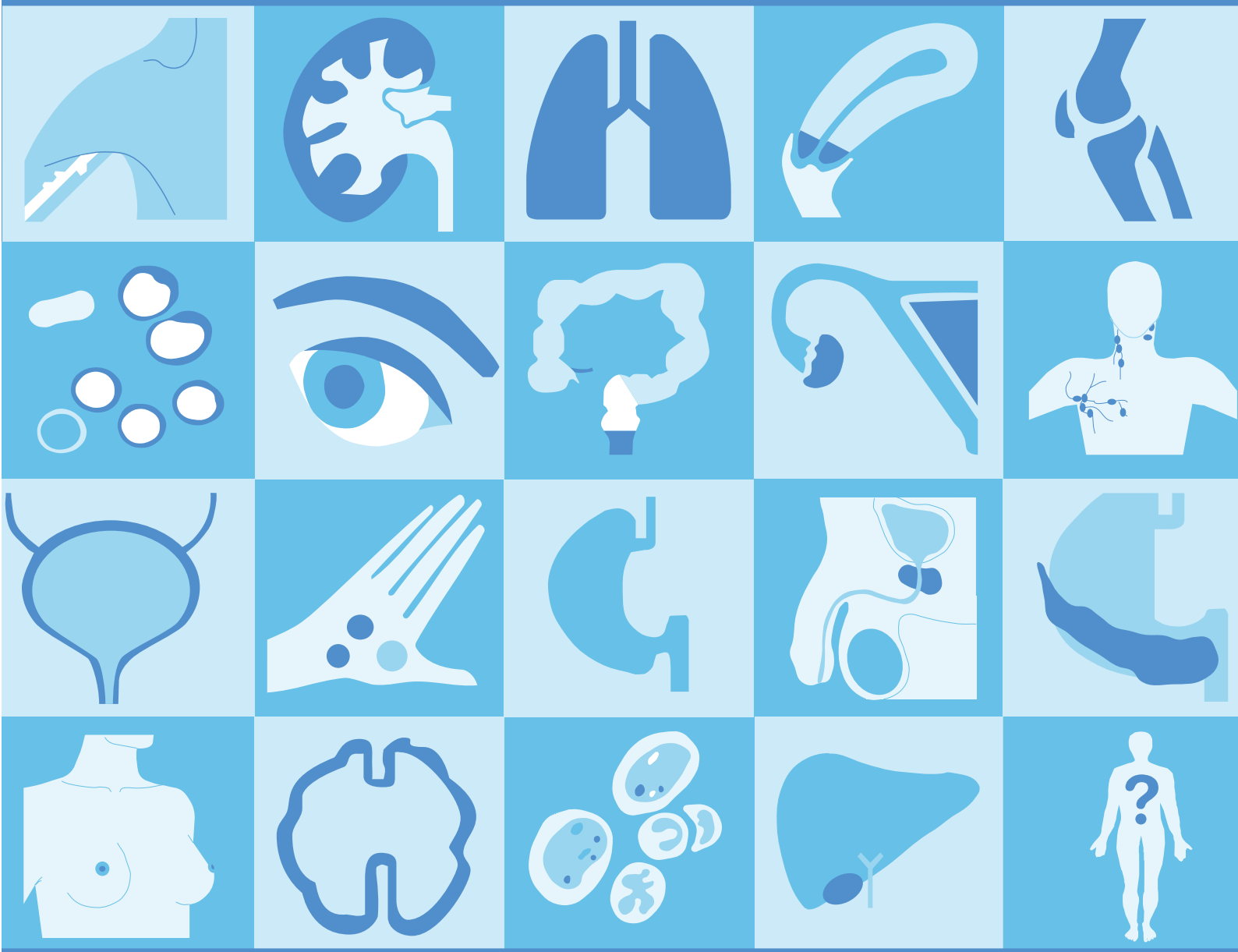
Cancer Survival Victoria 2012



Cancer Survival Victoria 2012

This report is a summary of the latest survival figures for Victorians with cancer in 2006-2010. It includes:

- tables for all cancers combined for all Victorians, for children aged under 15 years and for adolescents and young adults aged 15-24 years.
- separate tables for 35 common cancer types.
- for each cancer, differences are examined by sex, age at diagnosis, region of residence and a variety of prognostic factors which may influence survival.
- for the first time, we are also able to present survival by disease stage for selected cancers - tumour thickness for melanoma, TNM stage for breast cancer and Gleason score for prostate cancer.

This report updates survival figures previously published in English D, Farrugia H, Thursfield V, Cheng P, Giles G. Cancer Survival Victoria 2007: Estimates of survival in 2004 (and comparisons with earlier periods). Cancer Council Victoria, Melbourne, 2007.

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Cancer Survival Victoria 2012

Estimates of survival in 2006-2010 (and comparisons with earlier periods)

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August 2012

Message from the Director

Summary

I am delighted to present Cancer Survival Victoria 2012 which describes survival for Victorians with cancer in 2006-2010. This report is a significant achievement for cancer information in Victoria.

The relative currency of our incidence data allows us to present survival for a recent period. In addition, for the first time, survival by disease stage is included for melanoma (tumour thickness), female breast cancer (TNM stage) and prostate cancer (Gleason score).

As well as providing updates to the figures presented in our previous survival report[1], other new inclusions are overall survival and survival by cancer type in Victorian children (aged under 15 years) and adolescent and young adults (15-24 years), and survival for haematological malignancies by clinical groups (see pages 84-87 for definitions).

The data demonstrates continuing improvement. Not only has survival increased from 47% to 65% since 1986-1990, but it is pleasing to note that the gains are continuous with a significant increase from 60% to 65% between the 2001-2005 and 2006-2010 time periods for Victorians with cancer. Of course, what is lacking is an ability to better understand factors that have influenced these gains, as our population-based data capture does not include stage for most cancers as well as prognostic indicators and treatment modalities.

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.

I would also 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.

Finally, my thanks go to the following clinicians who have provided, at very short notice, some clinical interpretation of the results presented in this report. This task was not made easy by the current lack of population-based information on prognostic indicators and treatment.

Prof David Ball, A/Prof Mark Frydenberg, Dr Hui Gan, A/Prof Dorota Gertig, A/Prof Michael Jefford, A/Prof John Kelly, Dr Orla McNally, Prof Finlay MacRae, Prof Bruce Mann, A/Prof Jeremy Millar, Dr Julie Miller, A/Prof Paul Mitchell, A/Prof Robert Rome, Prof Mark Rosenthal, Prof John Seymour, A/Prof Ray Synder, Mr Gavin Wright.

Disclaimer: 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.

Helen Farrugia,

Director, Victorian Cancer Registry

1. English D, Farrugia H, Thursfield V, Cheng P, Giles G. Cancer Survival Victoria 2007: Estimates of survival in 2004 (and comparisons with earlier periods). Cancer Council Victoria, Melbourne, 2007

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Overview

This report aims to provide descriptive information regarding survival patterns for Victorians with cancer in 2006-2010. Detailed figures for all cancer - for all Victorians, children aged under 15 years, and adolescents and young adults aged 15-24 years, and for 35 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 (98%), thyroid (93%), prostate (91%), melanoma (90%), breast (89%) and Hodgkin lymphoma (88%).

Cancers with the lowest 5-year survival were pancreas (6%), mesothelioma (6%), liver (14%), lung (14%) and cancers of unknown primary site (13%).

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 and cancers of unknown primary site. 5-year survival was higher for women than men for the following cancers – all cancer, and cancers of the lung, salivary glands, thyroid, CNS and for melanoma.

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 71% for women aged under 45 years to 15% for women aged over 75 years whereas breast cancer survival only decreased from 89% to 80% over the same age groups.

Period of diagnosis

Most cancers showed improvements in survival over the 20-year period from 1986-90 to 2006-10. Cancers for which there was no evidence of improvement over this period were those of the larynx and renal pelvis.

Morphology of disease at diagnosis

For all cancer groups for which analysis was undertaken, differences were observed by tumour morphology. See pages for all cancer (including children and AYA) and cancers of the lung, breast, cervix, ovary, bladder, kidney, CNS, thyroid and unknown primary 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.

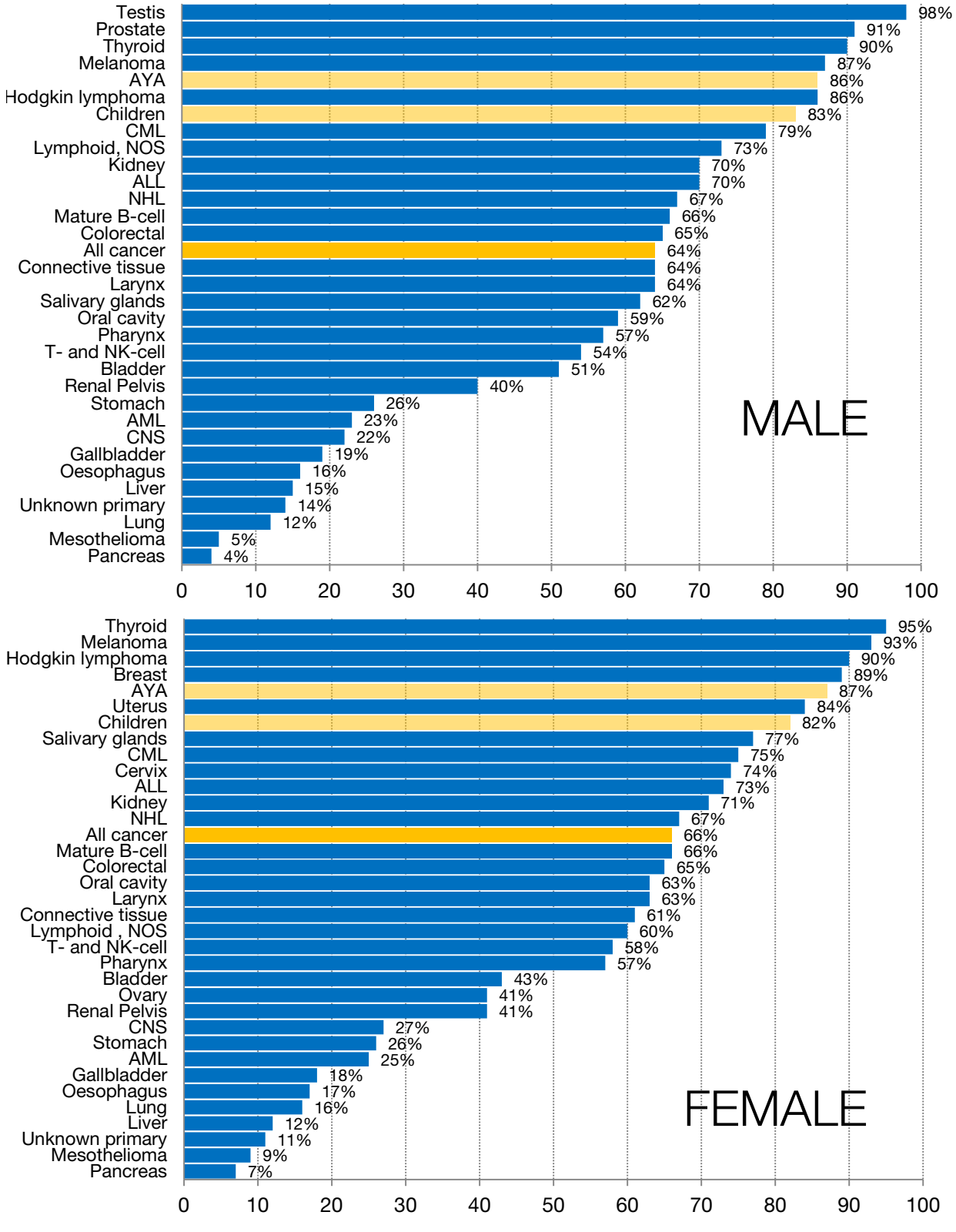
Stage (breast cancer), Gleason score (prostate cancer) and thickness (melanoma)

For the first time, survival by these site-specific prognostic factors has been included in this report. See the relevant pages for details.

