

Cancer among 25-29 year olds in New Zealand:

Should our current AYA age range be expanded to include them?

Kirsten Ballantine^{1,2}, Victoria Utley³, Ruth Spearing^{2,4} & Michael Sullivan^{4,5}

¹ National Child Cancer Network, New Zealand ² Canterbury District Health Board, Christchurch ³ The University of Auckland Faculty of Medical and Health Sciences, Auckland ⁴ The University of Otago Christchurch School of Medicine, Christchurch ⁵ The Royal Children's Hospital, Melbourne

Background

The New Zealand AYA Cancer Service Specifications currently define AYA as 12-24 years of age and the recently established AYA Cancer Network Aotearoa has been charged with advancing cancer services and improving survival specifically for this age group. However, there is no universal definition of AYA and other countries favour an upper bound of 29 years.

A 2000-2009 analysis of cancers among the 15-24 year age group found significant differences in cancer incidence and survival according to prioritised ethnicity and provided evidence of poorer survival for some tumour groups when compared to international benchmarks¹. However, there has been no previous New Zealand analysis of cancers among the older AYA population, namely those aged 25-29 years.

Objectives

Accordingly, the research objectives were as follows:

1. to determine New Zealand cancer incidence and survival among 25-29 year olds according to sex and prioritised ethnicity
2. to ascertain whether the ethnic disparities and poorer outcomes for some tumour groups identified in the earlier 15-24 year analysis were also evident for this older age quintile

