen	ive risk male nale (95% CI)
3. CNS tumours	3.9	30.5	2.4	17.9	1.7	(1.0-2.8)
3.1 Astrocytoma	2.5	19.5	1.0	7.4	2.6	(1.3-5.4)
3.2 Other gliomas	0.5	3.9	0.7	5.2	a	a
3.3 Ependymomas	0.4	3.1	0.2	1.5	a	a
3.4 Medulloblastoma and other PNET	-	-	0.2	1.5	а	а
3.5 Other specified intracranial and intraspinal neoplasms	0.1	0.8	0.1	0.7	a	a
3.6 Unspecified intracranial and intraspinal neoplasms	0.4	3.1	0.2	1.5	a	a
4. Osseous & chondromatous neoplasms	1.2	9.4	0.5	3.7	а	а
4.1 Osteosarcoma	0.6	4.7	0.1	0.7	a	а
4.2 Chondrosarcoma	0.2	1.6	0.1	0.7	а	a
4.3 Ewing tumour	0.4	3.1	0.1	0.7	а	а
4.4 Other specified and unspecified bone tumours	-	-	0.2	1.5	а	a
5. Soft tissue sarcomas	2.0	15.6	1.4	10.4	1.5	(0.8-3.0)
5.1 Fibromatous neoplasms	0.4	3.1	0.1	0.7	a	а
5.2 Rhabdomyosarcomas	0.2	1.6	-	-	а	a
5.3 Other soft tissue sarcomas	1.4	10.9	1.3	9.7	1.1	(0.5-2.4)
6. Germ cell & trophoblastic neoplasms	23.5	183.8	1.7	12.7	14.5	(9.9-21.2)
6.1 Germ cell and trophoblastic neoplasms of gonads	23.0	179.8	1.3	9.7	18.6	(12.3-28.0)
6.2 Germ cell and trophoblastic neoplasms of non- gonadal sites	0.5	3.9	0.4	3.0	a	a
7. Melanoma and skin carcinomas	13.8	107.9	24.1	179.5	0.6	(0.5-0.7)
7.1 Melanoma	13.8	107.9	24.1	179.5	0.6	(0.5-0.7)
8. Carcinomas	10.0	78.2	41.4	308.3	0.3	(0.2-0.3)
8.1 Thyroid carcinoma	1.7	13.3	9.2	68.5	0.2	(0.1-0.3)
8.2 Other carcinoma of head and neck	1.8	14.1	1.5	11.2	1.3	(0.6-2.5)
8.3 Carcinomas of trachea, bronchus, and lung	0.2	1.6	0.4	3.0	а	а
8.4 Carcinoma of breast	-	-	10.1	75.2	a	а
8.5 Carcinoma of genitourinary tract	1.5	11.7	15.5	115.4	0.1	(0.1-0.2)
8.6 Carcinoma of gastro-intestinal tract	4.5	35.2	4.2	31.3	1.1	(0.7-1.7)
8.7 Carcinomas of other and ill-def sites	0.3	2.3	0.5	3.7	a	a
9. Miscellaneous specified neoplasms, NOS	1.2	9.4	1.5	11.2	0.8	(0.4-1.8)
9.1 Other paediatric and embryonal tumours, NOS	0.2	1.6	-	-	a	a
9.2 Other specified and embryonal tumours, NOS	1.0	7.8	1.5	11.2	0.7	(0.3-1.6)
10. Unspecified malignant neoplasms	0.9	7.0	1.0	7.4	a	a
10.1 Unspecified malignant neoplasms	0.9	7.0	1.0	7.4	a	a
Overall cancer incidence (95% CI)	70.0	547.4 (506.8-587.9)	84.1	626.3 (583.9-668.6)	0.9	(0.8-1.0)

^a relative risk was not calculated due to the small number of cases for one or both gender groups

Overall AYA cancer incidence and relative risk by gender

Within the 15-29 year age group, males have a significantly higher incidence of blood cancers, specifically ALL (relative risk, RR=1.7) and non-Hodgkin lymphomas (RR=1.7). Males also have a greater incidence of malignant astrocytoma (RR=1.9), osteosarcoma (RR=2.0), and gonadal germ cell tumours (RR=8.6). Females in this age group are at greater risk of developing melanoma (RR=0.6) and most carcinomas (RR=0.3).

Table 1.6AYA (15-29 years) cancer incidence (per million) and relative riskby gender and AYA diagnostic group and subgroup, New Zealand, 2000-2009

		Male		Female				
AYA diagnostic group/selected subgroups		Age- standardised incidence (per million)	Cases per year	Age- standardised incidence (per million)	Re mal (lative risk e to female 95% CI)		
1. Leukaemias	14.7	34.9	10.1	24.0	1.5	(1.1-1.9)		
1.1 Acute lymphoid leukaemia	6.3	15.1	3.8	9.1	1.7	(1.1-2.5)		
1.2 Acute myeloid leukaemia	5.5	13.0	4.8	11.4	1.1	(0.8-1.7)		
1.3 Chronic myeloid leukaemia	2.2	5.1	0.7	1.6	a	а		
1.4 Other and unspecified leukaemia	0.7	1.7	0.8	1.9	a	а		
2. Lymphomas	23.3	54.7	18.9	44.6	1.2	(1.0-1.5)		
2.1 Non-Hodgkin lymphoma	10.7	25.1	6.4	15.0	1.7	(1.2-2.3)		
2.2 Hodgkin lymphoma	12.6	29.7	12.5	29.6	1.0	(0.8-1.3)		
3. CNS tumours	8.7	20.4	7.1	16.8	1.2	(0.9-1.7)		
3.1 Astrocytoma	5.0	11.7	2.6	6.1	1.9	(1.2-3.0)		
3.2 Other gliomas	1.2	2.8	1.8	4.3	0.7	(0.3-1.4)		
3.3 Ependymomas	1.0	2.3	0.8	1.9	a	a		
3.4 Medulloblastoma and other PNET	0.7	1.7	1.0	2.4	a	a		
4. Osseous & chondromatous neoplasms	7.6	18.2	4.6	11.1	1.6	(1.1-2.4)		
4.1 Osteosarcoma	3.7	8.9	1.8	4.4	2.0	(1.2-3.6)		
4.3 Ewing tumour	3.2	7.7	2.3	5.6	1.4	(0.8-2.3)		
5. Soft tissue sarcomas	6.1	14.4	5.5	13.1	1.1	(0.8-1.6)		
5.1 Fibromatous neoplasms	0.7	1.6	1.2	2.9	a	a		
5.2 Rhabdomyosarcomas	1.3	3.1	0.4	1.0	a	а		
5.3 Other soft tissue sarcomas	4.1	9.7	3.9	9.2	1.1	(0.7-1.6)		
6. Germ cell & trophoblastic neoplasms	43.3	100.5	5.9	14.0	7.2	(5.7-9.0)		
6.1 Germ cell and trophoblastic neoplasms of gonads	41.4	96.0	4.7	11.2	8.6	(6.7-11.0)		
6.2 Germ cell and trophoblastic neoplasms of non- gonadal sites	1.9	4.5	1.2	2.8	1.6	(0.8-3.3)		
7. Melanoma and skin carcinomas	26.0	60.4	42.2	98.3	0.6	(0.5-0.7)		
8. Carcinomas	18.2	42.2	62.7	145.5	0.3	(0.3-0.3)		
8.1 Thyroid carcinoma	3.4	7.9	16.1	37.5	0.2	(0.2-0.3)		
8.2 Other carcinoma of head and neck	3.3	7.7	3.4	8.0	1.0	(0.6-1.5)		
8.3 Carcinomas of trachea, bronchus, and lung	0.3	0.7	1.1	2.6	a	а		
8.4 Carcinoma of breast			11.9	27.3	a	а		
8.5 Carcinoma of genitourinary tract	1.9	4.3	22.0	50.9	0.1	(0.1-0.1)		
8.6 Carcinoma of gastro-intestinal tract	8.5	19.8	7.4	17.2	1.2	(0.8-1.6)		
8.7 Carcinomas of other and ill-def sites	0.8	1.9	0.8	1.9	a	а		
9. Miscellaneous specified neoplasms, NOS	3.1	7.3	3.6	8.5	0.9	(0.5-1.4)		
9.2 Other specified and embryonal tumours, NOS	2.5	5.8	3.2	7.5	0.8	(0.5-1.3)		
10. Unspecified malignant neoplasms	1.7	3.9	1.4	3.2	1.2	(0.6-2.5)		
Overall cancer incidence (95% CI)	152.7	356.9	162.0	379.1	0.9	(0.9-1.0)		

^a relative risk was not calculated due to the small number of cases for one or both gender groups

1.7 Cancer incidence among AYA 25-29 years by ethnicity

By ethnicity, cancer incidence among 25-29 year olds ranges from 532 per million for Pacific Peoples to 727 per million for Maori. Overall cancer incidence among non-Maori/non-Pacific Peoples aged 25-29 years is 626 per million. There are many notable differences in incidence according to ethnicity. Nearly one third of all cancers diagnosed among non-Maori/non-Pacific Peoples in the 25-29 year population are melanomas (37 cases per year, 195 per million). However, melanomas are significantly less likely to be diagnosed in Maori (1 case per year, 34 per million) or Pacific Peoples (<1 case per year, 6 per million).