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

Cancer site/group	All	Male	Female
All cancer	**65**	**64**	**66**
Children (< 15 years)	82	83	82
AYA (15-24 years)	87	86	87
Oral cavity	60	59	63
Salivary glands	70	62	77
Pharynx	57	57	57
Oesophagus	16	16	17
Stomach	26	26	26
Colorectum	65	65	65
Liver	14	15	12
Gallbladder	18	19	18
Pancreas	6	4	7
Larynx	63	64	63
Lung	14	12	16
Melanoma	90	87	93
Mesothelioma	6	5	9
Connective tissue	62	64	61
Breast (female)	-	-	89
Cervix	-	-	74
Uterus	-	-	84
Ovary	-	-	41
Prostate	-	91	-
Testis	-	98	-
Kidney	70	70	71
Renal Pelvis	40	40	41
Bladder	49	51	43
CNS	24	22	27
Thyroid	93	90	95
Unknown primary	13	14	11
Hodgkin lymphoma	88	86	90
Mature B-cell neoplasms	66	66	66
Mature T- and NK-cell neoplasm	56	54	58
Acute lymphoblastic leukaemia	71	70	73
Non-Hodgkin lymphoma	68	67	67
Lymphoid neoplasm, NOS	67	73	60
Acute myeloid leukaemia	24	23	25
Chronic myeloid leukaemia	77	79	75

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 2006-2010 and in comparison with earlier periods.

In this report, as in our previous report, Cancer Survival Victoria 2007[1], we use "period" survival 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 2006-2010 uses the first year interval survival for patients diagnosed in 2010, the two year interval survival from patients diagnosed in 2009, 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 88-89.

Put simply, the 5-year survival figures presented in the tables show the estimated proportion of Victorians with a particular cancer in 2006-2010 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 cancer and proceeding in the order of the International Classification of Diseases, Tenth Revision[2].

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 2006-2010,

  Deaths in the following items refers to the number of deaths in the period 2006-2010 in patients with a particular cancer.

- deaths and 5-year survival by sex and age group for Victorians with cancer in 2006-2010,

- deaths and 5-year survival by place of usual residence at the time of diagnosis (metropolitan Melbourne or the rest of Victoria) for Victorians with cancer in 2006-2010,

- 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 the periods 1986-1990, 1991-1995, 1996-2000, 2001-2005 and 2006-2010.

- 5-year survival for each of the subgroups has been adjusted for age at diagnosis, year of diagnosis and sex.

Figures

- survival by year from diagnosis to 5 years for all Victorians with cancer in the periods 1986-1990, 1991-1995, 1996-2000, 2001-2005 and 2006-2010.

- survival by year from diagnosis to five years for all Victorians with cancer in 2006-20104 by sex.

- survival by year from diagnosis to five years for all Victorians with cancer in 2006-20104 by age group.

- survival by year from diagnosis to five years for all Victorians with cancer in 2006-2010 by tumour subsite or morphology group as shown in Table 1.

Victorian cancer incidence and mortality

A summary of new cases, incidence rates, deaths and mortality rates in Victoria in 2006-2010 is given in Appendix IV (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.

Survival estimates for selected cancers

ALL CANCER

Table 1: Survival by years after diagnosis, sex, age group, region of residence, Integrated Cancer Services region and tumour morphology for all Victorians with cancer in 2006-2010 and for selected periods.

Years after diagnosis	Number of deaths	Survival (%)	95% confidence interval	
1	27,219	80	(80, 81)	
2	10,450	74	(73, 74)	
3	6,185	70	(69, 70)	
4	4,552	67	(67, 67)	
5	3,525	65	(65, 65)	
By subgroup	**Number of deaths**	**5-year survival (%)**	**95% confidence interval**	**p-value**
All cases	51,931	65	(65, 65)	
Sex				
Male	30,446	64	(64, 65)	< 0.01
Female	21,485	66	(66, 66)	
Age at diagnosis				
0-14	125	82	(80, 85)	< 0.01
15-29	250	88	(87, 89)	
30-44	1,366	84	(83, 85)	
45-54	3,649	76	(76, 77)	
55-64	7,971	73	(73, 74)	
65-74	12,896	65	(65, 66)	
75+	25,674	46	(46, 47)	
Region of residence				
Melbourne	34,954	66	(66, 66)	< 0.01
Rest of Victoria	16,977	63	(62, 63)	
Integrated Cancer Services Region				
Southern	14,097	66	(66, 67)	< 0.01
Western and Central	8,985	63	(62, 63)	
North Eastern	11,872	68	(67, 68)	
Barwon	4,354	63	(62, 64)	
Grampians	2,704	60	(59, 62)	
Loddon-Mallee	3,671	65	(63, 66)	
Hume	2,978	64	(63, 65)	
Gippsland	3,270	60	(59, 62)	
Tumour morphology group				
Squamous and transitional cell carcinoma	5,538	52	(51, 53)	< 0.01
Adenocarcinoma	23,889	74	(74, 74)	
Other specific carcinoma	3,739	31	(30, 33)	
Unspecified carcinoma	1,902	17	(16, 19)	
Sarcomas and soft tissue tumour	508	61	(59, 64)	
Kaposi sarcoma	31	84	(72, 94)	
Mesothelioma	648	6	(4, 8)	
Other specified types of cancer	4,944	77	(76, 78)	
Leukaemia	1,803	51	(49, 52)	
Lymphoma	1,929	75	(73, 76)	
No histological confirmation	6,999	11	(11, 12)	
Selected periods				
1986-1990	39,689	47	(47, 48)	<0.01/<0.01[1]
1991-1995	46,123	51	(51, 52)	
1996-2000	47,292	58	(57, 58)	
2001-2005	48,929	60	(60, 61)	
2006-2010	51,931	65	(65, 65)	

1. The first p-value tests for difference in survival for the two most recent periods (i.e. the period from 2001-2005 with the period from 2006-2010). The second p-value tests fro the trend across all periods shown.

The 5-year survival for Victorians with cancer is 65%.

Sex Survival was better for women (66%) than for men (64%).

Age at diagnosis Older age at diagnosis was associated with worse survival, with survival ranging from 82% for persons diagnosed before the age of 45 to 46% for those aged over 75 years.

Regional comparisons Survival was higher for residents of Melbourne (66%) than the rest of Victoria (63%).

Integrated Cancer Services regions There were small, but statistically significant, differences in survival for Victorians living in different Integrated Cancer Services (ICS) regions. Five-year survival ranged from 60% for Gippsland and Grampians to 68% for North Eastern metropolitan residents.

These estimates are based on each person's region of usual residence at the time of their cancer diagnosis and does not necessarily relate to the region in which they received their treatment.

Differences in survival between residents of different ICS regions could be due to a variety of factors including differences in demographic structure and the mix of cancer types diagnosed. For instance, a region with more lung cancers will experience a poorer overall outcome than an ICS with a larger proportion of patients with less fatal cancers.

When considering individual cancer types, variation in survival between regions is going to be influenced largely by differences in stage of disease at diagnosis and their potential curability. Currently there is little information available on the distribution of cancers by stage in Victoria, but the cancer registry does collect thickness for melanoma, stage for breast cancer and Gleason score for prostate cancer, all of which are indicators of disease stage, and survival by these prognostic factors is included in this report for the first time.

Tumour morphology There were differences in survival between tumour morphology groups, with the lowest proportions seen for mesotheliomas (6%) and for tumours with less specific morphology (unspecified carcinomas (17%) and tumours with no histological confirmation (11%).

Time trends: Survival improved over the 20 year period from 1986-1990 to 2006-2010 from 47% to 65%, and also between the last two five-year periods, 2001-2005 to 2006-2010 from 60% to 65%.

Figure 1: Survival by year

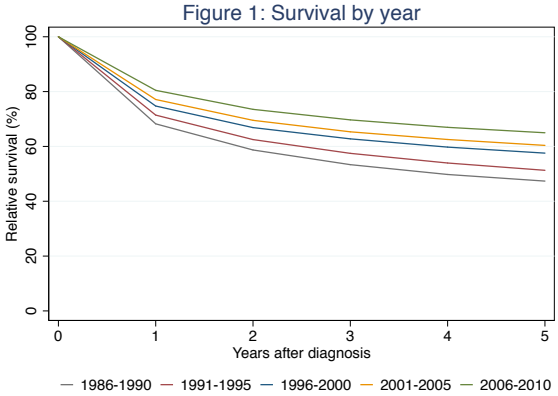


Figure 2: Survival by sex

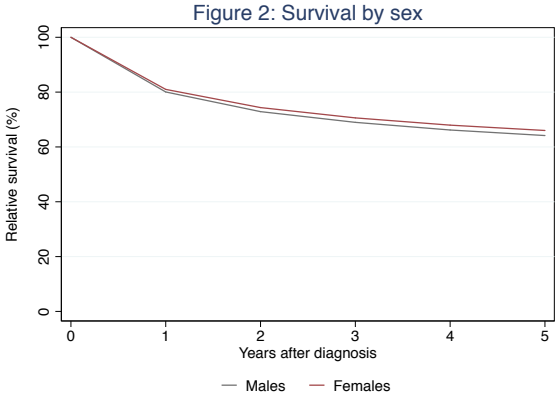


Figure 3: Survival by age group

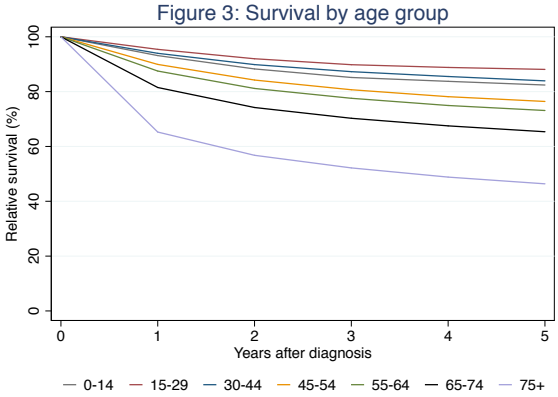
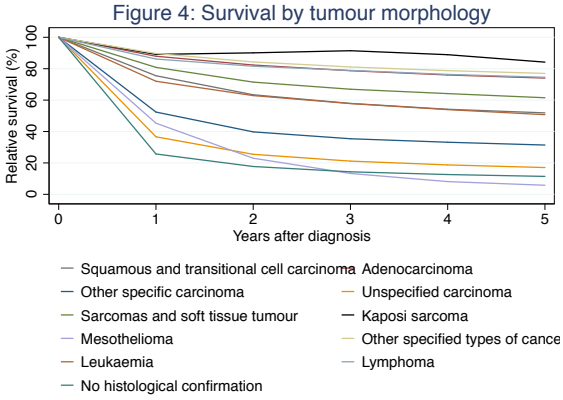


Figure 4: Survival by tumour morphology



CHILDREN
(Aged under 15 years)

The 5-year survival for children diagnosed with cancer before the age of fifteen years is 82%.

Sex Survival was similar for boys (83%) and girls (82%).

Tumour type Childhood tumours are grouped according to the International Classification for Childhood Cancer (ICCC), a classification based on tumour morphology that describes the groups of cancers commonly found in children. There were significant differences in survival between tumour groups, ranging from 44% for liver cancers, and 59% for tumours of the brain and central nervous system, to over 90% for germ cell tumours and the most common cancers of childhood, leukaemia and lymphoma.

