

Acknowledgements

This report has been made possible by the collaboration of numerous persons and institutions within Victoria and across Australia. Without the data supplied by each notifying body it would be impossible to describe the overall picture of cancer survival in Victorians. The regularity and completeness of the contributions of all Victorian hospitals and pathology laboratories is deeply appreciated. Thanks must also go to the Registrar of Births, Deaths and Marriages for their continued and valued assistance in supplying details of deaths.

Over the years, many people too numerous to mention individually have worked to develop the population registry database and the data it contains. I would like to express my warm appreciation to present and past registry staff for their sustained efforts to produce data of a high quality and completeness.

Thanks must also go to the Directors of the Integrated Cancer Service regions and to members of the Victorian Cooperative Oncology Group who assisted with the clinical interpretation of survival patterns for selected cancer sites. This task was not made easy by the current lack of population-based information on prognostic indicators and treatment. It is hoped that the variation in patterns of survival identified by this report will bolster support for the standardised collection of staging and other clinical data for all Victorians with cancer.



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Disclaimer: Clinical interpretation of results was obtained from members of the Victorian Cooperative Oncology Group with experience in the relevant fields. These comments were sought to add interest and relevance to the figures but are the opinions of individual clinicians and do not necessarily reflect the opinions of The Cancer Council Victoria.

Overview

This report aims to provide descriptive information regarding survival patterns for Victorians with cancer in 2004. Detailed figures for all cancer and for 34 common cancers are given in the body of the report. Some of the main findings of the report are discussed below - interpretation of these findings is often difficult in the absence of data on cancer staging and treatment.

Cancer type

Cancers with highest 5-year survival were testis (99%), thyroid (93%), melanoma (90%), breast (87%), uterus (84%), prostate (84%) and Hodgkin lymphoma (82%).

Cancers with the lowest 5-year survival were pancreas (5%), mesothelioma (5%), liver (10%), lung (11%) and cancers of unknown primary site (11%).

Sex

Generally survival was similar for men and women. Where significant differences occurred, it was women who tended to have the better prognosis with the exception of bladder cancer for which men had higher survival. 5-year survival was higher for women than men for the following cancers – all cancer, and cancers of the oral cavity, lung, salivary glands, thyroid and unknown primary and for melanoma and acute myeloid leukaemia.

Age at diagnosis

Almost all cancers showed a decrease in 5-year survival proportions with increasing age though the steepness of the decline varied. For example, ovarian cancer survival decreased from 84% for women aged under 45 years to 16% for women aged over 75 years whereas breast cancer survival only decreased from 87% to 76% over the same age groups.

Period of diagnosis

Most cancers showed improvements in survival over the 15-year period from 1990 to 2004. Cancers for which there was no evidence of improvement over this period were those of the salivary glands, pancreas, larynx, central nervous system and cervix and Hodgkin lymphoma and chronic lymphocytic leukaemia.

Morphology of disease at diagnosis

For most cancers for which analysis was undertaken, differences were observed by tumour morphology. See pages for all cancer and cancers of the lung, breast, cervix, ovary, testis, bladder, kidney, renal pelvis, central nervous system, thyroid and unknown primary, and Non-Hodgkin lymphoma for details.