Compared to non-Maori/Pacific Peoples, Maori have a significantly higher incidence of gonadal germ cell tumours (207 per million c.f. 88 per million) and carcinomas (307 per million c.f. 190 per million), specifically breast carcinomas (79 per million, c.f. 36 per million) and genitourinary carcinomas (97 per million c.f. 67 per million).

Although not reaching statistical significance, leukaemia incidence in Pacific Peoples is approximately double that of both non-Maori/non-Pacific Peoples and Maori (54 per million c.f. 26 per million in both Maori and non-Maori/non-Pacific Peoples).

Table 1.7Cancer incidence among AYA 25-29 years by ethnicity and AYAdiagnostic group and subgroup, New Zealand, 2000-2009

AYA diagnostic group/selected	Maori				Pacific 1	Peoples	Non-Maori /non- Pacific Peoples		
subgroups	Cases per year	I (pe	ncidence er million)	Cases per year	Incidence (per million)		Cases per year	Incidence (per million)	
1. Leukaemias	1.0	26.2	(10.0-42.5)	0.9	53.8	(18.7-89.0)	4.9	26.1	(18.8-33.4)
1.1 Acute lymphoid leukaemia	0.2	5.3	(0.0-12.5)	0.2	12.0	(0.0-28.5)	1.4	7.5	(3.6 -11.4)
1.2 Acute myeloid leukaemia	0.6	15.7	(3.2-28.3)	0.4	23.9	(0.5-47.4)	2.0	10.7	(6.0-15.3)
1.3 Chronic myeloid leukaemia	0.1	2.6	(0.0-7.8)	0.3	17.9	(0.0-38.2)	1.2	6.4	(2.8-10.0)
1.4 Other and unspecified leukaemia	0.1	2.6	(0.0-7.8)	-	-	-	0.3	1.6	(0.0-3.4)
2. Lymphomas	2.2	57.7	(33.6-81.9)	0.9	53.8	(18.7-89.0)	13.7	73.0	(60.8-85.3)
2.1 Non-Hodgkin lymphoma	1.4	36.7	(17.5-56.0)	0.5	29.9	(3.7-56.1)	6.4	34.1	(25.8-42.5)
2.2 Hodgkin lymphoma	0.8	21.0	(6.5-35.5)	0.4	23.9	(0.5-47.4)	7.3	38.9	(30.0-47.8)
3. CNS tumours	1.3	34.1	(15.6-52.7)	0.8	47.8	(14.7-81.0)	4.2	22.4	(15.6-29.2)
3.1 Astrocytoma	0.7	18.4	(4.8-32.0)	0.5	29.9	(3.7-56.1)	2.3	12.3	(7.3-17.3)
3.2 Other gliomas	0.4	10.5	(0.2-20.8)	0.1	6.0	(0.0-17.7)	0.7	3.7	(1.0-6.5)
3.3 Ependymomas	0.1	2.6	(0.0-7.8)	-	-	-	0.5	2.7	(0.3-5.0)
3.4 Medulloblastoma and other PNET	0.1	2.6	(0.0-7.8)	-	-	-	0.1	0.5	(0.0-1.6)
3.5 Other specified intracranial and intraspinal neoplasms	-	-	-	0.1	6.0	(0.0-17.7)	0.1	0.5	(0.0-1.6)
3.6 Unspecified intracranial and intraspinal neoplasms	-	-	-	0.1	6.0	(0.0-17.7)	0.5	2.7	(0.3-5.0)

Table 1.7 (cont.) Cancer incidence among AYA 25-29 years by ethnicity and AYA diagnostic group and subgroup, New Zealand, 2000-2009

AVA diagnostic group (calcoted		Ma	ıori		Pacific	Peoples	Non	/ Maori- Peo	′ non-Pacific ples
subgroups	Cases per year	І (р	ncidence er million)	Cases per year	I (p	ncidence er million)	Cases per year	І (р	ncidence er million)
4. Osseous & chondromatous neoplasms	0.6	15.7	(3.2-28.3)	-	-	-	1.1	5.9	(2.4-9.3)
4.1 Osteosarcoma	0.2	5.3	(0.0-12.5)	-	-	-	0.5	2.7	(0.3-5.0)
4.2 Chondrosarcoma	0.1	2.6	(0.0-7.8)	-	-	-	0.2	1.1	(0.0- 2.5)
4.3 Ewing tumour	0.3	7.9	(0.0-16.8)	-	-	-	0.2	1.1	(0.0-2.5)
4.4 Other specified and unspecified bone tumours	-	-	-	-	-	-	0.2	1.1	(0.0-2.5)
5. Soft tissue sarcomas	0.7	18.4	(4.8-32.0)	0.2	12.0	(0.0-28.5)	2.5	13.3	(8.1-18.6)
5.1 Fibromatous neoplasms	0.1	2.6	(0.0-7.8)	-	-	-	0.4	2.1	(0.0-4.2)
5.2 Rhabdomyosarcomas	-	-	-	-	-	-	0.2	1.1	(0.0-2.5)
5.3 Other soft tissue sarcomas	0.6	15.7	(3.2-28.3)	0.2	12.0	(0.0-28.5)	1.9	10.1	(5.6-14.7)
6. Germ cell & trophoblastic neoplasms	7.9	207.3	(161.6-253.0)	0.8	47.8	(14.7-81.0)	16.5	88.0	(74.5-101.4)
6.1 Germ cell and trophoblastic neoplasms of gonads	7.7	202.1	(156.9-247.2)	0.8	47.8	(14.7-81.0)	15.8	84.2	(71.1-97.4)
6.2 Germ cell and trophoblastic neoplasms of non-gonadal sites	0.2	5.3	(0.0-12.5)	-	-	-	0.7	3.7	(1.0-6.5)
7. Melanoma and skin carcinomas	1.3	34.1	(15.6-52.7)	0.1	6.0	(0.0-17.7)	36.5	194.6	(174.6-214.5)
7.1 Melanoma	1.3	34.1	(15.6-52.7)	0.1	6.0	(0.0-17.7)	36.5	194.6	(174.6-214.5)
8. Carcinomas	11.7	307.0	(251.4-362.7)	4.1	245.1	(170.1-320.2)	35.6	189.8	(170.1-209.5)
8.1 Thyroid carcinoma	2.6	68.2	(42.0-94.5)	1.4	83.7	(39.9-127.6)	6.9	36.8	(28.1-45.5)
8.2 Other carcinoma of head and neck	0.3	7.9	(0.0-16.8)	0.2	12.0	(0.0-28.5)	2.8	14.9	(9.4-20.5)
8.3 Carcinomas of trachea, bronchus, and lung	0.1	2.6	(0.0-7.8)	-	-	-	0.5	2.7	(0.3-5.0)
8.4 Carcinoma of breast	3.0	78.7	(50.6-106.9)	0.4	23.9	(0.5-47.4)	6.7	35.7	(27.2-44.3)
8.5 Carcinoma of genitourinary tract	3.7	97.1	(65.8-128.4)	0.8	47.8	(14.7-81.0)	12.5	66.6	(55.0-78.3)
8.6 Carcinoma of gastro-intestinal tract	1.9	49.9	(27.4-72.3)	1.1	65.8	(26.9-104.6)	5.7	30.4	(22.5-38.3)
8.7 Carcinomas of other and ill-def sites	0.1	2.6	(0.0-7.8)	0.2	12.0	(0.0-28.5)	0.5	2.7	(0.3-5.0)
9. Miscellaneous specified neoplasms, NOS	0.6	15.7	(3.2-28.3)	1.0	59.8	(22.7-96.9)	1.1	5.9	(2.4-9.3)
9.1 Other paediatric and embryonal tumours NOS	-	-	-	-	-	-	0.2	1.1	(0.0-2.5)
9.2 Other specified and embryonal tumours, NOS	0.6	15.7	(3.2-28.3)	1.0	59.8	(22.7-96.9)	0.9	4.8	(1.7-7.9)
10. Unspecified malignant	0.4	10.5	(0.2-20.8)	0.1	6.0	(0.0-17.7)	1.4	7.5	(3.6-11.4)
10.1 Unspecified malignant neoplasms	0.4	10.5	(0.2-20.8)	0.1	6.0	(0.0-17.7)	1.4	7.5	(3.6-11.4)
Overall cancer incidence (95% CI)	27.7	726.9	(641.3-812.5)	8.9	532.1	(421.6-642.7)	117.5	626.3	(590.5-662.1)

Distribution of cancers among AYA by ethnicity

Figure 1.8a Cancers diagnosed in Maori

Carcinomas and melanomas combined account for around half (51%) of all cancers diagnosed in non-Maori/non-Pacific AYA, considerably less than the proportion of cancers diagnosed in Maori (35%) and Pacific Peoples (38%). Leukaemias account for 17% of cancers diagnosed in Pacific Peoples, compared to only 8% and 7% of those diagnosed in Maori and non-Maori/non-Pacific AYA, respectively. Malignant germ cell tumours account for approximately one in four cancers diagnosed in Maori.