Reference: Steliarova-Foucher E, Stiller C, Lacour B, Kaatsch P. International Classification of Childhood Cancer, Third Edition. Cancer 2005;103:1457-67. American Cancer Society.

Table 1: Survival by years after diagnosis, sex, region of residence, ICCC groups for all Victorian children with cancer in 2006-2010 and for selected periods.

Years after diagnosis	Number of deaths	Survival (%)	95% confidence interval	
1	50	93	(91, 95)	
2	34	88	(86, 90)	
3	22	85	(83, 87)	
4	10	84	(81, 86)	
5	9	82	(80, 85)	
By subgroup	**Number of deaths**	**5-year survival (%)**	**95% confidence interval**	**p-value**
All cases	125	82	(80, 85)	
Sex				
Male	67	83	(79, 86)	0.65
Female	58	82	(77, 85)	
Region of residence				
Melbourne	93	82	(79, 85)	0.67
Rest of Victoria	32	83	(78, 88)	
ICCC groups				
Leukaemia	23	92	(88, 94)	< 0.01
Lymphoma	6	93	(86, 97)	
Brain and CNS	43	59	(49, 67)	
Neuroblastoma	13	71	(55, 82)	
Retinoblastoma	0	100	(100, 100)	
Kidney	3	92	(79, 97)	
Liver	9	44	(21, 64)	
Bone	5	79	(60, 90)	
Soft tissue	19	63	(49, 74)	
Germ cell	1	96	(79, 100)	
Epithelial neoplasms	3	88	(69, 96)	
Selected periods				
1986-1990	174	70	(67, 73)	0.28/<0.01[1]
1991-1995	179	73	(70, 76)	
1996-2000	161	76	(73, 79)	
2001-2005	136	80	(78, 83)	
2006-2010	125	82	(80, 85)	

1. The first p-value tests for difference in survival for the two most recent periods (i.e. the period from 2001-2005 with the period from 2006-2010). The second p-value tests fro the trend across all periods shown.

Though the gains in survival are now less spectacular than they were following the advent of chemotherapy, potential increases in survival are likely to result from advances in the following areas:

- Disease-targeted chemotherapy - cytogenetic testing now allows identification of very specific subtypes of cancer and the precise tailoring of chemotherapy regimens to achieve best prognosis.
- Development of new conformal radiotherapeutic approaches in the treatment of non-resectable brain tumours appear to be effective and offer potential for reducing the acute and long-term toxicities previously associated with this treatment modality.
- Advances in bone marrow and peripheral stem cell transplantation techniques.
- Recent treatment protocols adapting intensity of radiation therapy to individual patients and shortening the length of intensive chemotherapy appear to improve outcome.

Regional comparisons Survival did not differ based on regional or metropolitan residence.

Time trends Survival improved over the twenty years from 1986-1990 to 2006-2010 from 70% to 82%.

Figure 1: Survival by year

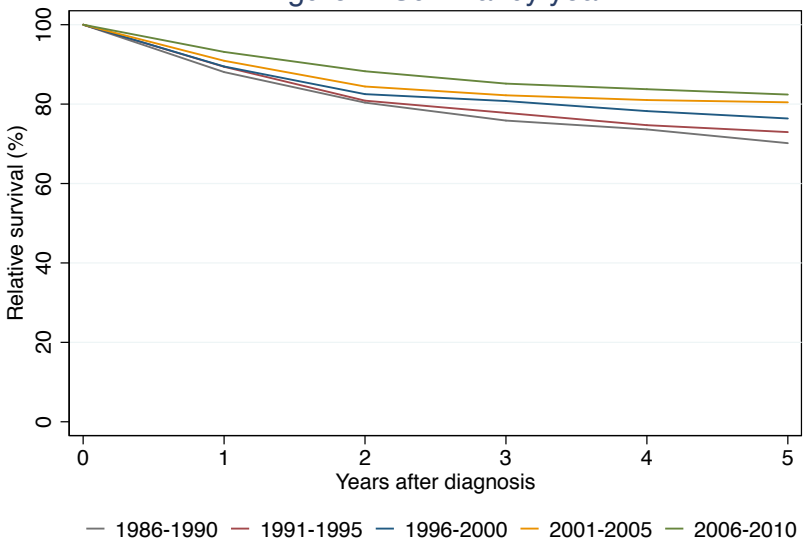
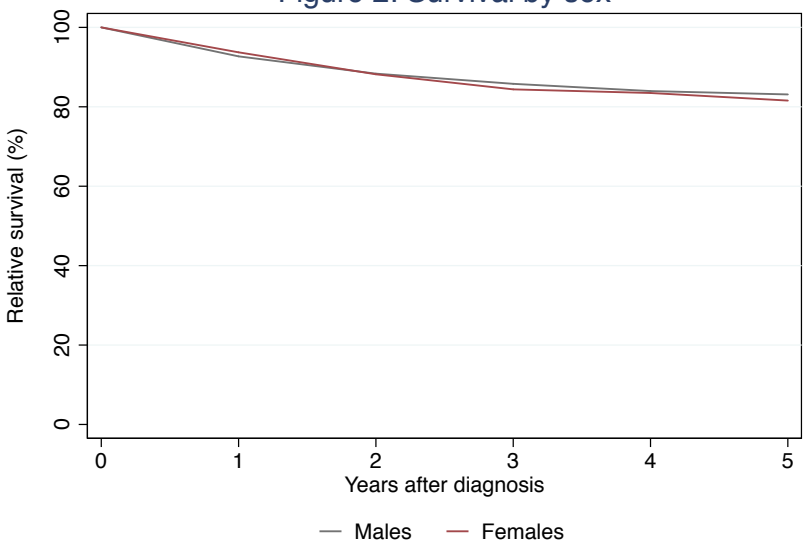


Figure 2: Survival by sex



ADOLESCENTS AND YOUNG ADULTS (Aged 15-24 years)

The 5-year survival for adolescents and young adults (AYA) with cancer is 87%.

Sex Survival was similar for young women (87%) and men (86%).

Cancer type There were differences in survival between cancer types, though survival in AYA compares favourably with the same tumour groups in older adults. The lowest survival was for leukaemia (66%) and cancers of the connective tissue and ovary (both 68%) whilst five-year survivals for thyroid and testicular cancers, and melanoma were all over 95%.

Regional comparisons Survival did not differ significantly between residents of Melbourne and the rest of Victoria .

Time trends Survival improved over the 20 year period from 1986-1990 to 2006-2010 from 78% to 87%.

Note The 100% relative survival for thyroid cancer indicates that during the period 2006-2010, mortality in adolescents and young adults with thyroid cancer was the same as that in the general population..

Table 1: Survival by years after diagnosis, sex, region of residence and selected cancers for all Victorian AYA with cancer in 2006-2010 and for selected periods.

Years after diagnosis	Number of deaths	Survival (%)	95% confidence interval	
1	55	95	(93, 96)	
2	45	90	(89, 92)	
3	22	88	(86, 90)	
4	11	87	(85, 89)	
5	7	87	(85, 88)	
By subgroup	**Number of deaths**	**5-year survival (%)**	**95% confidence interval**	**p-value**
All cases	140	87	(85, 88)	
Sex				
Male	79	86	(83, 88)	0.46
Female	61	87	(84, 90)	
Region of residence				
Melbourne	106	86	(84, 88)	0.56
Rest of Victoria	34	88	(84, 91)	
Selected cancers				
Non-Hodgkin Lymphoma	11	85	(75, 91)	< 0.01
Melanoma	8	96	(91, 98)	
Testis	1	99	(95, 100)	
Leukaemia	36	66	(57, 74)	
Thyroid	0	100	(100, 100)	
Brain and CNS	17	70	(57, 79)	
Bone	13	70	(55, 81)	
Connective tissue	12	68	(52, 79)	
Bowel	5	83	(65, 93)	
Ovary	9	68	(48, 81)	
Selected periods				
1986-1990	194	78	(76, 81)	$0.81/<0.01$[1]
1991-1995	188	81	(78, 83)	
1996-2000	152	85	(83, 87)	
2001-2005	125	87	(85, 89)	
2006-2010	140	87	(85, 88)	

1. The first p-value tests for difference in survival for the two most recent periods (i.e. the period from 2001-2005 with the period from 2006-2010). The second p-value tests fro the trend across all periods shown.

Figure 1: Survival by year

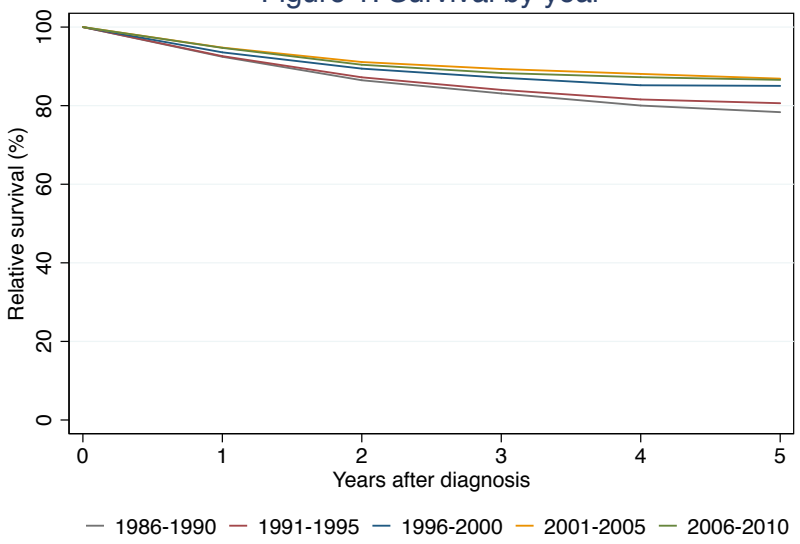
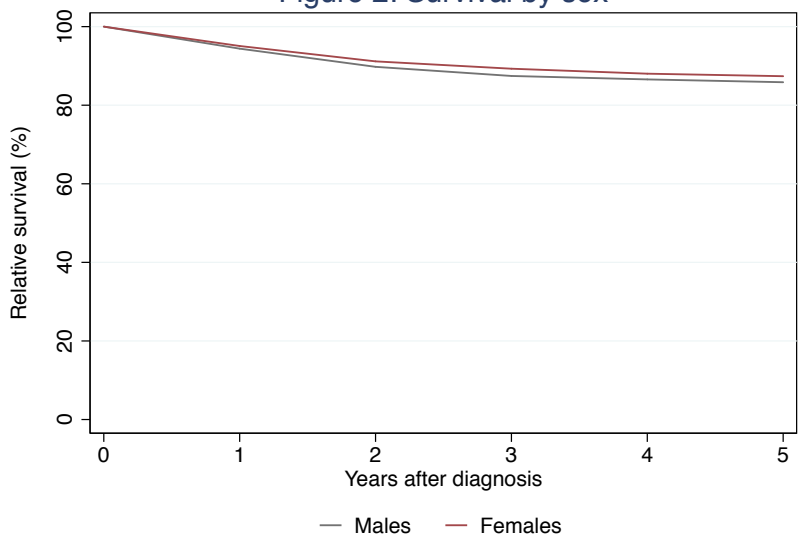


Figure 2: Survival by sex



ALL ORAL CAVITY

The 5-year survival for people with oral cancer is 60%.

Sex Survival was slightly higher for women (63%) than for men (59%).

Age at diagnosis Older age at diagnosis was associated with worse survival with a range in 5-year survival from 78% for persons diagnosed under 45 years to 50% for those over 75 years.