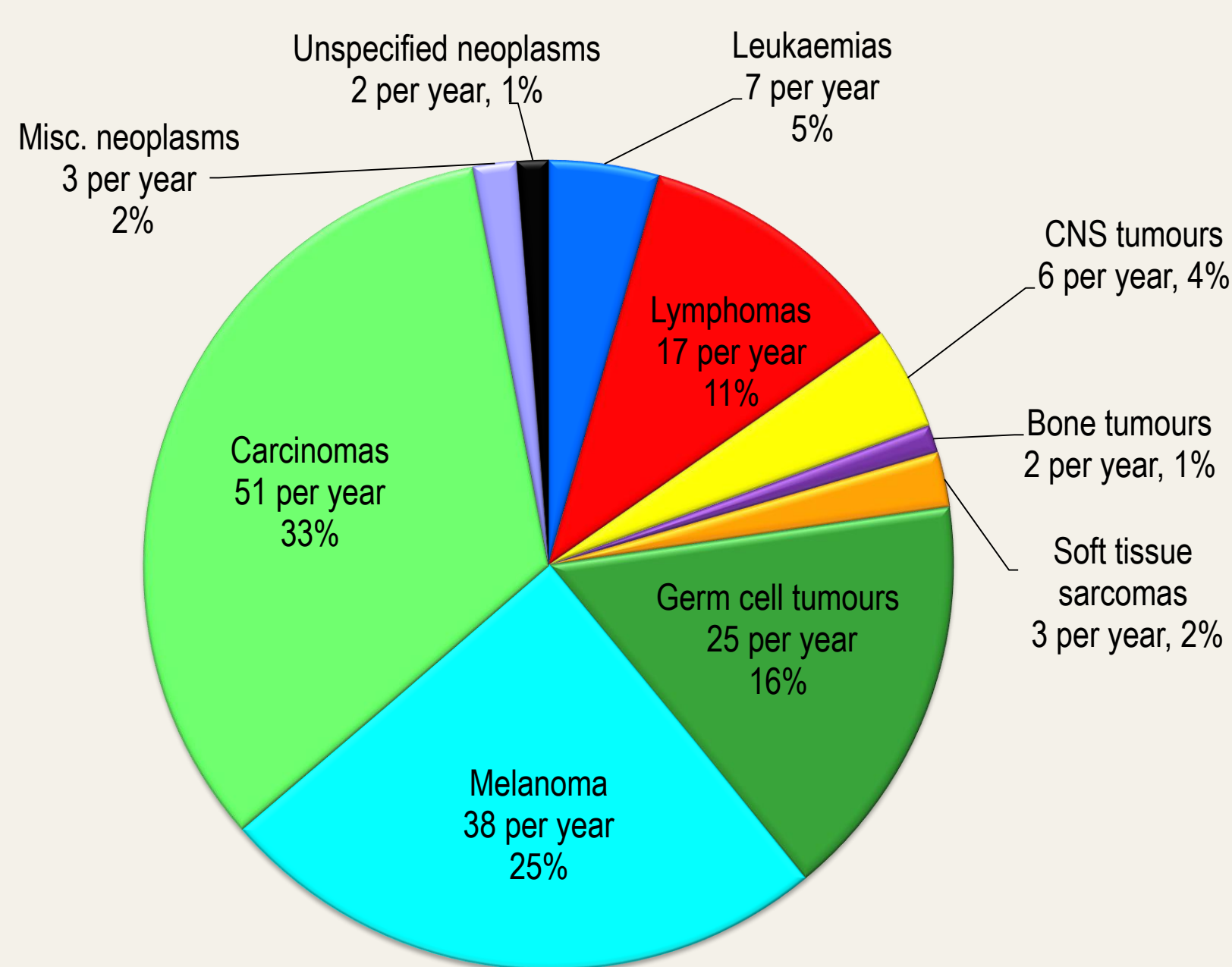
Methods

- Diagnostic and demographic information for all primary malignant cancers diagnosed among those aged 25-29 years between January 1 2000 and December 31 2009 were obtained from the New Zealand Cancer Registry. Date and cause of death was obtained from the National Mortality Collection, with follow-up to December 31 2010.
- All cancers were re-coded according to the AYA Cancer Classification Scheme using the SEER ICD-O site-recode², an update of the scheme originally proposed by Barr and colleagues³.
- Ethnicities were classified according to a prioritised ethnicity system; Maori, Pacific Peoples, and All Other (i.e. 'non-Maori/non-Pacific Peoples').
- Age-specific incidence and relative survival estimates were calculated using SAS® and Stata® software respectively.

The spectrum of cancers among 25-29 year olds

Between 2000 and 2009 there were an average of 154 primary malignant tumours diagnosed each year among New Zealanders aged 25-29 years - approximately equal to the annual number of cancers diagnosed among those aged 15-24 years (161) and greater than the annual number of new diagnoses in the entire child population (133). There was no significant difference in the average annual number of cancers diagnosed in male (70) and female (84) 25-29 year olds.

The overall cancer incidence for 25-29 year olds of 588 per million was comparable to the incidence reported for the US⁴ and Canada⁵. A notable exception is the incidence of melanoma which, at 145 per million, is higher than has been reported elsewhere.



Nearly three quarters of all cancers diagnosed in 25-29 year olds were either a carcinoma, melanoma or germ cell tumour.

There were around 10 breast carcinomas diagnosed in 25-29 year old females each year compared to fewer than 2 cases among those under 25.