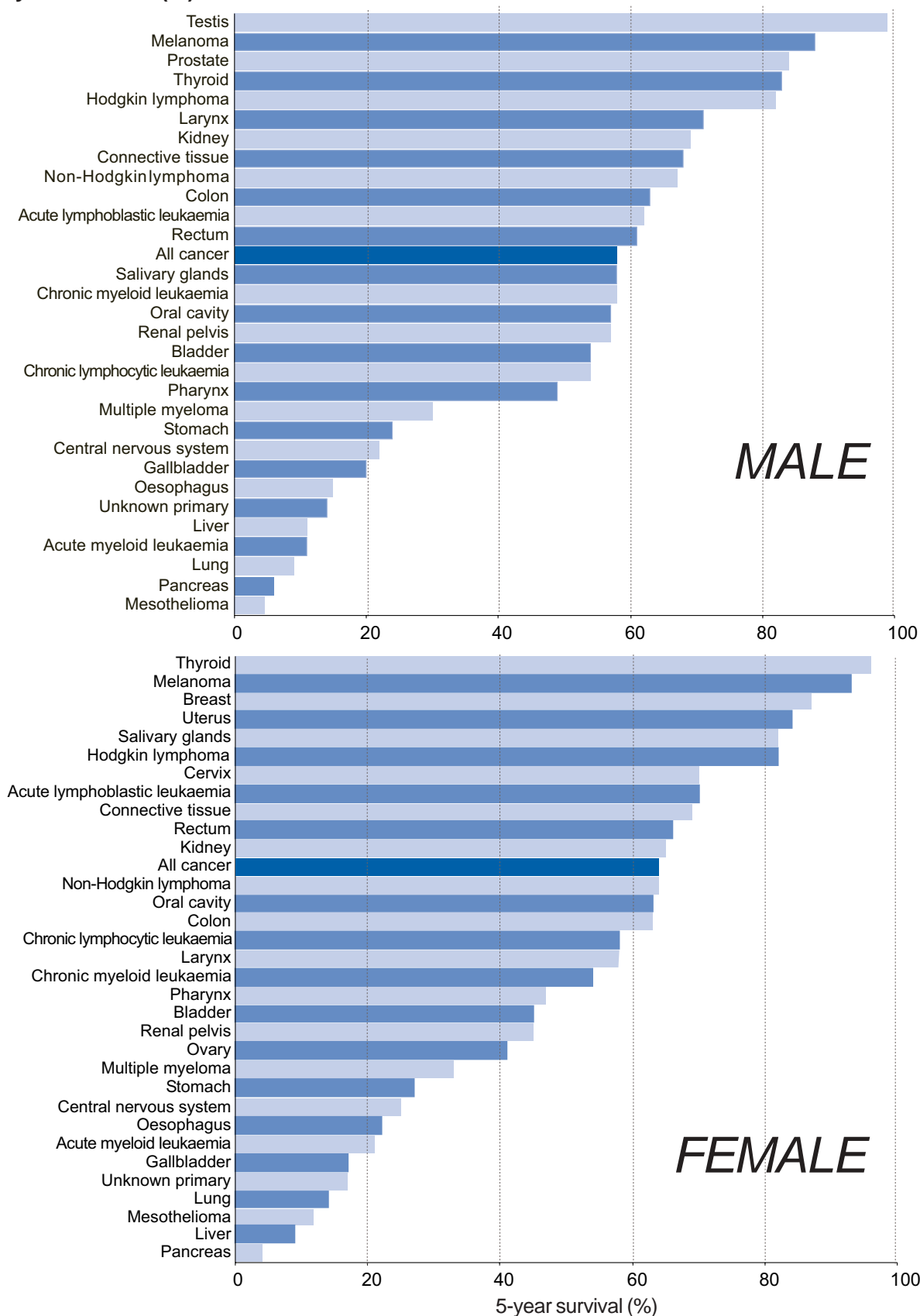
Subsite of tumours

For cancers of the oral cavity, salivary glands and pharynx, analysis of survival by subsite was carried out. See the relevant pages for details.

5-year survival (%) by sex and cancer site

Cancer site	5-year survival		
	Male	Female	All
All cancer	58	64	61
Oral cavity	57	63	59
Salivary glands	58	82	69
Pharynx	49	47	49
Oesophagus	15	22	17
Stomach	24	27	25
Colon	63	63	63
Rectum	61	66	63
Liver	11	9	10
Gallbladder	20	17	18
Pancreas	6	4	5
Larynx	65	58	64
Lung	9	14	11
Mesothelioma	4	11	5
Connective tissue	68	69	68
Melanoma	88	93	90
Breast	-	87	-
Cervix	-	70	-
Uterus	-	84	-
Ovary	-	41	-
Prostate	84	-	-
Testis	99	-	-
Bladder	54	45	51
Kidney	69	65	68
Renal pelvis	57	45	52
Central nervous system	22	25	23
Thyroid	85	94	92
Unknown primary	14	17	11
Non-Hodgkin lymphoma	67	64	66
Hodgkin lymphoma	82	82	82
Multiple myeloma	30	33	32
Acute lymphoblastic leukaemia	62	70	66
Chronic lymphocytic leukaemia	54	58	56
Acute myeloid leukaemia	9	18	13
Chronic myeloid leukaemia	58	54	56

5-year survival (%) for all cancers in Victorian men and women



Guide to this report

This report has been produced to describe the survival of Victorians affected by cancer in 2004 and in comparison with earlier periods.

The type of survival analysis used for this report differs from that used for our previous report "Cancer Survival in Victoria: relative survival for selected cancers diagnosed from 1982 to 1997 with follow-up to 1999" (June 2003).

In this report we use "period" analysis. This uses only the most recent interval survival estimate of cases diagnosed in different calendar years (cross-sectional estimate of survival). The estimate of period 5-year survival for persons in 2004 uses the first year interval survival for patients diagnosed in 2004, the 2-year interval survival from patients diagnosed in 2003, and so on. Because the "period" method uses only the most recent survival experience, when there is an increasing trend in survival it provides a more up-to-date measure of recent survival.

The "period" method is described in more detail in Appendix II on pages 83–84.