Subsite There were slight differences in survival between tumour subsites within the oral cavity with tongue and gum cancers tending to have a better prognosis than those of the floor of mouth and palate.

Regional comparisons Survival was higher in residents of Melbourne (63%) than the rest of Victoria (54%).

Time trends Survival improved over the 20 year period from 1986-1990 to 2006-2010 from 51% to 60%.

A clinician's comment "The improvement in survival from oral cancer is encouraging, presumably related to factors such as improved imaging (helical CT scans, MRI and PET) that have become increasingly available allowing better delineation and staging of disease which then impacts favourably on treatment decisions and outcomes."

Table 1: Survival by years after diagnosis, sex, age group, region of residence and tumour subsite for Victorians with cancer of the oral cavity in 2006-2010 and for five-year periods from 1986-1990.

Years after diagnosis	Number of deaths	Survival (%)	95% confidence interval	
1	218	84	(82, 86)	
2	157	71	(69, 74)	
3	63	67	(64, 70)	
4	53	63	(60, 66)	
5	40	60	(57, 63)	
By subgroup	**Number of deaths**	**5-year survival (%)**	**95% confidence interval**	**p-value**
All cases	531	60	(57, 63)	
Sex				
Male	338	59	(55, 63)	0.75
Female	193	63	(58, 67)	
Age at diagnosis				
0-44	20	78	(68, 85)	< 0.01
45-54	48	76	(69, 81)	
55-64	122	61	(55, 66)	
65-74	151	54	(48, 60)	
75+	190	50	(43, 57)	
Region of residence				
Melbourne	340	63	(60, 67)	0.01
Rest of Victoria	191	54	(49, 59)	
Subsite				
Tongue	271	61	(57, 66)	0.31
Gum	40	71	(61, 81)	
Floor mouth	76	55	(47, 63)	
Palate	144	57	(51, 63)	
Selected periods				
1986-1990	452	51	(47, 54)	0.43/<0.01[1]
1991-1995	517	49	(46, 53)	
1996-2000	499	57	(54, 60)	
2001-2005	492	59	(56, 62)	
2006-2010	531	60	(57, 63)	

1. The first p-value tests for difference in survival for the two most recent periods (i.e. the period from 2001-2005 with the period from 2006-2010). The second p-value tests fro the trend across all periods shown.

Figure 1: Survival by year

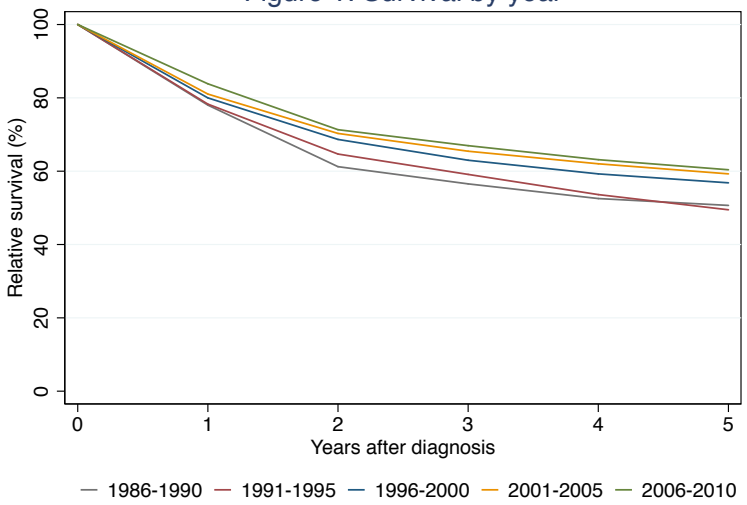


Figure 2: Survival by sex

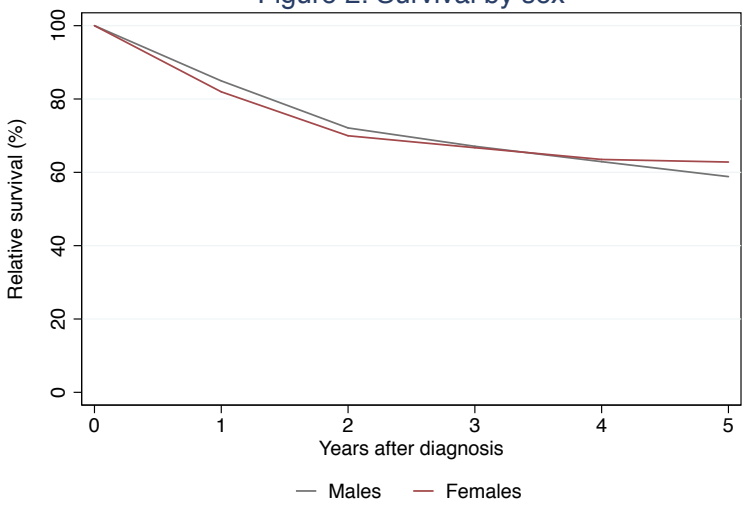
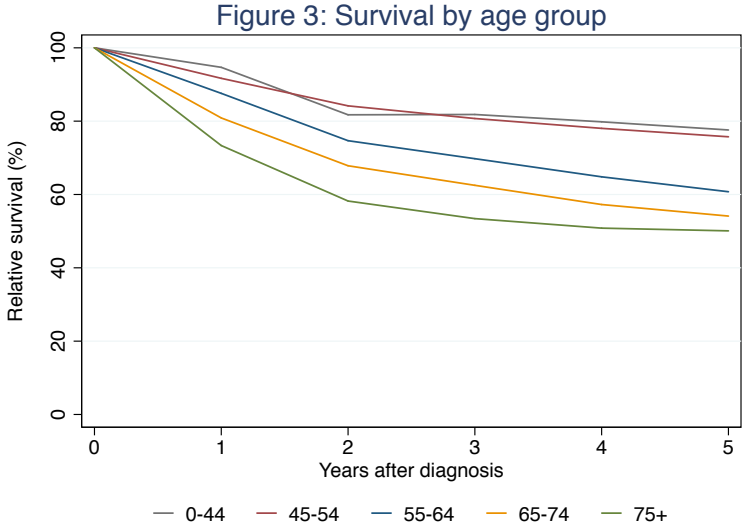


Figure 3: Survival by age group



SALIVARY GLANDS

The 5-year survival for people with salivary gland cancer is 70%.

Sex Survival was higher for women (77%) than for men (62%).

Tumour subsite Survival for patients with tumours of the parotid gland (73%) was slightly higher than for those with cancers of other salivary glands (59%).

Regional comparisons Survival did not differ between residents of Melbourne and the rest of Victoria.

Time trends Survival improved over the 20 year period from 1986-1990 from 64% to 70%.

Note Analysis includes only primary parotid gland tumours and not the more common metastatic squamous cell carcinoma of skin origin.

Table 1: Survival by years after diagnosis, sex, region of residence and tumour subsite for Victorians with salivary gland cancer in 2006-2010 and for five-year periods from 1986-1990.

Years after diagnosis	Number of deaths	Survival (%)	95% confidence interval	
1	26	93	(90, 96)	
2	34	82	(77, 87)	
3	18	76	(70, 81)	
4	10	73	(66, 78)	
5	8	70	(63, 75)	
By subgroup	**Number of deaths**	**5-year survival (%)**	**95% confidence interval**	**p-value**
All cases	96	70	(63, 75)	
Sex				
Male	60	62	(52, 70)	0.02
Female	36	77	(68, 84)	
Region of residence				
Melbourne	63	70	(62, 77)	0.77
Rest of Victoria	33	70	(58, 80)	
Subsite				
Parotid	64	73	(66, 80)	0.05
Other salivary gland	32	59	(46, 70)	
Selected periods				
1986-1990	85	64	(56, 71)	0.41/0.01[1]
1991-1995	102	59	(52, 66)	
1996-2000	71	75	(68, 82)	
2001-2005	70	75	(68, 81)	
2006-2010	96	70	(63, 75)	

1. The first p-value tests for difference in survival for the two most recent periods (i.e. the period from 2001-2005 with the period from 2006-2010). The second p-value tests fro the trend across all periods shown.

Figure 1: Survival by year

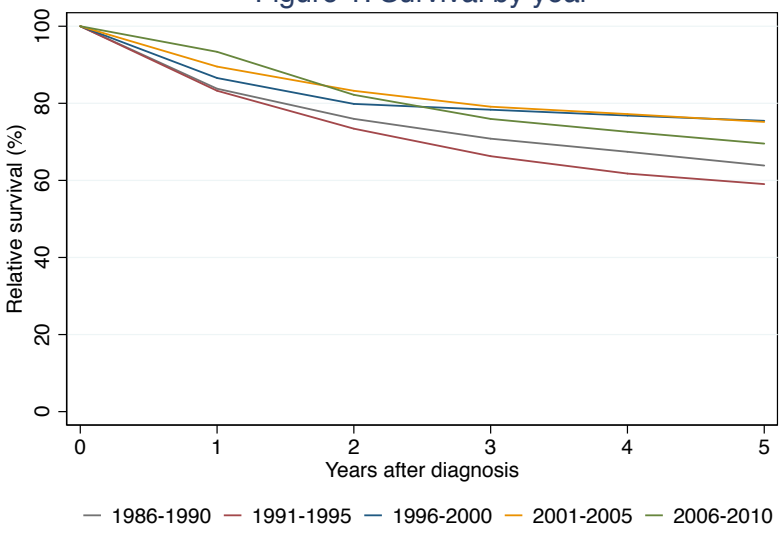
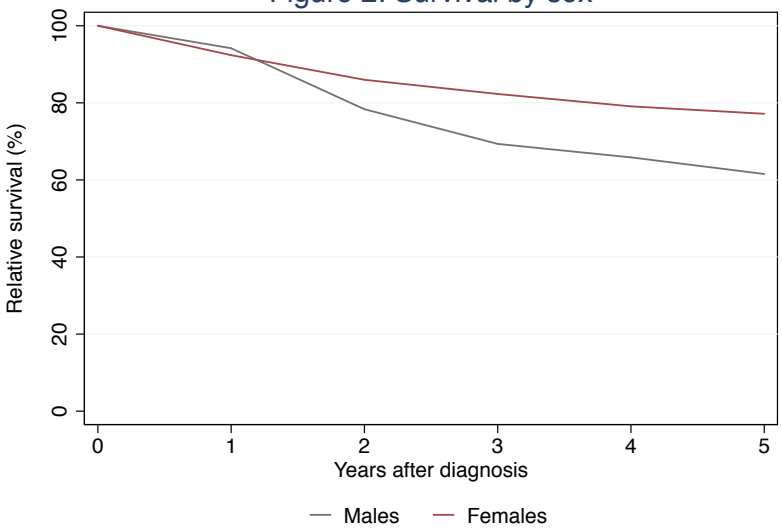


Figure 2: Survival by sex



PHARYNX

The 5-year survival for people with pharyngeal cancer is 57%.

Sex Survival was similar for women and men.

Age at diagnosis Older age at diagnosis was associated with worse survival, with survival declining from 88% for persons diagnosed before the age of 45 to 40% for those over 75 years.

Tumour subsite There were differences in survival between tumour subsites, with the proportions highest in nasopharyngeal tumours (75%) and lowest for cancers of the hypopharynx (28%).

Regional comparisons Survival was higher for residents of Melbourne (59%) than the rest of Victoria (52%).

Time trends Survival improved over the 20 year period from 1986-1990 to 2006-2010, and from 30% to 57% and between 2001-2005 and 2006-1010 from 52% to 57%.

A clinician's comment "The group of tumours within the pharynx includes very different natural histories. Nasopharyngeal cancer is very responsive to radiotherapy and chemotherapy and is generally considered a

Table 1: Survival by years after diagnosis, sex, region of residence, age group and tumour subsite for Victorians with pharyngeal cancer in 2006-2010 and for five-year periods from 1986-1990.