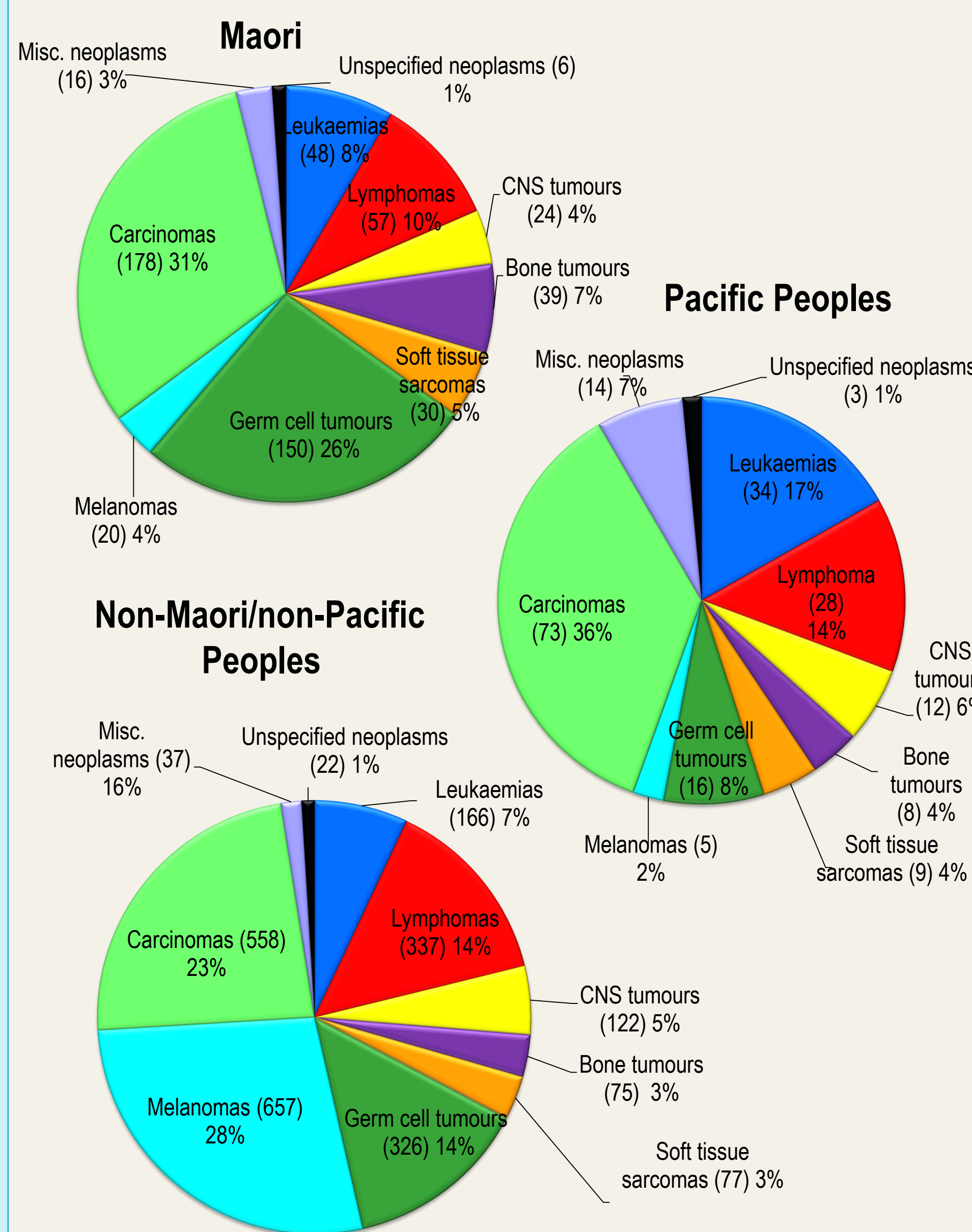
Incidence by prioritised ethnicity

Cancer incidence among 25-29 year olds was 532 per million for Pacific Peoples, 626 per million for non-Maori/non-Pacific Peoples and 727 per million for Maori.

There were many notable differences in incidence according to ethnicity. Melanomas were rarely diagnosed among Maori or Pacific Peoples but accounted for nearly one third of all cancers diagnosed among non-Maori/non-Pacific Peoples.

Compared to non-Maori/Pacific Peoples, Maori had a significantly higher incidence of gonadal germ cell tumours and carcinomas, specifically breast carcinomas and genitourinary carcinomas.

Leukaemia incidence in Pacific Peoples was double that of both non-Maori/non-Pacific Peoples and Maori.