AYA 15-29 years, New Zealand, 2000-2009

Figure 1.5b Cancers diagnosed in Pacific





1.8

1.9 Overall AYA cancer incidence by ethnicity

Table 1.9 shows cancer incidence for the 15-29 year population by prioritised ethnicity. Pacific Peoples have a significantly higher incidence of leukaemia compared to Non-Maori/non-Pacific Peoples (59.2 per million c.f. 26.9 per million). By leukaemia diagnostic subgroup, incidence of acute myeloid leukaemia (AML) was significantly higher than for non-Maori/non-Pacific Peoples (29.6 per million c.f. 10.2 per million), while the incidence of ALL was almost double that for non-Maori/non-Pacific Peoples (22.6 per million c.f. 11.5 per million). Although not reaching statistical significance, the incidence of thyroid cancer among Pacific People (41.8 per million) was close to double that of non-Maori/non-Pacific Peoples (22.1 per million).

There was a significantly higher incidence of bone tumours among Maori (28.0 per million) compared to Non-Maori/non-Pacific Peoples (12.2 per million), particularly Ewing tumours. The incidence of gonadal germ cell gonadal tumours was also significantly higher for Maori (107.6 per million); this was twice that of non-Maori/non-Pacific (52.9 per million) and nearly four times that for Pacific Peoples (27.9 per million). Compared to non-Maori/non-Pacific Peoples, Maori had a higher incidence of carcinoma of the stomach (20.1 per million c.f. 1.3 per million) and breast cancer (24.4 per million c.f. 12.8 per million).

With an incidence of 90.5 per million, Non-Maori/non-Pacific Peoples were significantly less likely to be diagnosed with a carcinoma than Maori (127.7 per million) or Pacific Peoples (127.1 per million). However, non-Maori/non-Pacific AYA had a much greater risk of developing melanoma. Only five cases among Pacific Peoples and only 20 cases among Maori were diagnosed within the 10 year study period compared to 657 among non-Maori/non-Pacific Peoples

AYA diagnostic group/selected	Maori				Pacific 1	Peoples	Non-Maori / non-Pacific Peoples		
subgroups	Cases per year	І (р	ncidence er million)	Cases per year	Incidence (per million)		Cases per year		ncidence er million)
1. Leukaemias	4.8	34.4	(24.7-44.2)	3.4	59.2	(39.3-79.1)	16.6	26.9	(22.8-31.0)
1.1 Acute lymphoid leukaemia	1.7	12.2	(6.4-18.0)	1.3	22.6	(10.3-34.9)	7.1	11.5	(8.8-14.2)
1.2 Acute myeloid leukaemia	2.3	16.5	(9.8-23.2)	1.7	29.6	(15.5-43.7)	6.3	10.2	(7.7-12.7)
1.3 Chronic myeloid leukaemia	0.4	2.9	(0.1-5.7)	0.4	7.0	(0.1-13.8)	2.1	3.4	(2.0-4.9)
1.4 Other and unspecified leukaemia	0.4	2.9	(0.1-5.7)	•		-	1.1	1.8	(0.7-2.8)
2. Lymphomas	5.7	40.9	(30.3-51.5)	2.8	48.8	(30.7-66.8)	33.7	54.6	(48.8-60.5)
2.1 Non-Hodgkin lymphoma	2.9	20.8	(13.2-28.4)	1.6	27.9	(14.2-41.5)	12.6	20.4	(16.9-24.0)
2.2 Hodgkin lymphoma	2.8	20.1	(12.6-27.5)	1.2	20.9	(9.1-32.7)	21.1	34.2	(29.6-38.8)
3. CNS tumours	2.4	17.2	(10.3-24.1)	1.2	30.4	(13.2-47.5)	12.2	19.8	(16.3-23.3)
3.1 Astrocytoma	1.1	7.9	(3.2-12.6)	0.6	10.5	(2.1-18.8)	5.9	9.6	(7.1-12.0)
3.2 Other gliomas	0.7	5.0	(1.3-8.7)	0.1	1.7	(0.0-5.2)	2.2	3.6	(2.1-5.1)
3.3 Ependymomas	0.2	1.4	(0.0-3.4)			-	1.6	2.6	(1.3-3.9)
3.4 Medulloblastoma and other PNET	0.3	2.2	(0.0-4.6)	0.1	1.7	(0.0-5.2)	1.3	2.1	(1.0-3.3)
3.5 Other specified intracranial and intraspinal neoplasms	•	•	-	0.1	1.7	(0.0-5.2)	0.4	0.7	(0.0-1.3)
3.6 Unspecified intracranial and intraspinal neoplasms	0.1	0.7	(0.0-2.1)	0.3	5.2	(0.0-11.1)	0.8	1.3	(0.4-2.2)

Table 1.9Cancer incidence (per million) among AYA 15-29 years by ethnicityand AYA diagnostic group and subgroup, New Zealand, 2000-2009

Table 1.9 (cont.)Cancer incidence (per million) among AYA 15-29 years by ethnicityand AYA diagnostic group and subgroup, New Zealand, 2000-2009

		Ma	ıori		Pacific	Peoples	Non-Maori / non-Pacific Peoples			
A Y A diagnostic group/selected subgroups	Cases per year	ן (ף	Incidence er million)	Cases per year	I (p	ncidence er million)	Cases per year	1 (p	ncidence er million)	
4. Osseous & chondromatous neoplasms	3.9	28.0	(19.2-36.8)	0.8	19.7	(6.0-33.3)	7.5	12.2	(9.4-14.9)	
4.1 Osteosarcoma	1.4	10.0	(4.8-15.3)	0.3	5.2	(0.0-11.1)	3.8	6.2	(4.2-8.1)	
4.2 Chondrosarcoma	0.1	0.7	(0.0-2.1)	0.1	1.7	(0.0-5.2)	0.4	0.7	(0.0-1.3)	
4.3 Ewing tumour	2.3	16.5	(9.8-23.2)	0.4	7.0	(0.1-13.8)	2.8	4.5	(2.9-6.2)	
4.4 Other specified and unspecified bone tumours	0.1	0.7	(0.0-2.1)			-	0.5	0.8	(0.1-1.5)	
5. Soft tissue sarcomas	3.0	21.5	(13.8-29.2)	0.9	15.7	(5.4-25.9)	7.7	12.5	(9.7-15.3)	
5.1 Fibromatous neoplasms	0.6	4.3	(0.9-7.8)	0.1	1.7	(0.0-5.2)	1.2	2.0	(0.8-3.1)	
5.2 Rhabdomyosarcomas	0.6	4.3	(0.9-7.8)	0.1	1.7	(0.0-5.2)	1.0	1.6	(0.6-2.6)	
5.3 Other soft tissue sarcomas	1.8	12.9	(7.0-18.9)	0.7	12.2	(3.2-21.2)	5.5	8.9	(6.6-11.3)	
6. Germ cell & trophoblastic neoplasms	15.0	107.6	(90.4-124.8)	1.6	27.9	(14.2-41.5)	32.6	52.9	(47.1-58.6)	
6.1 Germ cell and trophoblastic neoplasms of gonads	14.1	101.1	(84.4-117.8)	1.4	24.4	(11.6-37.2)	30.6	49.6	(44.1-55.2)	
6.2 Germ cell and trophoblastic neoplasms of non-gonadal sites	0.9	6.5	(2.2-10.7)	0.2	3.5	(0.0-8.3)	2.0	3.2	(1.8-4.7)	
7. Melanoma	2.0	14.4	(8.1-20.6)	0.5	8.7	(1.1-16.3)	65.7	106.5	(98.4-114.7)	
7.1 Melanoma	2.0	14.4	(8.1-20.6)	0.5	8.7	(1.1-16.3)	65.6	106.4	(98.2-114.5)	
7.2 Skin carcinomas			-			-	0.1	0.2	(0.0-0.5)	
8. Carcinomas	17.8	127.7	(108.9-146.4)	7.3	127.1	(98.0-156.3)	55.8	90.5	(83.0-98.0)	
8.1 Thyroid carcinoma	3.5	25.1	(16.8-33.4)	2.4	41.8	(25.1-58.5)	13.6	22.1	(18.3-25.8)	
8.2 Other carcinoma of head and neck	1.1	7.9	(3.2-12.6)	0.5	8.7	(1.1-16.3)	5.1	8.3	(6.0-10.5)	
8.3 Carcinomas of trachea, bronchus, and lung	0.1	0.7	(0.0-2.1)	0.2	3.5	(0.0-8.3)	1.1	1.8	(0.7-2.8)	
8.4 Carcinoma of breast	3.4	24.4	(16.2-32.6)	0.6	10.5	(2.1-18.8)	7.9	12.8	(10.0-15.6)	
8.5 Carcinoma of genitourinary tract	5.2	37.3	(27.2-47.4)	1.6	27.9	(14.2-41.5)	17.1	27.7	(23.6-31.9)	
8.5.3 Carcinoma of gonads	1.1	7.9	(3.2-12.6)	0.8	13.9	(4.3-23.6)	3.2	5.2	(3.4-7.0)	
8.5.4 Carcinoma of cervix and uterus	3.4	24.4	(16.2-32.6)	0.4	7.0	(0.1-13.8)	11.5	18.7	(15.2-22.1)	
8.6 Carcinoma of gastro-intestinal tract	4.2	30.1	(21.0-39.2)	1.7	29.6	(15.5-43.7)	10.0	16.2	(13.0-19.4)	
8.6.1 Carcinoma of colon and rectum	1.2	8.6	(3.7-13.5)	1.4	24.4	(11.6-37.2)	7.9	12.8	(10.0-15.6)	
8.6.2 Carcinoma of stomach	2.8	20.1	(12.6-27.5)	0.1	1.7	(0.0-5.2)	0.8	1.3	(0.4-2.2)	
8.7 Carcinomas of other and ill-def sites	0.3	2.2	(0.0-4.6)	0.3	5.2	(0.0-11.1)	1.0	1.6	(0.6-2.6)	
9. Miscellaneous specified neoplasms, NOS	1.6	11.5	(5.9-17.1)	1.4	24.4	(11.6-37.2)	3.7	6.0	(4.1-7.9)	
9.1 Other paediatric and embryonal tumours, NOS	0.2	1.4	(0.0-3.4)	0.1	1.7	(0.0-5.2)	0.7	1.1	(0.3-2.0)	
9.2 Other specified and embryonal tumours, NOS	1.4	10.0	(4.8-15.3)	1.3	22.6	(10.3-34.9)	3.0	4.9	(3.1-6.6)	
10. Unspecified malignant neoplasms	0.6	4.3	(0.9-7.8)	0.3	8.7	(0.0-18.5)	2.2	3.6	(2.1-5.1)	
Overall cancer incidence (95% CI)	56.8	407.4	(373.9-440.9)	20.2	351.7	(303.2-400.2)	237.7	385.4	(369.9-400.9)	