Put simply, [the 5-year survival figures presented in the tables show the estimated proportion of Victorians with a particular cancer in 2004 who have survived at least 5 years from their diagnosis.](#)

The body of this report is based on analyses of the most common cancers in Victoria and of all cancers combined. Detailed descriptions of the methods and data set are given in the Appendices.

Each of the common cancers is presented in a two page section starting with all cancers and proceeding in the order of the International Classification of Diseases, Tenth Revision¹.

Salient points of information from the analysis are noted in each section. Clinicians specialising in the relevant fields have been consulted for interpretation of the survival patterns for each cancer type.

Each section contains one table and up to four figures as follows:

Table 1

- overall survival from one to five years after diagnosis for all Victorians with cancer in 2004,

Deaths in the following items refers to the number of deaths in the period 2000 to 2004 in patients with a particular cancer.

- deaths and 5-year survival by sex and age group for

Victorians with cancer in 2004,

- deaths and 5-year survival by place of usual residence (metropolitan Melbourne or the rest of Victoria) for Victorians with cancer in 2004,
- for leading cancers, deaths and 5-year survival are presented for residents of the eight Victorian Integrated Cancer Services regions,
- for selected cancers, deaths and 5-year survival by tumour subsite or tumour morphology where such subgroups have clinical significance,
- deaths and 5-year survival for Victorians with cancer in 1990, 1995, 2000 and 2004,
- 5-year survival for each of the subgroups has been adjusted for age at diagnosis, year of diagnosis and sex.

Figures

- Figure 1 shows survival by year from diagnosis to 10 years for all Victorians with cancer in the years 1990, 1995, 2000 and 2004.
- Figures 2 and 3 show survival by year from diagnosis to five years for all Victorians with cancer in 2004 by sex and age group.
- Figure 4 shows survival by year from diagnosis to five years for all Victorians with cancer in 2004 by tumour subsite or morphology group as shown in Table 1.

Victorian cancer incidence and mortality 2004

A summary of new cases, incidence rates, deaths and mortality rates in Victoria in 2004 is given in Appendix VI (page 92) for the cancers described in this report. The rates are directly age-standardised to the World Standard Population as described in Cancer Incidence in Five Continents, Volume IV, 1982, IARC.

International survival comparisons

A summary table is presented in Appendix VII (page 93) showing Victorian survival with survival estimates from the USA SEER registries for cancers diagnosed in 1973–1998. Though the time periods are different, these USA figures provide a useful benchmark for international comparison as they use the same period survival method used for the Victorian figures presented in this report.

Regional analysis

Metropolitan Melbourne and the rest of Victoria

In this report we present separate survival estimates for all cancers combined and for 35 different types of cancer diagnosed in residents of metropolitan Melbourne and in residents of the rest of Victoria. Generally, the survival from cancer for residents of metropolitan Melbourne is better than that for residents from the rest of Victoria; the few exceptions to this include cancer of the breast, cancer of the rectum and non-Hodgkin lymphoma.

The reasons for these differences are not clear, and we currently lack data on cancer staging and treatment to assist interpretation. It is conceivable that Victorians who reside outside of Melbourne have less access to cancer services than their metropolitan counterparts and, as a consequence rural residents may delay seeking medical attention and present with more advanced cancers that are less responsive to treatment.

It must also be kept in mind that cancer services are provided to non-metropolitan residents by a combination of local services and visiting oncologists and by referrals to other (usually metropolitan) providers. Because of this, it is not possible to accurately attribute differences in survival by metropolitan and non-metropolitan residence to regional differences in the totality of cancer services provided.

Integrated Cancer Services (ICS) regions

In response to requests from the Victorian oncology community we have included in this report, for the first time, survival estimates for all cancers combined, and for the 10 most common cancers, for residents of the Department of Human Services' Integrated Cancer Services regions. A description of each ICS demographics and health services is given in Appendix V (Delivery of cancer services in Victoria, pages 88 to 91). These survival estimates will serve as an historical baseline against which future improvement in outcomes for each ICS can be assessed.

Again, **these estimates are based on each person's region of usual residence at the time of their cancer diagnosis and this does not necessarily relate to the ICS region in which they received their treatment.** Thirty-seven percent of all Victorians diagnosed with cancer are admitted to at least one hospital outside their ICS region of usual residence during the 12 months following diagnosis. This proportion varies considerably between types of cancer: varying from colon cancer, where 23% of

patients are admitted to hospitals outside their ICS region of residence, to pharyngeal cancer and glioma, where the majority (59%) of patients are admitted to hospitals outside their ICS region of usual residence. This pattern depends upon the degree of specialisation required for management: colon cancer remaining within the compass of the general surgeon, with brain cancer requiring more specialised facilities.