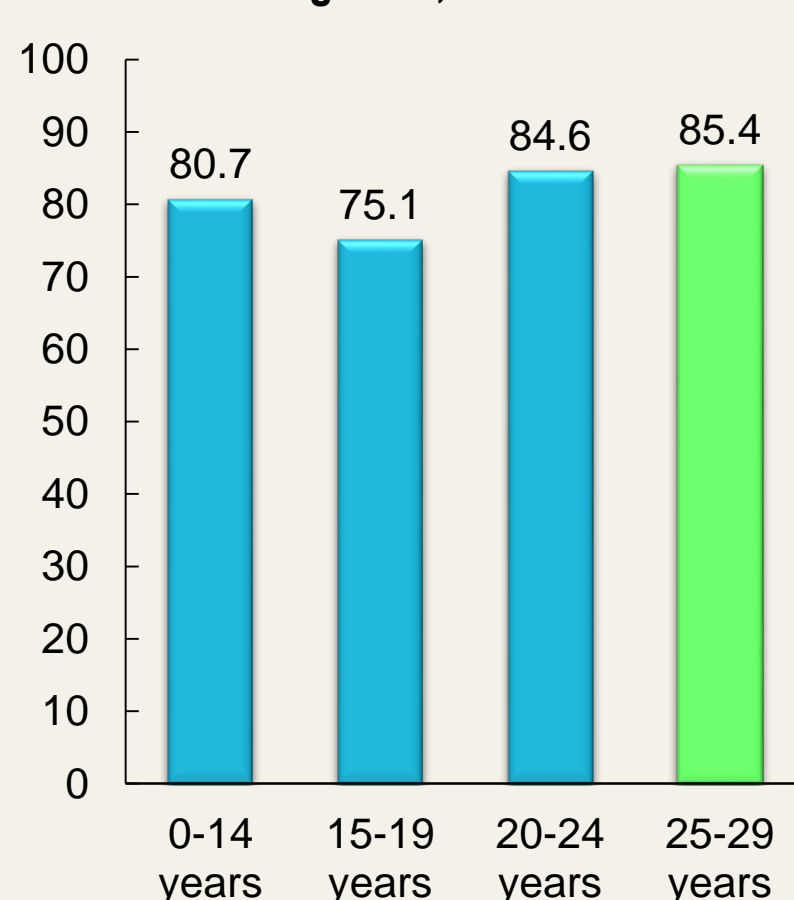


Survival

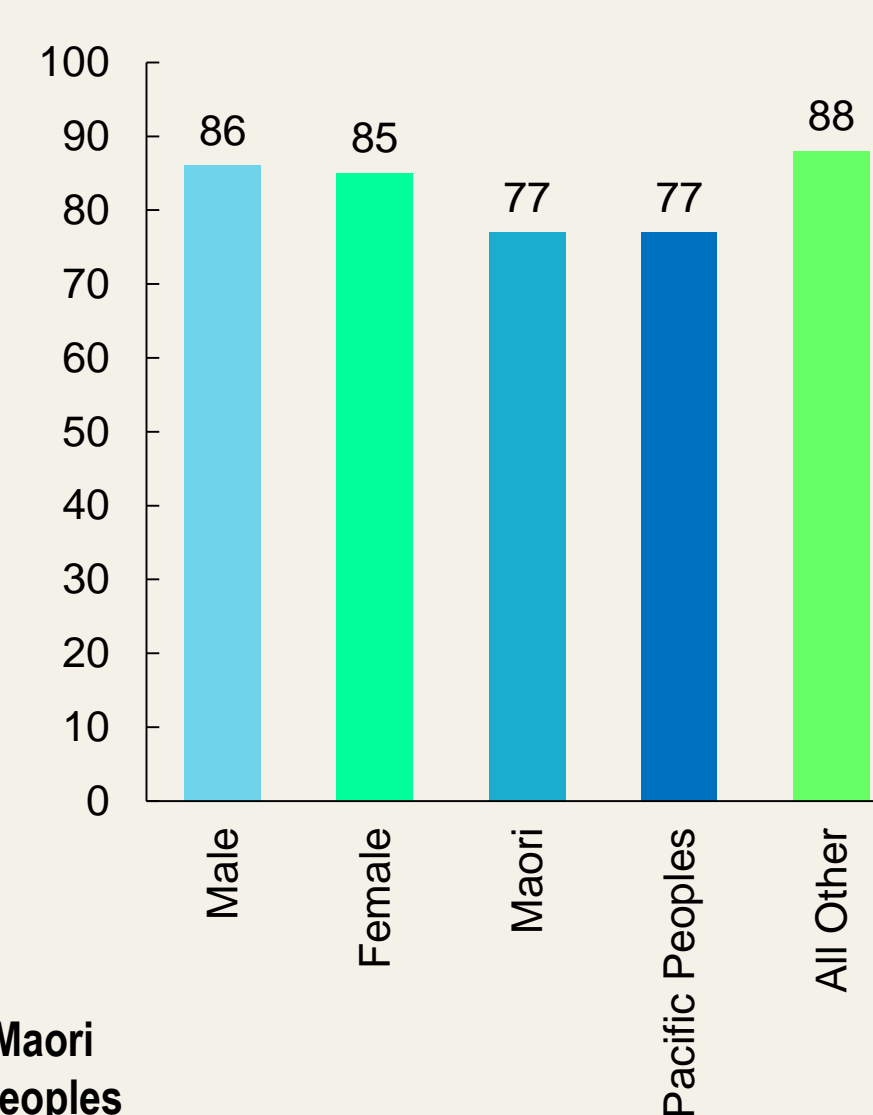
Overall relative survival for the 25-29 year population was 95% at 1 year, 88% at 3 years, 85% at 5 years and 81% at 10 years. These survival estimates were very similar to the survival reported for 20-24 year olds but significantly higher than survival for adolescents aged 15-19 years.

There were no 5-year cancer survival differences for the 25-29 year population according to sex, but marked differences according to ethnicity. When melanomas were excluded, Maori 5-year survival remained 9% lower (76%) than for non-Maori/non-Pacific Peoples (85%).