2 AYA (including 25-29 years) cancer survival

2.1 Overall AYA cancer survival by age group

Overall relative survival for the New Zealand 25-29 year population for the 2000 to 2009 period was 94.5% at one year, 88.2% at three years, 85.4% at five years, and 81.2% at ten years. Survival for 25-29 year olds was very similar to the survival reported for 20-24 year olds but significantly higher than survival for adolescents aged 15-19 years at each year of follow up. For the 15-29 year population as a whole, survival was 93.2% at one year, 85.4% at three years, 82.9% at five years, and 79.4% at 10 years.

Table 2.1Cancer survival by age group, New Zealand, 2000-2009

Years since		15-19	years		20-24	years		25-29	years	Total 15-29 years			
diag- nosis	n	relati (959	ve survival % CI)	n	relative survival (95% CI)		n	relati (95	ive survival % CI)	n	relativ (95%	ve survival % CI)	
1	687	90.2	(87.7-92.2)	909	93.4	(91.5-94.8)	1 536	94.5	(93.2-95.5)	3 1 3 2	93.2	(92.3-94.0)	
2	619	82.6	(79.5-85.3)	848	89.5	(87.3-91.4)	1 450	90.9	(89.3-92.2)	2 917	88.7	(87.5-89.8)	
3	492	77.5	(74.0-80.6)	751	86.4	(84.0-88.6)	1 272	88.2	(86.4-89.8)	2 515	85.4	(84.0-86.6)	
4	406	76.5	(73.0-79.7)	638	84.9	(82.3-87.2)	1 106	86.4	(84.5-88.1)	2 1 5 0	83.8	(82.4-85.1)	
5	342	75.1	(71.4-78.4)	549	84.6	(82.0-86.9)	940	85.4	(83.3-87.1)	1 831	82.9	(81.5-84.3)	
6	282	75.2	(71.5-78.4)	474	83.9	(81.1-86.3)	790	83.7	(81.5-85.6)	1 546	81.9	(80.4-83.3)	
7	233	74.5	(70.7-77.9)	395	83.5	(80.7-85.9)	647	82.7	(80.4-84.8)	1 275	81.2	(79.6-82.6)	
8	187	74.1	(70.2-77.6)	314	82.3	(79.2-85.0)	517	81.9	(79.5-84.0)	1 018	80.3	(78.6-81.9)	
9	130	73.4	(69.3-77.1)	227	227 82.4 (79.3-85.0)		390	81.5	(79.0-83.7)	747	80.0	(78.3-81.6)	
10	81	71.0	(65.7-75.7)	137	82.4	(79.4-85.1)	274	81.2	(78.5-83.5)	492	79.4	(77.5-81.2)	

2.2 Cancer survival among AYA 25-29 years by AYA diagnostic group and subgroup and by gender

For the 25-29 year age quintile, germ cell tumours and melanomas had very high five-year relative survival (97.9% and 94.5% respectively), while five-year survival for central nervous system tumours (59.8%) and leukaemias (67.8%) was considerably lower. The poorest survival was for those diagnosed with bone tumours (31.2%). This finding was consistent with what was seen in the 15-24 year old population (five-year relative survival=48.5%)¹ and provides further evidence of the need for additional research and resources to improve the outcomes for those AYA diagnosed with this particular class of tumour.

Five-year survival for all lymphomas was 83.1%, however survival was significantly higher for Hodgkin (89.5%) compared to Non-Hodgkin lymphoma (76.2%). Five-year survival for carcinomas overall was 81.7% although this varied considerably according to diagnostic subgroup, ranging from 99.3% for thyroid carcinoma to 33.4% for carcinoma of the trachea, bronchus & lung. There were no significant differences in cancer survival for 25-29 year olds according to gender.

Five year survival for 25-29 year olds diagnosed in New Zealand between 2000 and 2009 compared to Australia for the 2004-2010 period were similar for most diagnostic subgroups. However, New Zealand's survival (83.1%, 95%CI: 75.9-88.3) was significantly lower than Australia for lymphomas (92.0%, 95% CI: 90.4-93.3) and most dramatically for bone tumours, where survival was less than half (31.2%, 95% CI: 9.1-56.8) that of Australia (65.5%, 95%CI: 59.6-70.8).6

Table 2.2 Cancer survival among AYA 25-29 years by AYA diagnostic group and subgroup and by gender, New Zealand, 2000-2009

AYA diagnostic group/selected]	Male 25.	29 years	F	emale 25	5-29 years	Total 25-29 years			
subgroups	n	5-year r (elative survival 95% CI)	n	5-year r (elative survival 95% CI)	n	5-year relative survival (95% CI)		
1. Leukaemias	43	71.5	(54.9-82.9)	25	62.2	(39.8-78.4)	68	67.8	(54.7-77.8)	
1.1 Acute lymphoid leukaemia	11	81.2	(42.6-95.3)	7	71.6	(25.9-92.2)	18	77.7	(50.5-91.2)	
1.2 Acute myeloid leukaemia	19	63.5	(38.1-80.8)	11	41.8	(13.3-68.7)	30	54.9	(34.9-71.1)	
1.3 Chronic myeloid leukaemia	11	71.1	(33.9-90.0)	5	100.2	a	16	80.2	(49.8-93.4)	
1.4 Other & unspecified leukaemia	2	100.5	a	2	50.1	(0.6-91.2)	4	66.9	(5.4-94.8)	
2. Lymphomas	91	84.5	(74.4-90.9)	75	81.3	(69.7-88.9)	166	83.1	(75.9-88.3)	
2.1 Non-Hodgkin lymphoma	49	81.0	(66.3-89.9)	32	68.8	(49.6-81.9)	81	76.2	(65.1-84.3)	
2.2 Hodgkin lymphoma	42	88.5	(71.6-95.9)	43	90.4	(72.8-97.0)	85	89.5	(78.8-95.0)	
3. CNS tumours	38	58.1	(38.8-73.2)	24	61.6	(36.5-79.3)	62	59.8	(45.0-71.9)	
3.1 Astrocytoma	24	45.7	(22.6-66.2)	10	35.8	(8.4-65.4)	34	42.8	(24.1-60.4)	
3.2 Other gliomas	5	100.5	а	7	100.2	a	12	100.3	а	
3.3 Ependymomas	4	75.4	(12.9-96.5)	2	33.4	(0.0-87.1)	6	65.1	(17.1-90.3)	
3.4 Medulloblastoma & other PNET	-	-	-	2	100.2	a	2	100.2	a	
3.5 Other specified intracranial and intraspinal neoplasms	1	100.6	a	1	0.0	a	2	50.3	(0.6-91.5)	
3.6 Unspecified intracranial and intraspinal neoplasms	4	50.2	(5.8-84.9)	2	100.2	a	6	66.9	(19.5-90.7)	

^a Confidence intervals cannot be calculated in instances where there were either no deaths or no survivors within the period ^b Five-year relative survival could not be calculated as no cases had a full five-years of follow up

Table 2.2 (cont.)Cancer survival among AYA 25-29 years by AYA diagnostic groupand subgroup and by gender, New Zealand, 2000-2009