Years after diagnosis	Number of deaths	Survival (%)	95% confidence interval	
1	144	80	(78, 83)	
2	83	69	(66, 72)	
3	40	64	(61, 67)	
4	34	60	(56, 63)	
5	23	57	(53, 61)	
By subgroup	**Number of deaths**	**5-year survival (%)**	**95% confidence interval**	**p-value**
All cases	324	57	(53, 61)	
Sex				
Male	260	57	(53, 61)	0.83
Female	64	57	(48, 64)	
Age at diagnosis				
0-44	9	88	(79, 93)	< 0.01
45-54	48	73	(66, 78)	
55-64	103	54	(47, 60)	
65+	164	40	(34, 46)	
Region of residence				
Melbourne	217	59	(55, 64)	0.05
Rest of Victoria	107	52	(45, 58)	
Subsite				
Oropharynx	164	61	(56, 66)	< 0.01
Nasopharynx	44	75	(68, 81)	
Hypopharynx	116	28	(22, 35)	
Selected periods				
1986-1990	436	30	(27, 34)	0.05/<0.01[1]
1991-1995	448	37	(33, 40)	
1996-2000	359	48	(44, 52)	
2001-2005	359	52	(48, 56)	
2006-2010	324	57	(53, 61)	

1. The first p-value tests for difference in survival for the two most recent periods (i.e. the period from 2001-2005 with the period from 2006-2010). The second p-value tests fro the trend across all periods shown.

different disease from other head and neck cancers. Oropharyngeal cancer has, stage for stage, a much better prognosis than hypopharyngeal cancer.

Clearly technical improvements in surgery, supportive care and staging (including PET) have contributed to the increasing survival over the last 20 years. The use of adjuvant chemotherapy, together with radiotherapy, have now gained general acceptance, and may also have contributed to improved survival. The use of cetuximab is unlikely to be driving survival benefits so much as reducing toxicity.

However, the a major driver of improved survival is likely the increasing frequency of HPV-positive disease, which we know is major positive prognostic factor."

Figure 1: Survival by year

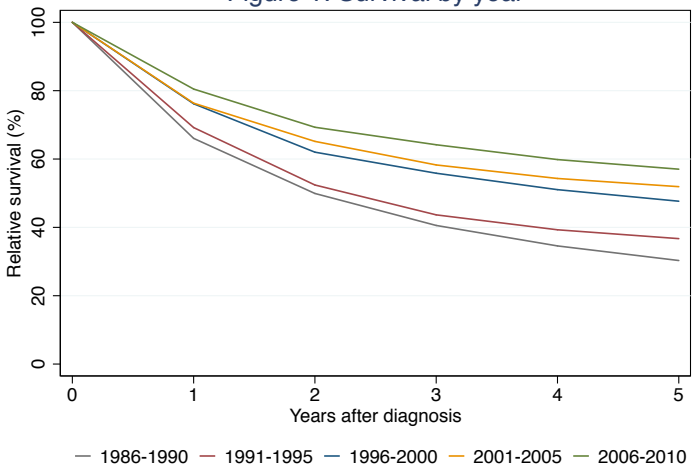


Figure 2: Survival by sex

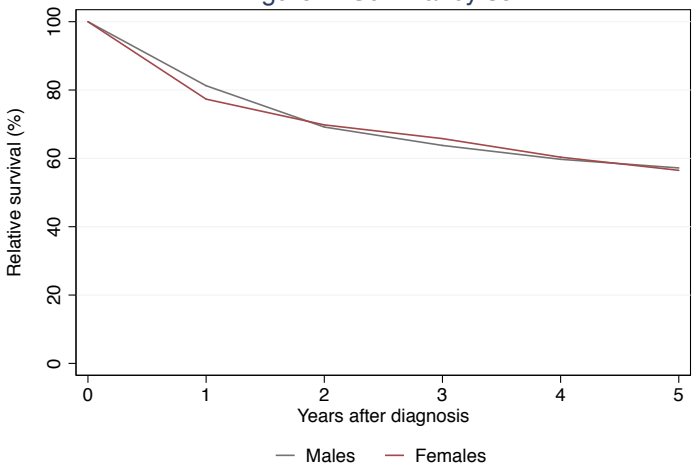
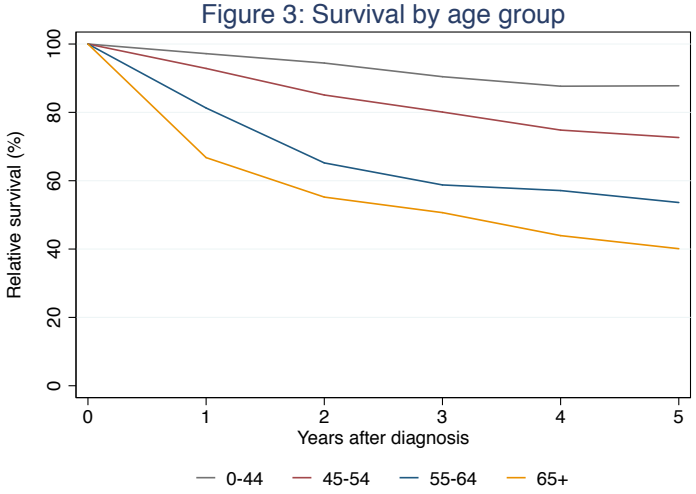


Figure 3: Survival by age group



OESOPHAGUS

The 5-year survival for people with oesophageal cancer is 16%.

Sex Survival was slightly lower for men (16%) then women (17%).

Age at diagnosis Older age at diagnosis was associated with worse survival, with survival ranging from 27% for persons diagnosed before the age of 55 to just 10% for those over 75 years.

Regional comparisons Survival was higher for residents of Melbourne (19%) than the rest of Victoria (12%).

Integrated Cancer Services regions There were significant differences in survival between the Integrated Cancer Services regions with five-year survival ranging from 9% in Gippsland to 21% in the North Eastern Metropolitan region.

Table 1: Survival by years after diagnosis, sex, region of residence, ICS region and age group for Victorians with oesophageal cancer in 2006-2010 and for five-year periods from 1986-1990.

Years after diagnosis	Number of deaths	Survival (%)	95% confidence interval	
1	875	47	(44, 49)	
2	302	27	(25, 30)	
3	97	22	(20, 23)	
4	54	18	(17, 20)	
5	34	16	(15, 18)	
By subgroup	**Number of deaths**	**5-year survival (%)**	**95% confidence interval**	**p-value**
All cases	1,362	16	(15, 18)	
Sex				
Male	922	16	(14, 18)	0.47
Female	440	17	(14, 20)	
Age at diagnosis				
0-54	116	27	(20, 33)	< 0.01
55-64	249	21	(17, 26)	
65-74	357	18	(15, 22)	
75+	640	10	(8, 12)	
Region of residence				
Melbourne	857	19	(17, 21)	< 0.01
Rest of Victoria	505	12	(9, 15)	
Integrated Cancer Services Region				
Southern	371	19	(15, 23)	0.01
Western and Central	232	17	(13, 21)	
North Eastern	254	21	(17, 26)	
Barwon	126	14	(9, 20)	
Grampians	79	10	(5, 18)	
Loddon-Mallee	98	14	(9, 21)	
Hume	95	12	(7, 18)	
Gippsland	107	9	(5, 15)	
Selected periods				
1986-1990	918	10	(8, 12)	0.34/<0.01[1]
1991-1995	1,090	13	(11, 15)	
1996-2000	1,100	15	(13, 18)	
2001-2005	1,201	17	(15, 19)	
2006-2010	1,362	16	(15, 18)	

1. The first p-value tests for difference in survival for the two most recent periods (i.e. the period from 2001-2005 with the period from 2006-2010). The second p-value tests fro the trend across all periods shown.

Time trends Survival improved over the 20 year period from 1986-1990 to 2006-2010 from 10% to 16%.

A clinician's comment "Interpretation of these figures needs to reflect the changing pattern of oesophageal cancer in our community, with incidence of adenocarcinoma continuing to rise.

Significant improvements in survival over the past 20 years reflect the effort placed into the management of oesophageal cancer with optimal outcomes most likely to be achieved through centralised, specialist units. The widespread use of multimodality therapy (surgery, chemotherapy and radiotherapy), which can be curative for patients with early stage squamous cell cancer, has contributed to improved survival, with improvements in post-operative management also important.

Patients with dysplastic Barrett's oesophagus are increasingly managed at specialist centres where the use of confocal endomicroscopy allows careful assessment for invasive cancer which, when diagnosed in this context, is usually early stage. This is often manageable endoscopically (especially in the old and frail) or surgically, with excellent outcomes following."

Figure 1: Survival by year

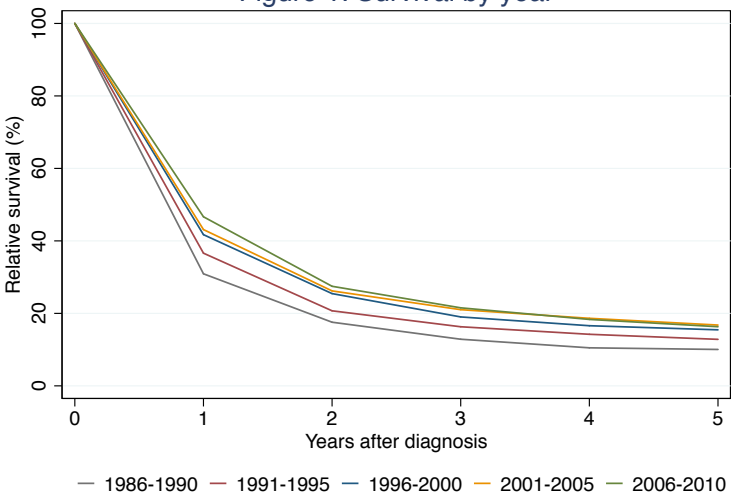


Figure 2: Survival by sex

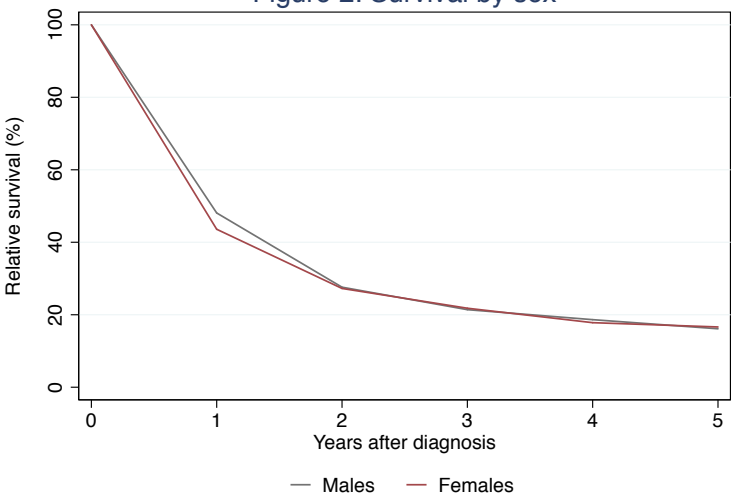
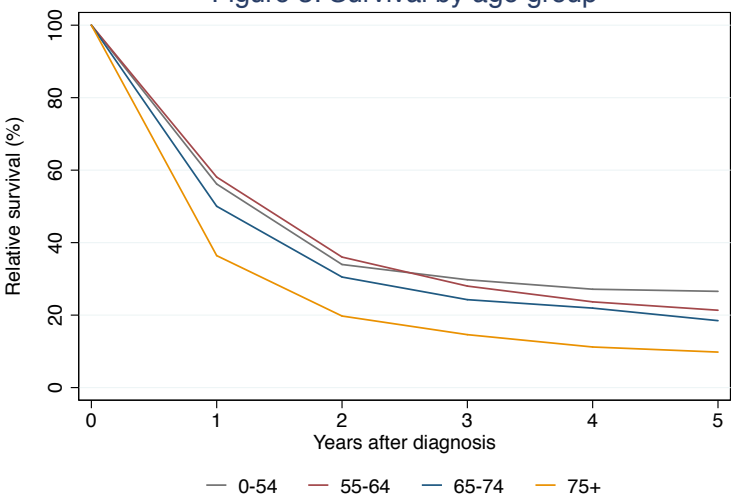


Figure 3: Survival by age group



STOMACH

The 5-year survival for people with stomach cancer is 26%.