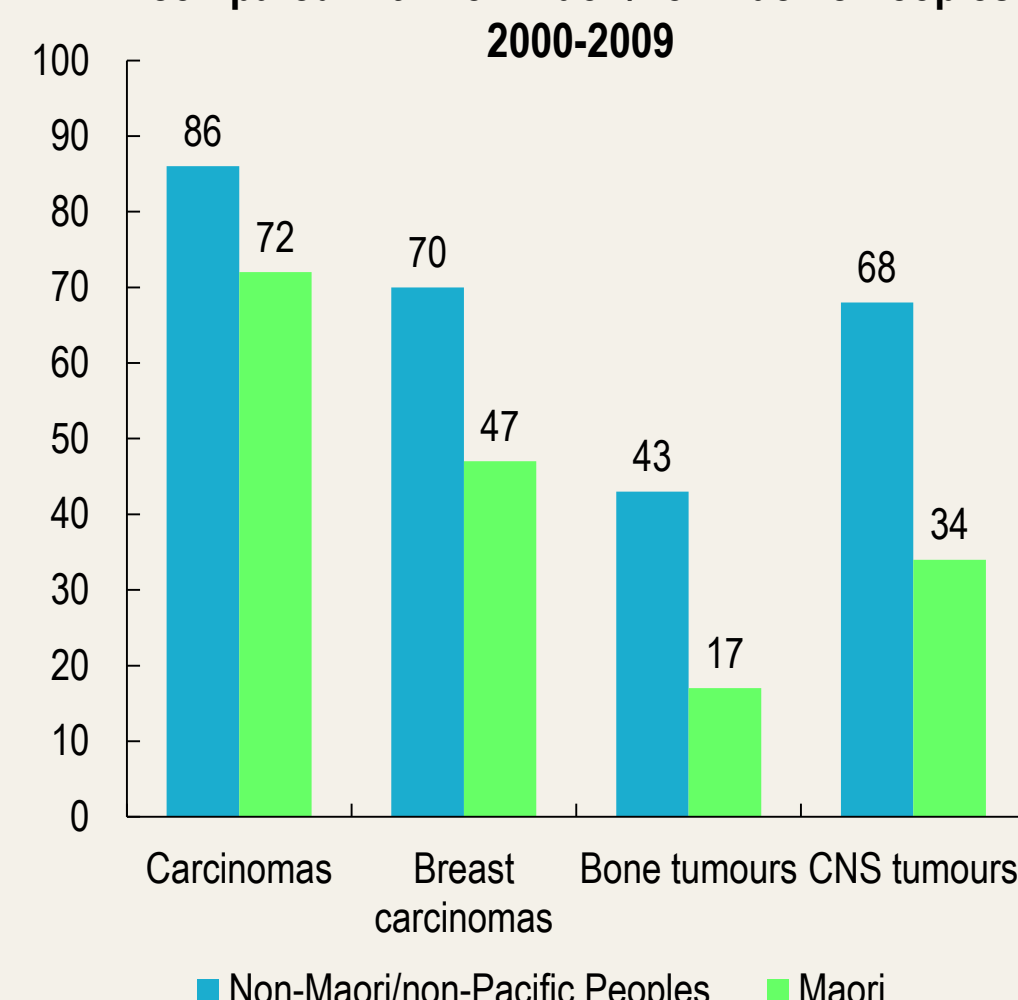
5-year relative survival for cancer by age at diagnosis, 2000-2009