AYA diagnostic group/selected]	Male 25	-29 years	F	emale 25	5-29 years	Total 25-29 years			
subgroups	n	5-year r (elative survival 95% CI)	n	5-year r (elative survival 95% CI)	n	5-year r (elative survival 95% CI)	
4. Osseous & chondromatous neoplasms	12	40.6	(11.1-69.2)	5	b	b	17	31.2	(9.1-56.8)	
4.1 Osteosarcoma	6	35.9	(1.0-79.7)	1	0.0	a	7	30.8	(1.2-73.3)	
4.2 Chondrosarcoma	2	50.2	(0.6-91.5)	1	b	b	3	66.9	(5.4-94.9)	
4.3 Ewing tumour	4	25.1	(0.9-66.9)	1	0.0	a	5	20.1	(0.8-58.5)	
4.4 Other specified and unspecified bone tumours	-	-	-	2	b	b	2	b	b	
5. Soft tissue sarcomas	20	89.3	(62.3-97.6)	14	61.9	(30.9-82.3)	34	77.9	(58.6-89.0)	
5.1 Fibromatous neoplasms	4	100.5	а	1	100.2	a	5	100.4	а	
5.2 Rhabdomyosarcomas	2	50.2	(0.6-91.5)	-	-	-	2	50.2	(0.6-91.5)	
5.3 Other soft tissue sarcomas	14	93.3	(59.4-99.4)	13	58.7	(26.9-80.6)	27	76.1	(53.8-88.8)	
6. Germ cell & trophoblastic neoplasms	235	97.8	(94.5-99.3)	17	100.2	a	252	97.9	(94.9-99.3)	
6.1 Germ cell and trophoblastic neoplasms of gonads	230	97.7	(94.4-99.2)	13	100.2	a	243	97.8	(94.7-99.3)	
6.2 Germ cell and trophoblastic neoplasms of non-gonadal sites	5	100.5	a	4	100.2	a	9	100.4	a	
7. Melanoma and skin carcinomas	137	90.8	(83.9-94.9)	241	96.6	(93.0-98.4)	378	94.5	(91.4-96.5)	
7.1 Melanoma	137	90.8	(83.9-94.9)	241	96.6	(93.0-98.4)	378	94.5	(91.4-96.5)	
8. Carcinomas	100	77.5	(67.6-84.7)	414	82.7	(78.3-86.4)	514	81.7	(77.7-85.0)	
8.1 Thyroid carcinoma	17	100.5	a	92	99.1	(92.5-100.1)	109	99.3	(93.7-100.1)	
8.2 Other carcinoma of head and neck	18	94.6	(65.3-99.6)	15	91.1	(50.9-98.9)	33	93.1	(74.2-98.5)	
8.3 Carcinomas of trachea, bronchus, and lung	2	b	b	4	25.1	(0.9-66.7)	6	33.4	(4.6-67.8)	
8.4 Carcinoma of breast	-	-	-	101	64.6	(53.0-74.1)	101	64.6	(53.0-74.1)	
8.5 Carcinoma of genitourinary tract	15	86.1	(54.2-96.7)	155	92.8	(87.1-96.0)	170	92.2	(86.7-95.5)	
8.6 Carcinoma of gastro-intestinal tract	45	62.8	(46.2-75.6)	42	52.4	(32.9-68.8)	87	57.1	(44.1-68.2)	
8.7 Carcinomas of other and ill-def sites	3	33.5	(0.9-77.8)	5	80.1	(20.4-97.1)	8	62.7	(23.0-86.3)	
9. Miscellaneous specified neoplasms, NOS	12	83.7	(48.4-96.0)	15	72.3	(41.6-88.8)	27	77.5	(56.4-89.4)	
9.1 Other paediatric and embryonal tumours, NOS	2	b	b	-	-	-	2	b	b	
9.2 Other specified and embryonal tumours, NOS	10	90.4	(47.5-99.0)	15	72.3	(41.6-88.8)	25	79.7	(57.5-91.2)	
10. Unspecified malignant	9	67.0	(28.3-88.3)	9	66.0	(26.9-87.7)	18	66.2	(39.3-83.4)	
10.1 Unspecified malignant neonlasms	9	67.0	(28.3-88.3)	9	66.0	(26.9-87.7)	18	66.2	(39.3-83.4)	
Overall cancer survival (95% CI)	697	86.2	(83.2-88.7)	839	84.7	(81.9-87.1)	1 536	85.4	(83.3-87.1)	
Overall cancer survival excluding melanomas (95% CI)	560	85.0	(81.6-87.9)	598	79.7	(75.9-83.0)	1 158	82.3	(79.8-84.5)	

2.3 Overall AYA cancer survival by AYA diagnostic group and subgroup

and gender

There were few gender differences in survival. For the carcinomas diagnostic group overall, five-year relative survival was significantly higher for females (84.0%) than for males (74.5). However, there are considerable gender differences in the types of carcinomas diagnosed among AYA. Nearly half of all carcinomas diagnosed in males were carcinomas of the gastrointestinal tract, which had poorer survival (58.4%) compared to the most commonly diagnosed carcinomas in female AYA; namely thyroid carcinoma (99.6%) and carcinoma of the genitourinary tract (92.5%).

Thyroid carcinoma (99.7), germ cell tumours (95.4), melanoma (94.1), Hodgkin lymphoma (92.8), genitourinary carcinoma (92.3%), and 'other carcinoma of the head and neck' (91.6%) all had five-year survival of over 90%. In contrast, survival of less than 60% was seen for rhabdomyosarcoma (32.3%) ewing tumours (40.8%), osteosarcoma (49.6), carcinoma of the gastrointestinal tract (55.6%), astrocytomas (53.9%) and other gliomas (56.4%).

While five year relative survival for AYA diagnosed with AML (66.3%) is comparable to the survival for children 0-14 years (69.2%), for AYA diagnosed with ALL, survival is significantly poorer (65.9% c.f. 89.4%).7

AYA diagnostic group/selected]	Male 15	-29 years	F	emale 15	5-29 years	Total 15-29 years			
subgroups	n	5-year relative survival (95% CI)		n	5-year r (5-year relative survival (95% CI)		5-year relative survival (95% CI)		
1. Leukaemias	147	65.2	(56.2-72.9)	101	72.3	(61.8-80.3)	248	68.1	(61.5-73.9)	
1.1 Acute lymphoid leukaemia	63	62.6	(48.1-74.1)	38	70.7	(53.2-82.7)	101	65.9	(55.1-74.7)	
1.2 Acute myeloid leukaemia	55	63.6	(48.3-75.5)	48	69.3	(52.5-81.2)	103	66.3	(55.4-75.1)	
1.3 Chronic myeloid leukaemia	22	75.0	(49.1-89.1)	7	100.2	a	29	80.9	(59.4-91.9)	
1.4 Other and unspecified leukaemia	7	71.8	(26.0-92.5)	8	73.1	(27.7-92.7)	15	72.2	(41.3-88.9)	
2. Lymphomas	231	86.9	(81.3-90.9)	188	86.7	(80.2-91.2)	419	86.8	(82.7-89.9)	
2.1 Non-Hodgkin lymphoma	105	79.2	(69.6-86.1)	63	75.2	(61.9-84.4)	168	77.7	(70.2-83.5)	
2.2 Hodgkin lymphoma	126	93.2	(85.6-97.0)	125	92.5	(84.6-96.5)	251	92.8	(87.8-95.9)	
3. CNS tumours	85	58.3	(45.9-68.8)	68	62.6	(48.7-73.7)	153	60.4	(51.4-68.3)	
3.1 Astrocytoma	49	51.9	(35.5-66.0)	25	57.0	(34.1-74.6)	74	53.9	(40.8-65.3)	
3.2 Other gliomas	11	61.4	(26.1-83.9)	17	53.4	(25.4-75.1)	28	56.4	(34.5-73.6)	
3.3 Ependymomas	10	79.2	(38.3-94.7)	8	82.0	(24.0-97.4)	18	79.9	(48.5-93.5)	
3.4 Medulloblastoma and other PNET	7	50.3	(10.2-81.5)	10	79.1	(38.8-94.5)	17	68.0	(38.8-85.5)	
3.5 Other specified intracranial and intraspinal neoplasms	3	100.5	a	2	0.0	a	5	60.3	(12.6-88.6)	
3.6 Unspecified intracranial and intraspinal neoplasms	5	60.3	(12.6-88.6)	6	83.5	(27.4-97.7)	11	72.9	(37.2-90.5)	

Cancer survival for AYA 15-29 years by AYA diagnostic group and Table 2.3 subgroup and gender, New Zealand, 2000-2009

^a Confidence intervals cannot be calculated in instances where there were either no deaths or no survivors within the period ^b Five-year relative survival could not be calculated as no cases had a full five-years of follow up

Table 2.3 (cont.) Cancer survival for AYA 15-29 years by AYA diagnostic group and subgroup and gender, New Zealand, 2000-2009