Sex 5-year survival (26%) was the same for women and men.

Age at diagnosis Older age at diagnosis was associated with worse survival, with proportions ranging from 33% for persons under 45 years and 18% for those aged over 75 years.

Regional comparisons Survival was higher for residents of Melbourne (29%) than the rest of Victoria (19%).

Integrated Cancer Services regions Survival for the ICS regions varied between 15% and 29%, with proportions

Table 1: Survival by years after diagnosis, sex, region of residence, Integrated Cancer Services region and age group for Victorians with stomach cancer in 2006-2010 and for five-year periods from 1986-1990.

Years after diagnosis	Number of deaths	Survival (%)	95% confidence interval	
1	1,277	52	(50, 54)	
2	422	37	(35, 38)	
3	174	30	(29, 32)	
4	79	28	(26, 29)	
5	51	26	(25, 28)	
By subgroup	**Number of deaths**	**5-year survival (%)**	**95% confidence interval**	**p-value**
All cases	2,003	26	(25, 28)	
Sex				
Male	1,293	26	(24, 28)	0.51
Female	710	26	(24, 29)	
Age at diagnosis				
0-44	76	33	(26, 41)	< 0.01
45-64	485	31	(28, 35)	
65-74	490	31	(28, 34)	
75+	952	18	(16, 21)	
Region of residence				
Melbourne	1,410	29	(27, 31)	< 0.01
Rest of Victoria	593	19	(16, 22)	
Integrated Cancer Services Region				
Southern	530	29	(26, 33)	< 0.01
Western and Central	416	28	(25, 32)	
North Eastern	464	29	(26, 33)	
Barwon	158	21	(15, 27)	
Grampians	89	15	(9, 22)	
Loddon-Mallee	120	21	(15, 29)	
Hume	100	17	(11, 24)	
Gippsland	126	16	(10, 22)	
Selected periods				
1986-1990	2,030	17	(16, 19)	0.31/<0.01[1]
1991-1995	2,046	20	(18, 21)	
1996-2000	2,078	21	(20, 23)	
2001-2005	2,019	25	(24, 27)	
2006-2010	2,003	26	(25, 28)	

1. The first p-value tests for difference in survival for the two most recent periods (i.e. the period from 2001-2005 with the period from 2006-2010). The second p-value tests fro the trend across all periods shown.

for Barwon and Loddon-Mallee being closer to those for metropolitan Melbourne than the other regional ICS.

Time trends Survival improved over the 20 year period from 1986-1990 to 2006-2010 from 17% to 26%.

A clinician's comment "A modest improvement in survival is noted. There is a changing pattern and type of gastric cancer occurring with less intestinal cancer and more proximal diffuse cancer. This may impact on survival. A 5-year survival of 26% does indicate that a nihilistic approach to this disease is unreasonable and that a small group can achieve long-term survival and in fact cure of disease. Specialist unit activity is needed for management of gastric cancer."

Figure 1: Survival by year

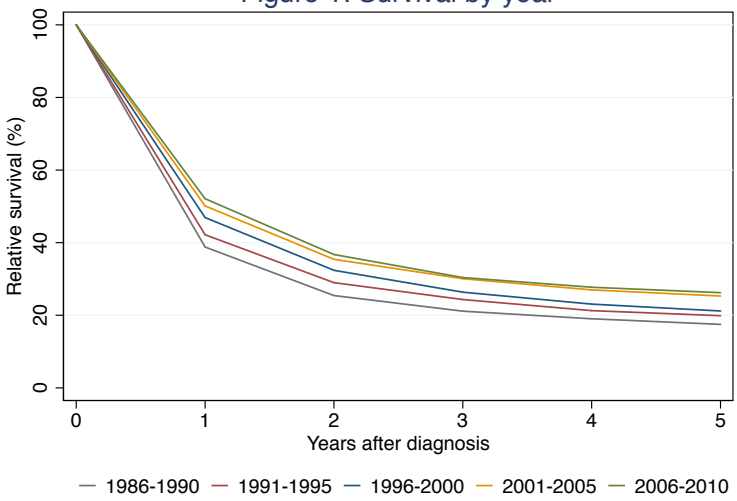


Figure 2: Survival by sex

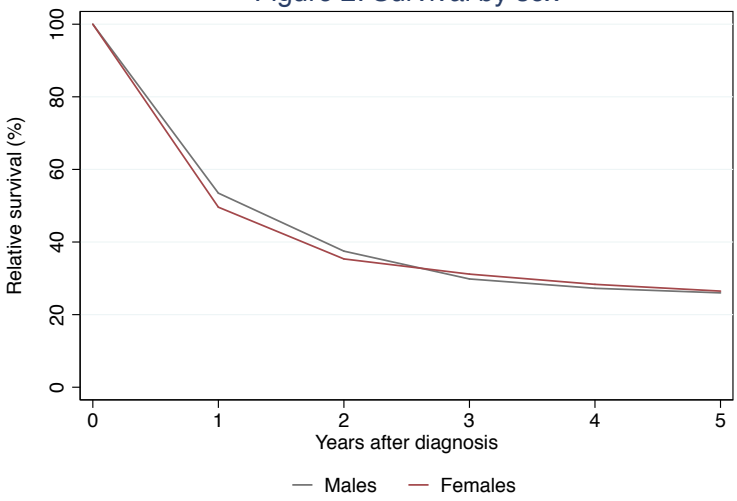
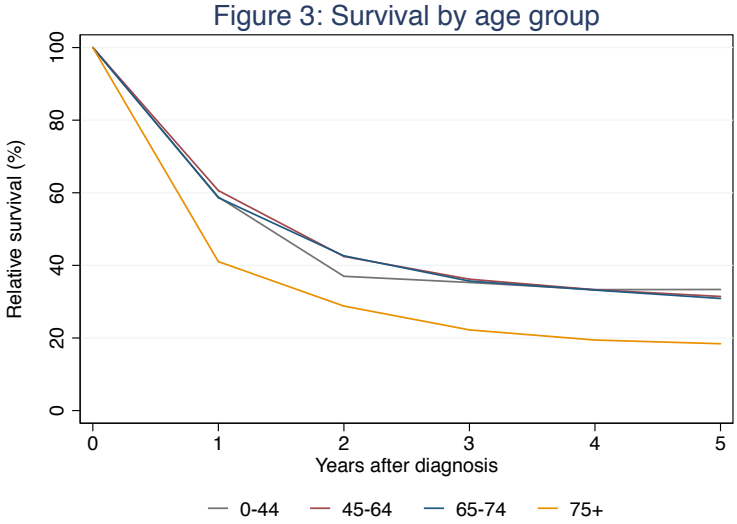


Figure 3: Survival by age group



LARGE BOWEL (Colorectum)

The 5-year survival for people with bowel cancer is 65%.

Sex There was no difference in survival for men and women.

Age at diagnosis Older age at diagnosis was associated with worse survival with proportions ranging from 74% for persons under 45 years and 57% for those aged over 75 years.

Regional comparisons Survival was higher in residents of Melbourne (67%) than those from the the rest of Victoria (61%).

Table 1: Survival by years after diagnosis, sex, region of residence, Integrated Cancer Services region and age group for Victorians with colorectal cancer in 2006-2010 and for five-year periods from 1986-1990.

Years after diagnosis	Number of deaths	Survival (%)	95% confidence interval	
1	2,987	85	(84, 86)	
2	1,698	77	(76, 78)	
3	1,217	71	(71, 72)	
4	894	67	(67, 68)	
5	662	65	(64, 66)	
By subgroup	**Number of deaths**	**5-year survival (%)**	**95% confidence interval**	**p-value**
All cases	7,458	65	(64, 66)	
Sex				
Male	4,177	65	(63, 66)	0.78
Female	3,281	65	(64, 66)	
Age at diagnosis				
0-44	173	74	(70, 77)	< 0.01
45-54	475	69	(67, 71)	
55-64	1,054	70	(69, 72)	
65-74	1,803	68	(67, 70)	
75+	3,953	57	(56, 59)	
Region of residence				
Melbourne	4,806	67	(66, 68)	< 0.01
Rest of Victoria	2,652	61	(60, 62)	
Integrated Cancer Services Region				
Southern	1,859	68	(67, 70)	< 0.01
Western and Central	1,266	63	(61, 65)	
North Eastern	1,681	68	(66, 69)	
Barwon	666	62	(59, 65)	
Grampians	425	58	(55, 62)	
Loddon-Mallee	568	62	(59, 65)	
Hume	471	61	(58, 65)	
Gippsland	522	60	(57, 63)	
Selected periods				
1986-1990	6,265	49	(48, 50)	<0.01/<0.01[1]
1991-1995	7,015	52	(51, 53)	
1996-2000	7,266	57	(56, 58)	
2001-2005	7,517	61	(60, 62)	
2006-2010	7,458	65	(64, 66)	

1. The first p-value tests for difference in survival for the two most recent periods (i.e. the period from 2001-2005 with the period from 2006-2010). The second p-value tests fro the trend across all periods shown.

Integrated Cancer Services regions There were significant differences in survival between the ICS regions with values ranging from 58% in the Grampians to 68% in Southern and North-Eastern Metropolitan regions.

Time trends Survival improved over the 20 year period from 1986-1990 to 2006-2010 from 49% to 65%, and between the two most recent periods from 61% to 65%.

A clinician's comment "The improved survival is probably due to a combination of better treatment, including the use of multimodality and adjuvant therapy, and earlier detection of disease.

The National Bowel Cancer Screening Program should eventually result in further survival improvements.

This program currently offers screening using Faecal Occult blood testing (FOBT) to all Australians aged 50, 55 and 65 years. As part of the 2012-2013 Federal Budget, the Australian Government announced that the National Bowel Cancer Screening Program will be expanded to include Australians turning 60 years of age from 2013 and those turning 70 years of age from 2015."