5-year relative survival for 25-29 year olds, 2000-2009

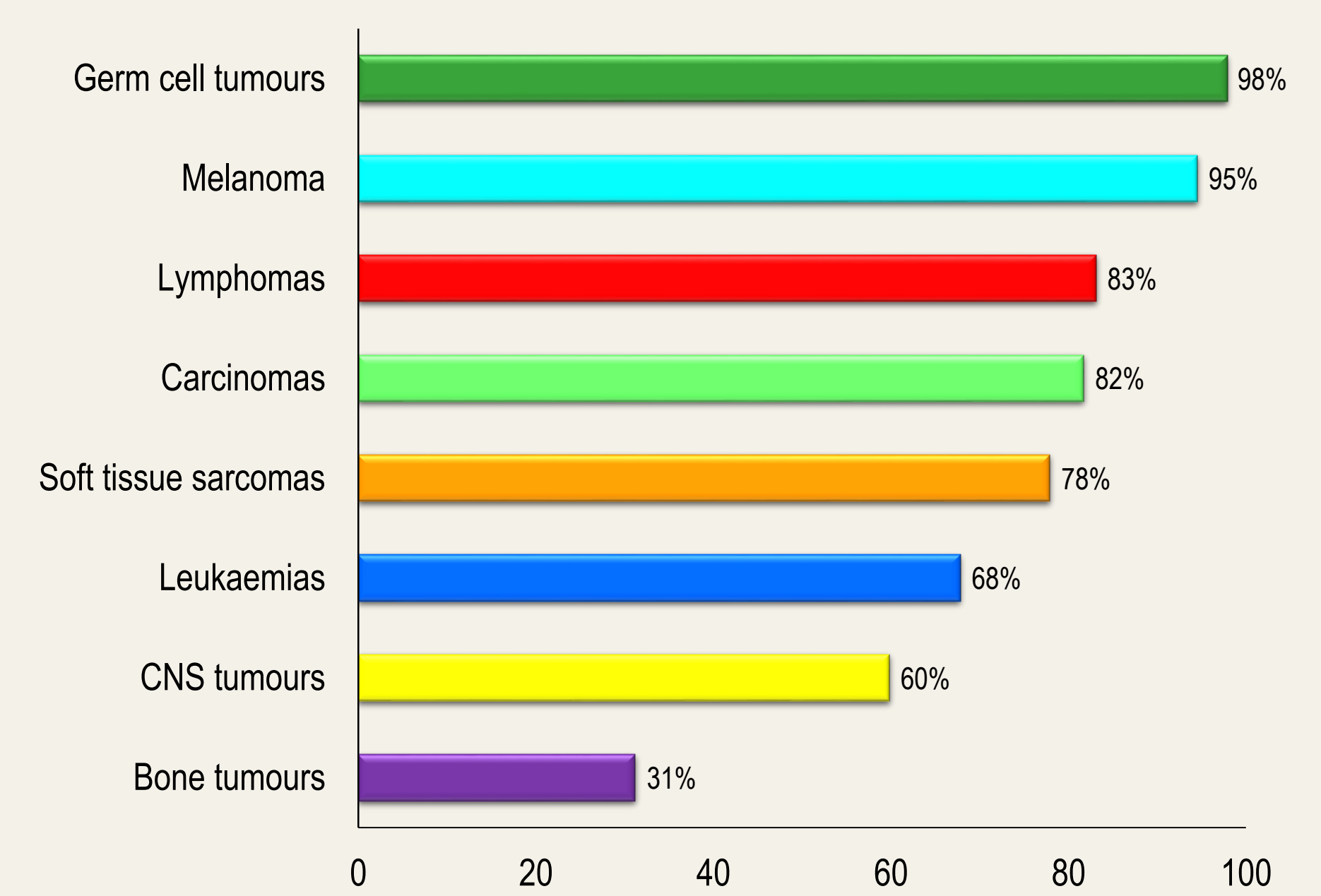


5-year relative survival for cancer for Maori compared with non-Maori/non-Pacific Peoples, 2000-2009



Although not statistically significant due to the small number of cases, there were many noteworthy survival differences between Maori and non-Maori/Pacific Peoples.

5-year relative survival by diagnostic group



Five-year survival for carcinomas overall was 82% although this varied considerably according to diagnostic subgroup, ranging from 99% for thyroid carcinoma to 33% for 'carcinoma of the trachea, bronchus and lung'. Survival for non-Hodgkin lymphomas was 76%, compared to 90% for Hodgkin lymphomas.

When combined with the 15-24 data, New Zealand breast cancer survival for 15-29 year olds was 64% compared to 86% in Australia during a comparable time period. Bone tumour survival was also significantly poorer (46% c.f. 66%)⁶.

Conclusion

The common cancers affecting 25-29 year olds (carcinomas, melanomas and germ cell tumours) are substantially different to the most common cancers among New Zealand's younger AYA population (leukaemias and lymphomas).

Communication of cancer risk to this age group must be expressed carefully due to significant variations in the most common cancers according to sex and prioritised ethnicity.

The finding of bone tumour 5-year survival of 31% was consistent with what was seen in the 15-24 year old population and provides further evidence of the urgent need for additional research and resources to improve the outcomes for those AYA diagnosed with this rare and complex tumour group.

The ethnic survival disparities identified in the 15-24 analysis are also evident in the 25-29 year population. In addition, Maori women appear to be both at higher risk of developing breast cancer in young adulthood and of dying of their disease.

Widening the definition of AYA from 12-24 to 12-29 would have substantial resource implications as the number of patients eligible for support from our AYA Cancer Services would increase by 84% (from around 180 to 340 patients annually). However, consideration should be given to expanding AYA Cancer Services to include those subgroups of 25-29 year old cancer patients identified as high risk.

References

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