AYA diagnostic group/selected]	Male 15-	29 years	F	emale 15	5-29 years	Total 15-29 years			
subgroups	n	5-year r (elative survival 95% CI)		5-year r (elative survival 95% CI)		5-year r (elative survival 95% CI)	
4. Osseous & chondromatous neoplasms	75	43.8	(31.8-55.2)	46	50.7	(34.5-64.8)	121	46.4	(36.8-55.5)	
4.1 Osteosarcoma	36	46.0	(27.3-62.9)	18	55.0	(29.7-74.5)	54	49.6	(34.6-62.9)	
4.2 Chondrosarcoma	5	80.4	(20.5-97.4)	1	b	b	6	83.7	(27.4-97.9)	
4.3 Ewing tumour	32	33.5	(17.9-49.9)	23	50.6	(26.6-70.5)	55	40.8	(27.2-53.9)	
4.4 Other specified and unspecified bone tumours	2	b	b	4	25.1	(0.9-66.7)	6	30.1	(3.0-66.4)	
5. Soft tissue sarcomas	61	69.7	(55.5-80.3)	55	64.3	(49.2-76.0)	116	67.2	(57.1-75.4)	
5.1 Fibromatous neoplasms	7	100.5	а	12	91.8	(54.0-99.0)	19	95.0	(68.3-99.6)	
5.2 Rhabdomyosarcomas	13	30.9	(9.5-55.7)	4	45.1	(3.3-83.1)	17	32.3	(12.0-54.9)	
5.3 Other soft tissue sarcomas	41	78.8	(61.3-89.1)	39	57.6	(39.4-72.2)	80	68.4	(56.0-78.0)	
6. Germ cell & trophoblastic neoplasms	432	95.2	(92.5-97.1)	59	96.7	(86.9-99.3)	491	95.4	(92.9-97.1)	
6.1 Germ cell and trophoblastic neoplasms of gonads	413	96.3	(93.7-97.9)	47	95.8	(83.8-99.1)	460	96.2	(93.8-97.8)	
6.2 Germ cell and trophoblastic neoplasms of non-gonadal sites	19	73.9	(47.8-88.5)	12	100.2	a	31	83.9	(65.1-93.1)	
7. Melanoma and skin carcinomas	259	90.9	(86.4-94.1)	422	96.1	(93.6-97.7)	681	94.1	(91.9-95.8)	
7.1 Melanoma	258	90.9	(86.3-94.0)	422	96.1	(93.6-97.7)	680	94.1	(91.9-95.8)	
8. Carcinomas	182	74.5	(67.3-80.5)	625	84.0	(80.6-86.9)	807	81.9	(78.8-84.5)	
8.1 Thyroid carcinoma	34	100.5	а	161	99.6	(95.7-100.1)	195	99.7	(96.5-100.2)	
8.2 Other carcinoma of head and neck	33	87.3	(68.9-95.4)	34	96.1	(74.5-99.6)	67	91.6	(80.5-96.6)	
8.3 Carcinomas of trachea, bronchus, and lung	3	b	b	10	70.1	(32.9-89.4)	13	69.4	(37.4-87.4)	
8.4 Carcinoma of breast	-	-	-	119	63.5	(53.0-72.3)	119	63.5	(53.0-72.3)	
8.5 Carcinoma of genitourinary tract	19	89.3	(62.7-97.6)	220	92.5	(88.0-95.4)	239	92.3	(87.9-95.1)	
8.6 Carcinoma of gastro-intestinal tract	85	58.4	(46.7-68.4)	73	52.9	(39.3-64.8)	158	55.6	(46.7-63.6)	
8.7 Carcinomas of other and ill-def sites	8	50.3	(15.3-77.9)	8	75.1	(31.5-93.3)	16	62.7	(35.0-81.4)	
9. Miscellaneous specified	31	77.6	(58.3-88.9)	36	59.0	(40.4-73.6)	67	67.7	(54.6-77.8)	
9.1 Other paediatric and embryonal tumours, NOS	6	50.3	(11.2-80.8)	4	66.8	(5.4-94.7)	10	55.3	(19.0-81.0)	
9.2 Other specified and embryonal tumours, NOS	25	84.4	(63.1-94.1)	32	58.0	(38.6-73.3)	57	69.7	(55.7-80.1)	
10. Unspecified malignant	16	74.9	(45.6-90.1)	13	76.7	(43.6-92.0)	29	75.7	(55.4-87.8)	
10.1 Unspecified malignant	16	74.9	(45.6-90.1)	13	76.7	(43.6-92.0)	29	75.7	(55.4-87.8)	
Overall cancer survival (95% CI)	1 519	81.7	(79.5-83.7)	1 613	84.1	(82.1-85.9)	3 132	82.9	(81.5-84.3)	
Overall cancer survival excluding melanomas (95% CD)	1 260	79.7	(77.2-82.0)	1 191	79.7	(77.1-82.1)	2 451	79.7	(78.0-81.4)	

^a Confidence intervals cannot be calculated in instances where there were either no deaths or no survivors within the period ^b Five-year relative survival could not be calculated as no cases had a full five-years of follow up

2.4 Cancer survival among AYA 25-29 years by AYA diagnostic group and subgroup and ethnicity

Overall cancer survival was consistently higher for each year of follow-up in non-Maori/non-Pacific Peoples compared to both Maori and Pacific Peoples. These results are similar to what was seen for 15-24 year olds.¹ At five-years, survival was 87.9% in non-Maori/non-Pacific Peoples compared to 77.4% in Maori and 76.7% in Pacific Peoples. These results are similar to what was seen for 15-24 year olds.¹

The differences in overall survival by ethnicity could potentially be influenced by the melanoma group. Melanoma incidence is significantly higher in non-Maori/non-Pacific Peoples compared to Maori and Pacific Peoples and has a generally favourable prognosis. Five-year survival excluding melanomas was calculated and found to remain significantly higher in non-Maori/non-Pacific Peoples (84.9%) compared to Maori (76.1%), however the difference between non-Maori/non-Pacific compared to Pacific Peoples (76.5%) was no longer statistically significant.

Maori (71.6%) and Pacific Peoples (75.1%) had lower five-year survival for carcinomas than non-Maori/non-Pacific Peoples (85.5%), the difference between Maori and non-Maori/non-Pacific Peoples reaching statistical significance.

Notable survival differences between Maori and non-Maori/non-Pacific 25-29 year olds, although not reaching statistical significance, include the poor survival for Maori diagnosed with bone tumours (16.8% c.f. 43.2%), breast carcinomas (46.9% c.f. 69.9%) and CNS tumours (34.1% c.f. 68.4%).

Table 2.4Cancer survival among AYA 25-29 years by AYA diagnostic groupand subgroup and ethnicity, New Zealand, 2000-2009

AYA diagnostic group/selected		Ma	ori		Pacific 1	Peoples	Non-Maori / non-Pacific Peoples			
subgroups	n	relat (5-year tive survival (95% CI)		relat (5-year tive survival (95% CI)	n	5-year relative survival (95% CI)		
1. Leukaemias	10	60.2	(25.4-83.0)	9	66.9	(28.3-88.1)	49	69.3	(53.3-80.8)	
1.1 Acute lymphoid leukaemia	2	b	b	2	100.4	a	14	71.0	(39.5-88.3)	
1.2 Acute myeloid leukaemia	6	50.2	(11.1-80.6)	4	50.2	(5.8-84.9)	20	56.4	(30.7-75.9)	
1.3 Chronic myeloid leukaemia	1	100.5	a	3	66.8	(5.4-94.7)	12	81.3	(43.1-95.3)	
1.4 Other and unspecified leukaemia	1	0.0	a	-	-	-	3	100.4	a	
2. Lymphomas	21	81.2	(57.1-92.7)	8	75.3	(31.6-93.4)	137	83.5	(75.3-89.3)	
2.1 Non-Hodgkin lymphoma	13	69.5	(37.5-87.5)	4	50.2	(5.8-84.8)	64	79.1	(66.5-87.5)	
2.2 Hodgkin lymphoma	8	100.3	a	4	100.4	a	73	87.5	(75.1-94.0)	
3. CNS tumours	13	34.1	(10.2-60.2)	8	62.7	(23.0-86.4)	41	68.4	(49.2-81.7)	
3.1 Astrocytoma	7	0.0	a	5	80.3	(20.5-97.3)	22	48.9	(23.0-70.6)	
3.2 Other gliomas	4	100.4	a	1	100.5	a	7	100.3	a	
3.3 Ependymomas	1	0.0	a	-	-	-	-	-	-	
3.4 Medulloblastoma and other PNET	1	100.3	a	-	-	-	5	80.4	(20.5-97.4)	
3.5 Other specified intracranial and intraspinal neoplasms	-	-	-	1	0.0	a	1	100.2	a	
3.6 Unspecified intracranial and intraspinal neoplasms	-	-	-	1	0.0	a	1	100.6	a	

^a Confidence intervals cannot be calculated in instances where there were either no deaths or no survivors within the period

^b Five-year relative survival could not be calculated as no cases had a full five-years of follow up

Table 2.4 (cont.) Cancer survival among AYA 25-29 years by AYA diagnostic group and subgroup and ethnicity, New Zealand, 2000-2009