Figure 1: Survival by year

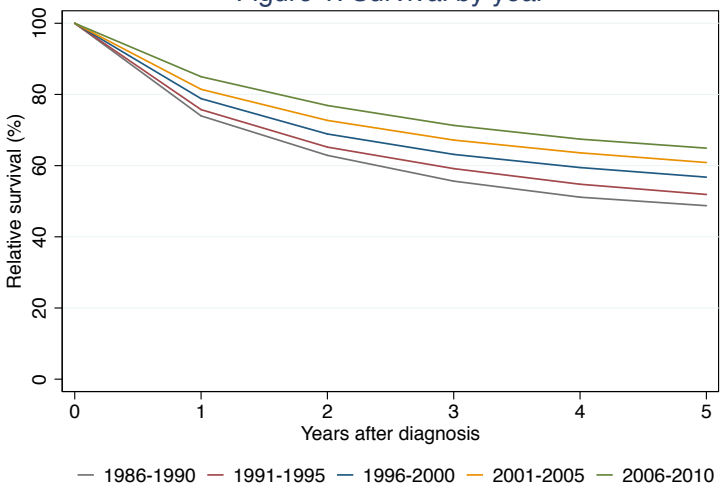


Figure 2: Survival by sex

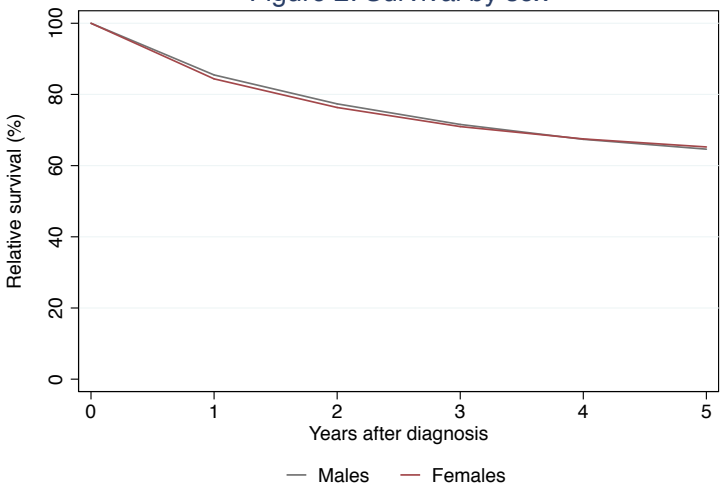
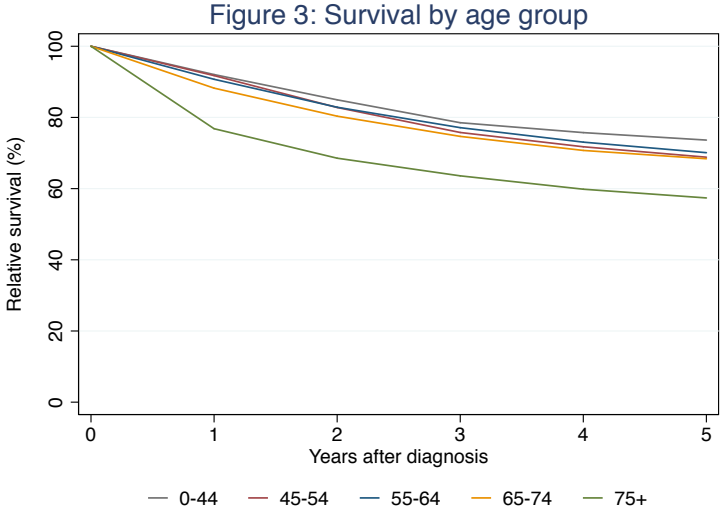


Figure 3: Survival by age group



LIVER

The 5-year survival for people with liver cancer is 14%, amongst the lowest for all cancers.

Age at diagnosis Older age at diagnosis was strongly associated with worse survival, being 25% for persons aged under 55 years falling to only 5% for those aged over 75 years at diagnosis.

Regional comparisons Survival was higher for residents of Melbourne (16%) than the rest of Victoria (10%).

Time trends Survival improved over the 20 year period from 1986-1990 to 2006-2010 from 5% to 14%, and between the two most recent periods from 2001-2005 to 2006-2010 from 12% to 14%.

A clinician's comment "While the 5-year survival for people with liver cancer remains poor at 14%, there has been a very significant, and continuing, improvement over the last twenty years. The reasons for this may include an increase in the proportion of cancers diagnosed at an early stage, favourable changes in epidemiology and improvement in treatment modalities. Certainly, screening for liver cancer in at-risk subjects is more prevalent over the past decade and tumours detected this way are often at an earlier stage and therefore associated with longer survival than those that present with symptoms.

Table 1: Survival by years after diagnosis, sex, age group and region of residence for Victorians with liver cancer in 2006-2010 and for five-year periods from 1986-1990.

Years after diagnosis	Number of deaths	Survival (%)	95% confidence interval	
1	892	41	(39, 43)	
2	218	28	(26, 30)	
3	114	21	(19, 23)	
4	51	17	(15, 19)	
5	33	14	(13, 16)	
By subgroup	**Number of deaths**	**5-year survival (%)**	**95% confidence interval**	**p-value**
All cases	1,308	14	(13, 16)	
Sex				
Male	938	15	(13, 17)	0.24
Female	370	12	(10, 16)	
Age at diagnosis				
0-54	226	25	(20, 29)	< 0.01
55-64	265	21	(17, 26)	
65-74	337	11	(8, 15)	
75+	480	5	(4, 8)	
Region of residence				
Melbourne	985	16	(14, 18)	< 0.01
Rest of Victoria	323	10	(7, 13)	
Selected periods				
1986-1990	322	5	(3, 7)	0.01/<0.01[1]
1991-1995	554	4	(3, 6)	
1996-2000	704	10	(8, 12)	
2001-2005	1,015	12	(10, 14)	
2006-2010	1,308	14	(13, 16)	

1. The first p-value tests for difference in survival for the two most recent periods (i.e. the period from 2001-2005 with the period from 2006-2010). The second p-value tests fro the trend across all periods shown.

The epidemiology of liver cancer has also changed over this period. Hepatitis C viral infection is now a major risk factor for liver cancer and tumours related to this infection could have a better prognosis compared to those related to other factors such as Hepatitis B.

In contrast, the past two decades have witnessed few major developments in the treatment of liver cancer, particularly for those with unresectable disease. Liver transplantation remains the gold standard for treatment but as access to this modality remains poor it is doubtful that this is the major reason for the observed improved survival."

Figure 1: Survival by year

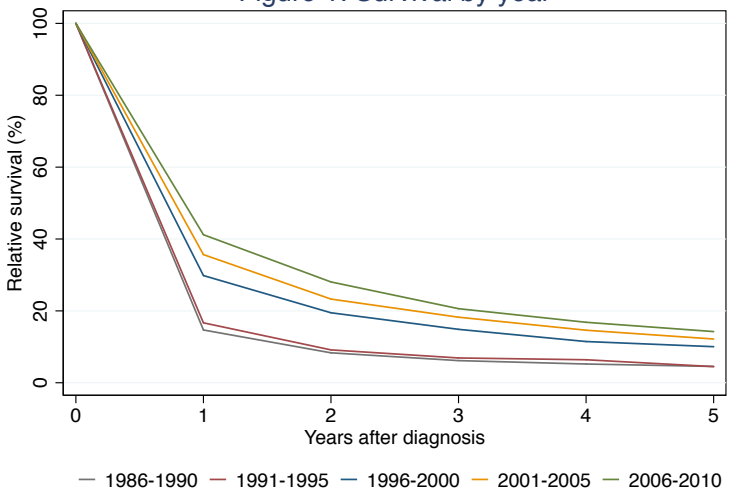


Figure 2: Survival by sex

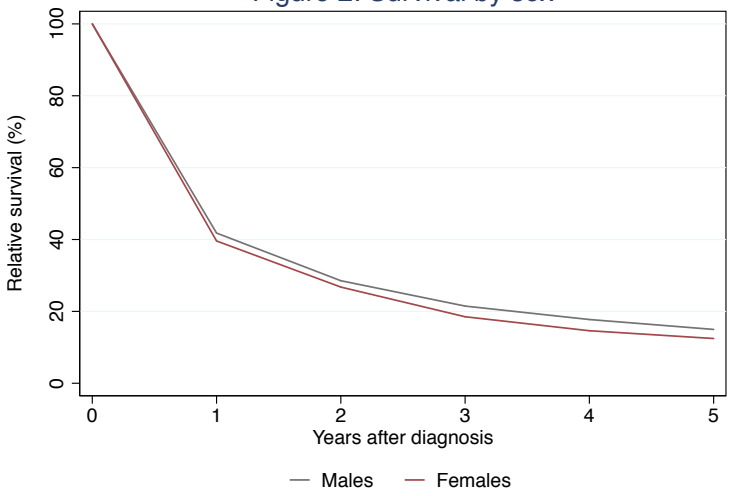
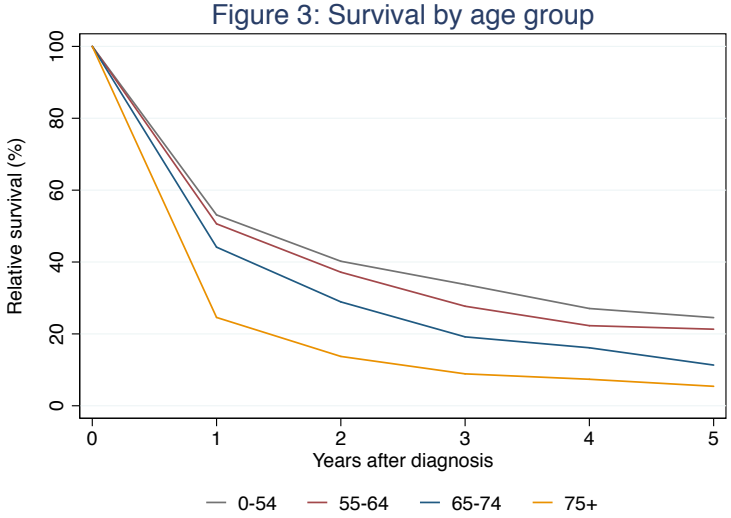


Figure 3: Survival by age group



GALLBLADDER

The 5-year survival for people with cancer of the gallbladder is 18%.

Sex Survival was similar in men and women.

Age at diagnosis Older age at diagnosis was associated with worse survival, being 29% for persons aged under 55 years falling to 13% for those aged over 75 years at diagnosis.

Regional comparisons Survival was higher in residents of Melbourne (21%) than those from the rest of Victoria (12%).

Time trends Survival improved over the 20 year period from 1986-1990 to 2006-2010 from 12% to 18%.

A clinician's comment "The changes in survival of gallbladder cancer over this period parallel those of liver cancer. Five-year survival has improved from 12% to 18%. The factors behind this trend are obscure. Nevertheless, improvements in the ability to diagnose, stage and treat this condition and related complications over the corresponding period are likely to have contributed to the improved patient outcomes."

Table 1: Survival by years after diagnosis, sex, age group and region of residence for Victorians with gallbladder cancer in 2006-2010 and for five-year periods from 1986-1990.

Years after diagnosis	Number of deaths	Survival (%)	95% confidence interval	
1	459	46	(43, 49)	
2	140	30	(27, 33)	
3	60	23	(21, 26)	
4	30	20	(18, 23)	
5	15	18	(16, 21)	
By subgroup	**Number of deaths**	**5-year survival (%)**	**95% confidence interval**	**p-value**
All cases	704	18	(16, 21)	
Sex				
Male	289	19	(15, 23)	0.50
Female	415	18	(15, 22)	
Age at diagnosis				
0-54	50	29	(20, 39)	< 0.01
55-64	114	22	(16, 28)	
65-74	198	21	(17, 27)	
75+	342	13	(9, 17)	
Region of residence				
Melbourne	510	21	(18, 24)	< 0.01
Rest of Victoria	194	12	(8, 16)	
Selected periods				
1986-1990	543	12	(9, 14)	0.20/<0.01[1]
1991-1995	629	14	(12, 17)	
1996-2000	674	14	(12, 17)	
2001-2005	607	17	(15, 20)	
2006-2010	704	18	(16, 21)	

1. The first p-value tests for difference in survival for the two most recent periods (i.e. the period from 2001-2005 with the period from 2006-2010). The second p-value tests fro the trend across all periods shown.