Similar to the metropolitan and non-metropolitan regions, ICS residents do not necessarily receive all their cancer treatment within their ICS. For each ICS the proportion of cancer patients admitted to hospital outside their ICS of residence during the first 12 months from diagnosis in 2004 is given in Appendix V. The proportion ranges from 22% for the Grampians RICS to 56% for the Gippsland RICS.

When considering all cancers combined, variation in survival between residents of different ICS could be due to a variety of factors. ICS may differ in their demographic structure and in the mix of cancer types that are diagnosed. An ICS with more lung cancers, for example, is going to have a poorer overall outcome than an ICS that has a larger proportion of patients with less fatal cancers.

When considering individual types of cancer, variation in survival is going to be influenced largely by differences in the stage of cancers at diagnosis and their potential curability. Currently there is little information available on the distribution of cancers by stage in Victoria. However, there are some data collected by the cancer registry that can be examined for regional variation in some aspects of cancer diagnosis and presentation. For example, the cancer registry collects thickness of melanomas, the maximal diameter of breast cancers, the detection of breast cancer by BreastScreen, and Gleason score for prostate cancers. These data are summarised in tables 2 and 3 on page 8.

Table 2: Some indicators of differences in cancer prognostic indicators by ICS region

Indicator	Southern	Western & Central	North Eastern	Barwon SW	Grampians	Loddon - Mallee	Hume	Gippsland
% melanoma >1.5 mm thick	19	18	18	25	23	19	19	22
Median breast cancer diameter in mm	16	16	16	16	18	15	15	16
90 th percentile breast cancer diameter in mm	35	37	38	34	35	35	35	33
% breast cancers detected by BreastScreen	26	27	24	36	28	28	20	28
% prostate cancers Gleason score > 7	15	16	17	18	22	18	18	19

Table 3 contains the 5-year survival estimates (and 95% confidence intervals) for all cancers combined and for the 10 most common cancers individually by ICS of residence at diagnosis. The p value in the first column indicates whether there are statistically significant differences between the ICS values. With few exceptions, there are significant differences in survival between regions. The exceptions are the same as those observed between metropolitan and non-metropolitan parts of Victoria, there being little variation in survival from breast cancer, rectal cancer and non-Hodgkin lymphoma. Colon cancer and kidney cancer also have only marginal statistically significant differences in survival at this level of regional aggregation.

Table 3: 5-year survival % estimates (and 95% confidence intervals) for persons living with cancer in 2004 by ICS region of residence at diagnosis with p-value for variation between regions

CANCER p-value	Southern	Western & Central	North Eastern	Barwon South Western	Grampians	Lodden-Mallee	Hume	Gippsland
All cancer p<0.01	62 (61-63)	58 (57-60)	64 (63-65)	58 (56-60)	59 (57-62)	60 (58-62)	59 (57-62)	57 (55-60)
Stomach p<0.01	26 (21-32)	29 (22-37)	26 (20-31)	20 (11-29)	26 (10-43)	16 (6-25)	25 (12-39)	16 (6-27)
Colon p=0.04	62 (59-66)	63 (59-68)	65 (61-69)	61 (54-67)	63 (54-71)	58 (51-66)	63 (56-71)	63 (55-70)
Rectum p=0.64	62 (57-67)	62 (56-68)	64 (59-69)	65 (57-74)	66 (55-77)	61 (51-70)	65 (55-75)	61 (50-71)
Pancreas p<0.01	5 (3-8)	9 (4-13)	6 (3-9)	2 (0-4)	2 (0-6)	1 (0-3)	7 (1-14)	3 (0-7)
Lung p<0.01	12 (10-14)	10 (8-12)	12 (10-14)	10 (7-13)	8 (4-12)	8 (5-11)	11 (7-15)	8 (5-12)
Melanoma p<0.01	90 (86-93)	86 (81-91)	94 (91-97)	89 (83-95)	81 (71-92)	90 (84-95)	86 (79-93)	90 (84-95)
Breast p=0.13	87 (85-90)	85 (82-88)	89 (86-91)	88 (84-92)	85 (80-91)	90 (85-94)	88 (83-93)	86 (81-91)
Prostate p<0.01	86 (83-89)	83 (79-87)	86 (83-89)	70 (64-76)	77 (70-85)	89 (84-94)	86 (79-92)	74 (67-81)
Kidney p=0.02	67 (63-71)	71 (66-75)	71 (67-75)	55 (48-62)	65 (55-73)	74 (66-81)	62 (53-70)	63 (54-72)
Non-Hodgkin lymphoma p=0.75	63 (58-68)	66 (60-73)	67 (62-72)	72 (64-81)	63 (49-76)	71 (61-81)	71 (60-81)	60 (49-72)