AYA diagnostic group/selected		Ma	ori		Pacific 1	Peoples	Non-Maori / non-Pacific Peoples			
subgroups	n	relat (5-year tive survival 95% CI)	n	relat	5-year tive survival 95% CI)	n rela		5-year tive survival (95% CI)	
4. Osseous & chondromatous neoplasms	6	16.8	(0.8-51.9)	-	-	-	11	43.2	(11.1-72.7)	
4.1 Osteosarcoma	2	50.3	(0.6-64.0)	-	-	-	5	b	b	
4.2 Chondrosarcoma	1	0.0	a	-	-	-	2	100.4	a	
4.3 Ewing tumour	3	0.0	a	-	-	-	2	50.3	(0.6-91.5)	
4.4 Other specified and unspecified bone tumours	-	-	-	-	-	-	2	0.0	a	
5. Soft tissue sarcomas	7	86.0	(33.5-98.2)	2	100.4	а	25	74.8	(51.8-88.0)	
5.1 Fibromatous neoplasms	1	100.2	a	-	-	-	4	100.5	a	
5.2 Rhabdomyosarcomas	-	-	-	-			2	50.2	(0.6-91.5)	
5.3 Other soft tissue sarcomas	6	83.6	(27.4-97.8)	2	100.4	a	19	72.4	(45.5-87.8)	
6. Germ cell & trophoblastic	79	95 1	(86 7-98 4)	8	100 4	a	165	99.2	(95 4-100 2)	
neoplasms 6.1 Germ cell and tronhoblastic		75.1	(00.7)0.1)	Ŭ	100.1		105	//.2	(75.4 100.2)	
neoplasms of gonads	77	94.9	(86.3-98.4)	8	100.4	a	158	99.1	(95.2-100.1)	
6.2 Germ cell and trophoblastic	2	100.5	a	-	-	-	7	100.3	а	
7. Melanoma and skin carcinomas	13	100.3	a	1	1 ^b ^b		364	94.3	(91.1-96.4)	
7.1 Melanoma	13	100.3	a	1	b	b	364	94.3	(91.1-96.4)	
8. Carcinomas	117	71.6	(61.1-79.8)	41	75.1	(58.4-85.9)	356	85.5	(81.1-89.0)	
8.1 Thyroid carcinoma	26	100.2	a	14	93.1	(59.2-99.2)	69	100.3	a	
8.2 Other carcinoma of head and neck	3	100.3	a	2	b	Ъ	28	95.9	(72.7-99.7)	
8.3 Carcinomas of trachea, bronchus, and lung	1	b	Ъ	-	-	-	5	20.0	(0.8-58.3)	
8.4 Carcinoma of breast	30	46.9	(25.2-66.0)	4	100.2	a	67	69.9	(55.5-80.4)	
8.5 Carcinoma of genitourinary tract	37	82.7	(65.2-92.0)	8	86.9	(36.2-98.3)	125	95.2	(89.3-97.9)	
8.6 Carcinoma of gastro-intestinal tract	19	53.6	(27.4-74.1)	11	34.4	(9.6-61.5)	57	63.4	(46.1-76.5)	
8.7 Carcinomas of other and ill-def sites	1	0.0	a	2	b	b	5	60.2	(12.6-88.5)	
9. Miscellaneous specified neoplasms, NOS	6	83.6	(27.4-97.8)	10	90.3	(47.5-98.9)	11	61.3	(26.1-83.8)	
9.1 Other paediatric and embryonal tumours, NOS	-	-	-	-	-	-	2	b	ь	
9.2 Other specified and embryonal tumours, NOS	6	83.6	(27.4-97.8)	-97.8) 10 90.3 (47.5-98.9)		(47.5-98.9)	9	63.2	(23.0-86.8)	
10. Unspecified malignant	4	50.2	(5.8-84.9)	1	0.0	a	13	76.4	(42.8-91.9)	
10.1 Unspecified malignant neoplasms	4	50.2	(5.8-84.9)	1 0.0 ^a		a	13	76.4	(42.8-91.9)	
Overall cancer survival (95% CI)	276	77.4	(71.5-82.2)	88 76.7 (66.1-84.5)		(66.1-84.5)	1 172	87.9	(85.7-89.7)	
Overall cancer survival -	263	76.1	(70.0-81.2)	87	87 76.5 (65.7-84.3)		808	84.9	(82.0-87.4)	

^a Confidence intervals cannot be calculated in instances where there were either no deaths or no survivors within the period ^b Five-year relative survival could not be calculated as no cases had a full five-years of follow up

2.5 Overall AYA cancer survival by AYA diagnostic group/subgroup

and ethnicity

As expected, the exclusion of melanomas from the survival calculations had a greater reduction in the fiveyear survival for non-Maori/non-Pacific Peoples (86.0% to 82.8%) than for Maori (73.3% to 72.5%) and Pacific Peoples (73.7 to 73.0%).

Although not reaching statistical significance, there were many notable differences in survival for Maori compared to non-Maori/non-Pacific Peoples. Maori AYA survival for breast cancer (42.7%) was around 25% lower than survival for non-Maori/non-Pacific Peoples (69.3%). Poorer survival was also seen for CNS tumours (39.9% c.f. 65.4%), leukaemias (52.8% c.f. 72.8%) and bone tumours (33.0% c.f. 51.7%).

Table 2.5 Cancer survival among AYA 15-29 years by AYA diagnostic group and subgroup and ethnicity, New Zealand, 2000-2009

AYA diagnostic group/selected		Mac	ori		Pacific	Peoples	Non-Maori / non-Pacific Peoples			
subgroups	n	relati (9	5-year ve survival 5% CI)	n	relat (5-year tive survival 95% CI)	n	relat (5-year ive survival 95% CI)	
1. Leukaemias	48	52.8	(36.8-66.6)	34	67.4	(48.7-80.6)	166	72.8	(64.7-79.4)	
1.1 Acute lymphoid leukaemia	17	52.0	(26.3-72.6)	13	77.2	(44.4-92.2)	71	68.0	(55.0-78.0)	
1.2 Acute myeloid leukaemia	23	61.6	(36.7-79.2)	17	58.5	(32.0-77.8)	63	70.1	(55.7-80.6)	
1.3 Chronic myeloid leukaemia	4	67.0	(5.4-94.9)	4	75.2	(12.8-96.4)	21	84.7	(59.1-95.1)	
1.4 Other and unspecified leukaemia	4	0.0	a			-	11	100.3	a	
2. Lymphomas	56	83.4	(70.2-91.2)	27	85.5	(65.4-94.5)	336	87.5	(82.9-90.9)	
2.1 Non-Hodgkin lymphoma	28	28 70.5 (49.1-84.3) 15 80.3 (50.2-93.4)		125	79.3	(70.6-85.6)				
2.2 Hodgkin lymphoma	28	96.7	(77.5-99.8)	12	92.0	(54.1-99.1)	211	92.4	(86.6-95.8)	
3. CNS tumours	24	39.9	(19.4-59.8)	11	54.0	(22.1-77.9)	118	65.4	(55.2-73.9)	
3.1 Astrocytoma	11	21.6	(3.4-49.9)	6	66.9	(19.5-90.8)	57	59.1	(43.7-71.6)	
3.2 Other gliomas	7	68.8	(21.3-91.5)	1	100.5	a	20	49.9	(24.8-70.8)	
3.3 Ependymomas	2	0.0	a	-	-	-	16	93.9	(62.5-99.4)	
3.4 Medulloblastoma and other PNET	3	60.2	(2.5-93.5)	1	b	ь	13	66.9	(33.4-86.4)	
3.5 Other specified intracranial and intraspinal neoplasms	-	-	-	1	0.0	a	4	75.4	(12.9-96.6)	
3.6 Unspecified intracranial and intraspinal neoplasms	1	100.2	а	2	0.0	a	8	87.7	(38.8-98.4)	
4. Osseous & chondromatous neoplasms	39	33.0	(17.8-49.2)	8	60.8	(20.7-85.6)	74	51.7	(39.2-62.9)	
4.1 Osteosarcoma	14	39.6	(14.7-64.0)	3	60.1	(2.5-93.4)	37	53.6	(35.3-68.9)	
4.2 Chondrosarcoma	1	0.0	а	1	100.5	a	4	100.4	а	
4.3 Ewing tumour	23	28.7	(10.5-50.2)	4	50.1	(5.8-84.7)	28	47.8	(28.1-65.2)	
4.4 Other specified and unspecified bone tumours	1	b	b	-	-	-	5	20.0	(0.8-58.3)	
5. Soft tissue sarcomas	30	59.2	(38.0-75.3)	9	50.2	(13.7-78.8)	77	72.4	(60.3-81.4)	
5.1 Fibromatous neoplasms	5.1 Fibromatous neoplasms 6 100.3		a	1	0.0	a	12	100.3	a	
5.2 Rhabdomyosarcomas	6	16.8	(0.8-51.9)	1	0.0	a	10	47.1	(15.3-74.1)	
5.3 Other soft tissue sarcomas	18	62.4	(33.6-81.7)	7	64.5	(15.2-90.5)	55	71.0	(56.2-81.6)	

^a Confidence intervals cannot be calculated in instances where there were either no deaths or no survivors within the period ^b Five-year relative survival could not be calculated as no cases had a full five-years of follow up

Table 2.5(cont.)Cancer survival among AYA 15-29 years by AYA diagnostic groupand subgroup and ethnicity, New Zealand, 2000-2009

AYA diagnostic group/selected		Μ	aori		Pacific	Peoples	Non-Maori / non-Pacific Peoples			
subgroups	n	relat (5-year tive survival 95% CI)	n	relat (5-year ive survival 95% CI)	n	relat (5-year tive survival (95% CI)	
6. Germ cell & trophoblastic neoplasms	150	93.1	(87.0-96.5)	15	87.0	(56.6-96.8)	326	96.9	(94.0-98.5)	
6.1 Germ cell and trophoblastic neoplasms of gonads	141	93.3	(86.9-96.7)	13	92.6	(56.8-99.2)	306	97.7	(95.0-99.1)	
6.2 Germ cell and trophoblastic neoplasms of non-gonadal sites	9	89.2	(43.4-98.7)	2	b	ь	20	84.6	(58.8-95.0)	
7. Melanoma and skin carcinomas	20	95.3	(69.7-99.5)	5	100.3	а	656	94.0	(91.8-95.7)	
7.1 Melanoma	20	95.3	(69.7-99.5)	5	100.3	а	655	94.0	(91.8-95.7)	
8. Carcinomas	178	73.3	(65.4-79.7)	72	76.0	(64.1-84.4)	557	85.3	(81.8-88.1)	
8.1 Thyroid carcinoma	35	100.2	a	24	96.1	(74.1-99.7)	136	100.3	a	
8.2 Other carcinoma of head and neck	11	100.4	a	5	40.1	(5.2-75.5)	51	95.3	(81.5-99.1)	
8.3 Carcinomas of trachea, bronchus, and lung	1	b	b	1	b	ь	11	63.8	(29.8-84.7)	
8.4 Carcinoma of breast	34	42.7	(23.0-61.2)	6	100.2	а	79	69.3	(56.5-79.1)	
8.5 Carcinoma of genitourinary tract	52	85.9	(72.5-93.1)	16	81.0	(51.5-93.6)	171	95.3	(90.5-97.7)	
8.6 Carcinoma of gastro-intestinal tract	42	58.8	(41.3-72.7)	17	40.4	(17.7-62.2)	99	56.9	(45.2-67.0)	
8.7 Carcinomas of other and ill-def sites	3	0.0	a	3	b	b	10	70.3	(33.0-89.5)	
9. Miscellaneous specified neoplasms, NOS	16	68.4	(39.7-85.7)	14	78.8	(47.4-92.8)	37	63.1	(44.6-76.9)	
9.1 Other paediatric and embryonal tumours, NOS	2	50.3	(0.6-91.5)	1	b	b	7	50.2	(10.2-81.4)	
9.2 Other specified and embryonal tumours, NOS	14	71.7	(40.8-88.5)	13	77.2	(44.4-92.2)	30	65.7	(45.3-80.1)	
10. Unspecified malignant neoplasms	5	60.3	(12.6-88.6)	3	33.4	(0.9-77.6)	21	85.8	(61.6-95.4)	
10.1 Unspecified malignant neoplasms	5	60.3	(12.6-88.6)	3	33.4	(0.9-77.6)	21	85.8	(61.6-95.4)	
Overall cancer survival (95% CI)	566	73.3	(69.2-77.1)	198	73.7	(66.8-79.4)	2 368	86.0	(84.4-87.4)	
Overall cancer survival - excluding melanomas (95% CI)	546	72.5	(68.2-76.3)	193	73.0	(65.9-78.8)	1 712	82.8	(80.8-84.7)	

^a Confidence intervals cannot be calculated in instances where there were either no deaths or no survivors within the period

^b Five-year relative survival could not be calculated as no cases had a full five-years of follow up

2.6 International Comparisons of AYA (15-29 year) survival

The comparison table highlights New Zealand's poor survival for those AYA diagnosed with osteosarcomas and Ewing tumours which was also evident in the 15-24 analysis.¹ Australia's bone tumour survival was 20% higher than New Zealand's (66% c.f. 46%) There is also a marked difference between New Zealand's osteosarcoma five year survival (50%) and that achieved by Germany (69%) and the US (65%).⁸ Another noteworthy difference was New Zealand's five-year relative survival for AYA diagnosed with breast cancer (64%). Australia,⁶ the United States,⁸ and Germany⁸ all reported survival of over 80% for a similar time period.

Although the earlier analysis highlighted poorer ALL survival for New Zealand adolescents (15-19 years) compared to international benchmarks,¹ this was not evident in the AYA population as a whole. Overall New Zealand AYA 15-29 year survival (83%) was below that reported by Australia in 2004-2010 (88%).⁵

		Netherland	s 1988-2	009 ⁹	Canada 2001-2005 ⁵	US (SEER-13) 2002-2006 ⁸ Germany 2002-2006 ⁸		Austral	lia 1997-2003 ⁵	Austra	nlia 2004-2010 ⁵	New Zealand 2000-2009		
AYA diagnostic group/selected subgroups	5-year relative survival (male) (95% CI)		5-year relative survival (female) (95% CI)		5-year observed survival	5-year relative survival	5-year relative survival	5-yea surviv	5-year observed survival (95% CI)		ear observed ival (95% CI)	n	5-year relative survival (95% CI)	
1. Leukaemias	a	a	a	a	68	a	a	56	(52-60)	68	(64-72)	248	68	(62-74)
1.1 Acute lymphoid leukaemia	50	(44-55)	52	(45-59)	a	51	57	53	(47-59)	64	(57-70)	101	66	(55-75)
1.2 Acute myeloid leukaemia	44	(38-50)	48	(41-54)	a	47	58	55	(49-60)	61	(55-67)	103	66	(55-75)
2. Lymphomas	a	a	a	a	a	a	a	88	(86-89)	92	(90-93)	419	87	(83-90)
2.1 Non-Hodgkin lymphoma	72	(69-75)	75	(71-78)	79	78	85	74	(71-78)	84	(81-87)	168	78	(70-84)
2.2 Hodgkin lymphoma	91	(89-92)	94	(93-95)	95	93	98	96	(95-97)	97	(95-98)	251	93	(88-96)
3. CNS tumours	a	a	a	a	68	a	a	62	(58-66)	66	(61-70)	153	60	(51-68)
4. Osseous & chondromatous neoplasms	a	a	a	a	a	a	a	63	(58-68)	66	(60-71)	121	46	(37-56)
4.1 Osteosarcoma	45	(38-53)	70	(60-78)	a	65	69	58	(49-66)	59	(49-67)	54	50	(35-63)
4.3 Ewing tumour	46	(36-55)	39	(27-52)	a	51	50	49	(41-58)	57	(47-66)	55	41	(27-54)
5. Soft tissue sarcomas	a	a	a	a	72	a	a	71	(66-74)	77	(72-81)	116	67	(57-75)
5.2 Rhabdomyosarcomas	36	(25-47)	39	(24-53)	a	a	a	35	(23-48)	49	(33-64)	17	32	(12-55)
6. Germ cell & trophoblastic neoplasms	a	a	a	a	a	a	a	96	(95-97)	96	(94-97)	491	95	(93-97)
6.1 Germ cell and trophoblastic neoplasms of gonads	96	(96-97)	81	(77-85)	a	96	97	97	(96-98)	97	(96-98)	460	96	(94-98)
6.2 Germ cell and trophoblastic	76	(69-82)	90	(79-96)	a	77	80	81	(72-87)	78	(68-85)	31	84	(65-93)

International comparisons of AYA (15-29 year) survival by AYA diagnostic group and selected subgroups

^a Not reported for this diagnostic group /subgroup

Table 2.6

		Netherland	s 1988-2(009	Canada 2001-2005	US (SEER-13) 2002-2006	Germany 2002-2006	Austral	lia 1997-2003	Austra	alia 2004-2010	New Zealand 2000-2009			
A Y A diagnostic group/selected subgroups	5-year relative survival (male) (95% CI)		5-year relative survival (female) (95% CI)		5-year observed survival	5-year relative survival	5-year relative survival	5-year observed survival (95% CI)		5-ye survi	5-year observed survival (95% CI)		5-year r (elative survival 95% CI)	
7. Melanomas	87.8	(86-90)	96	(95-96)	93	96	97	97	(96-98)	96	(95-97)	681	94	(92-96)	
8. Carcinomas	a	a	a	a	a	a	a	85	(83-86)	87	(85-88)	807	82	(79-85)	
8.1 Thyroid carcinoma	96.2	(92-98)	100	(98-100)	99	99	99	99	(99-100)	100	(99-100)	195	100	(97-100)	
8.4 Carcinoma of breast	a	a	75	(72-77)	75	80	82	77	(73-81)	86	(82-89)	119	64	(53-72)	
8.5 Carcinoma of genitourinary tract	85.7	(81-90)	82	(80-84)	a	a	a	a	a	a	a	239	92	(88-95)	
8.6 Carcinoma of gastro-intestinal tract	60.6	(56-65)	70	(65-74)	a	a	a	a	a	a	a	158	56	(47-64)	
9. Miscellaneous specified neoplasms, NOS	a	a	а	a	78	a	a	a	a	a	a	67	68	(55-78)	
10. Unspecified malignant neoplasms	31.0	(23-40)	30	(20-40)	90	a	a	a	a	a	a	29	76	(55-88)	
Overall cancer survival (95% CI)	79.9	(79-81)	82	(82-83)	85	a	a	86	(86-87)	88	(87-89)	3 132	83	(82-84)	

Table 2.6 (cont.) International comparisons of AYA (15-29 year) survival

^a Not reported for this diagnostic group / subgroup

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