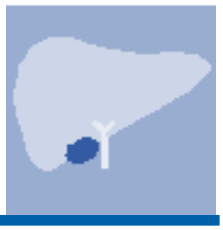


Figure 1: Survival by year

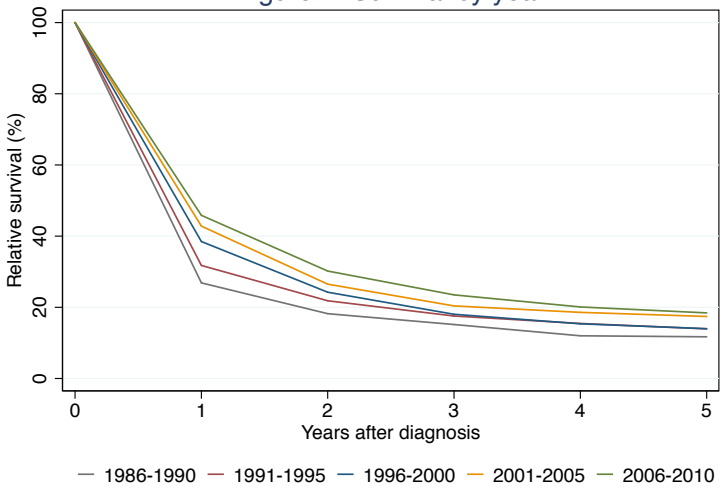


Figure 2: Survival by sex

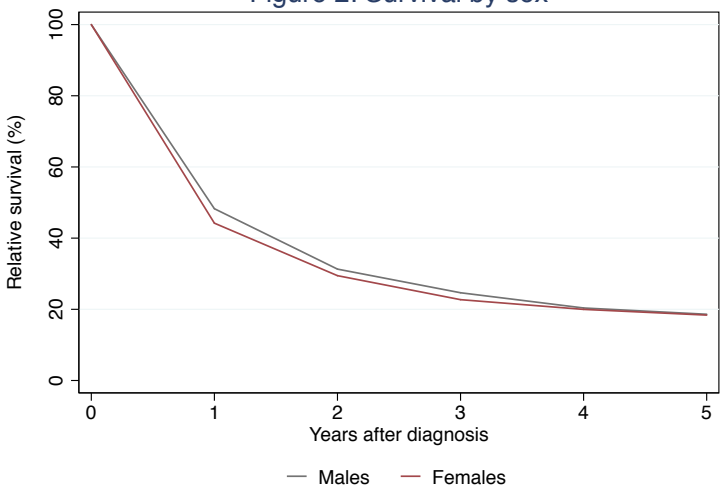
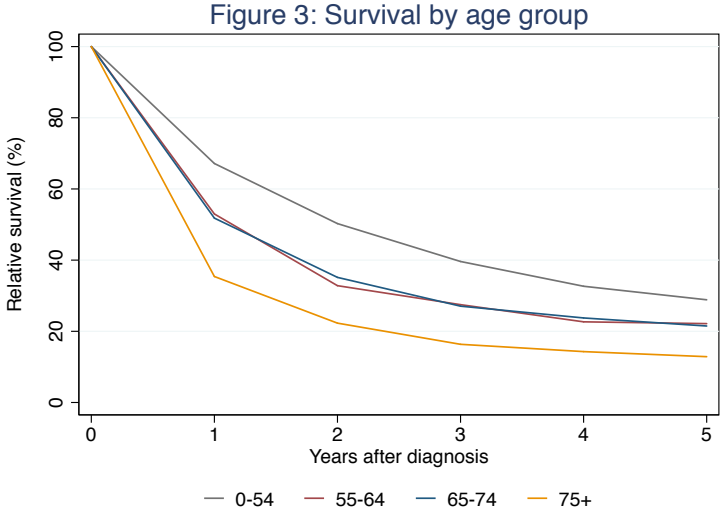


Figure 3: Survival by age group



PANCREAS

The 5-year survival for people with pancreatic cancer is 6%.

Sex Survival is similar for men and women and, for both men and women this cancer has the poorest survival of all cancers.

Age at diagnosis Older age at diagnosis was associated with worse survival; patients under 55 years (15%) having slightly better prognosis than older patients (3-8%).

Regional comparisons Survival was low for residents of both Melbourne and the rest of Victoria. There was slight, but not statistically significant, variation in survival between ICS regions.

Table 1: Survival by years after diagnosis, sex and age group for Victorians with pancreatic cancer in 2006-2010 and for five-year periods from 1986-1990.

Years after diagnosis	Number of deaths	Survival (%)	95% confidence interval	
1	2,169	24	(23, 26)	
2	402	11	(10, 12)	
3	95	8	(7, 9)	
4	42	6	(6, 7)	
5	21	6	(5, 6)	
By subgroup	**Number of deaths**	**5-year survival (%)**	**95% confidence interval**	**p-value**
All cases	2,729	6	(5, 6)	
Sex				
Male	1,486	4	(4, 6)	0.32
Female	1,243	7	(6, 8)	
Age at diagnosis				
0-54	226	15	(11, 20)	< 0.01
55-64	470	8	(6, 11)	
65-74	770	5	(4, 7)	
75+	1,263	3	(2, 4)	
Region of residence				
Melbourne	1,906	6	(5, 7)	0.11
Rest of Victoria	823	5	(4, 6)	
Integrated Cancer Services Region				
Southern	745	8	(6, 10)	0.08
Western and Central	517	6	(4, 8)	
North Eastern	644	4	(3, 6)	
Barwon	204	6	(3, 9)	
Grampians	126	5	(2, 10)	
Loddon-Mallee	178	6	(3, 11)	
Hume	158	5	(2, 10)	
Gippsland	157	2	(1, 5)	
Selected periods				
1986-1990	1,594	3	(3, 4)	0.04/<0.01[1]
1991-1995	1,770	4	(3, 5)	
1996-2000	2,015	4	(4, 5)	
2001-2005	2,301	5	(5, 6)	
2006-2010	2,729	6	(5, 6)	

1. The first p-value tests for difference in survival for the two most recent periods (i.e. the period from 2001-2005 with the period from 2006-2010). The second p-value tests fro the trend across all periods shown.

Time trends Survival improved over the 20 year period from 1986-1990 to 2006-2010 from 3% to 6%, and between the last two periods from 5% to 6%.

A clinician's comment "Poor outcomes are confirmed in this report for patients with pancreatic cancer.

The failure to show more improvement over time suggests that pancreatic cancer continues to present in a state too advanced for curative treatment.

The mainstay of management remains surgery. In specialist centres mortality and morbidity is reduced. Some improvements may be the result of post-operative adjuvant therapy.

Patients with early stage, potentially curable disease, often require combined modality therapy (radiation, chemotherapy and surgery).

Optimal outcomes are likely to be achieved through centralised, specialist units."

Figure 1: Survival by year

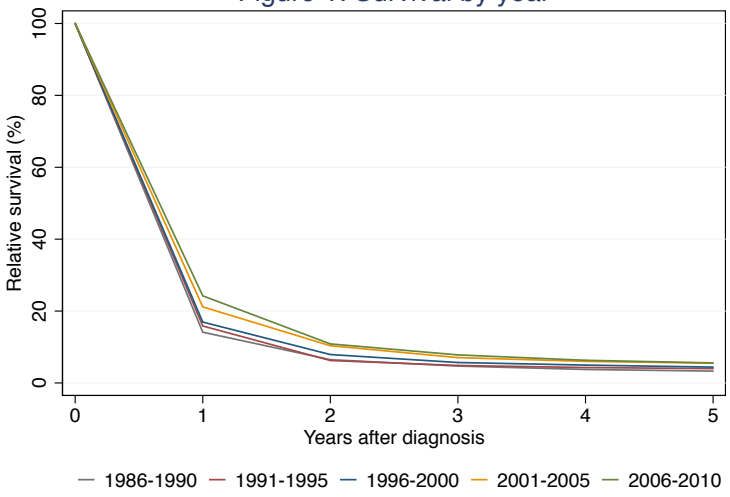


Figure 2: Survival by sex

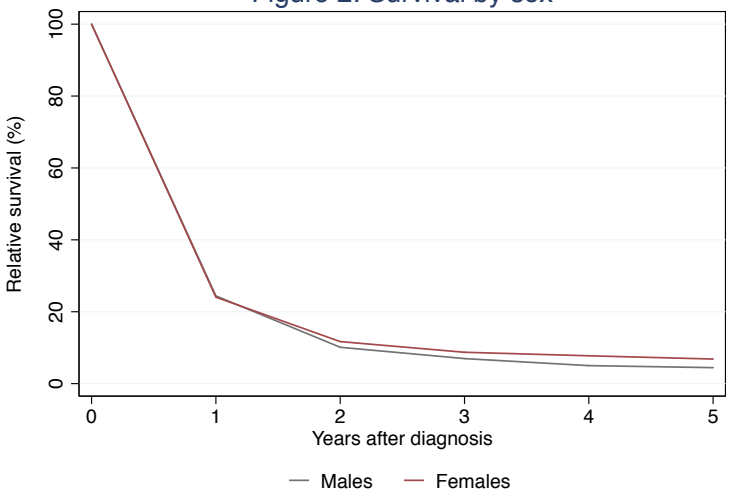
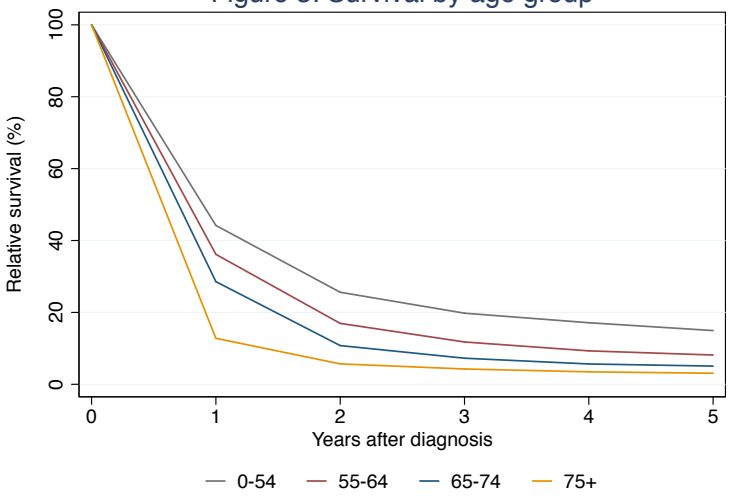


Figure 3: Survival by age group



LARYNX

The 5-year survival for people with cancer of the larynx is 63%.

Sex Survival was similar for men (64%) and women (63%).

Age at diagnosis Older age at diagnosis was associated with worse survival, patients under 55 years (79%) having slightly better prognosis than older patients (55%).

Regional comparisons Survival was slightly higher for residents of Melbourne than the rest of Victoria.

Time trends There was no significant change in survival over the period 1986-1990 to 2006-2010.

A clinician's comment "An interesting change has occurred, in most centres, in the management of more advanced staged larynx cancer from total laryngectomy and post-operative radiotherapy to use of larynx preservation protocols (concurrent chemotherapy and radiotherapy with surgery, total laryngectomy being reserved as salvage for those cases that fail chemoradiation). As one would have predicted from previously published randomised studies, there is no detriment in patients' survival with this change in management. What these figures can't show is the potential for improvement in patients' quality of life with an intact larynx."

Table 1: Survival by years after diagnosis, sex, age group and region of residence for Victorians with laryngeal cancer in 2006-2010 and for five-year periods from 1986-1990.

Years after diagnosis	Number of deaths	Survival (%)	95% confidence interval	
1	138	83	(80, 86)	
2	76	74	(71, 77)	
3	51	69	(65, 72)	
4	31	66	(62, 69)	
5	26	63	(60, 67)	
By subgroup	**Number of deaths**	**5-year survival (%)**	**95% confidence interval**	**p-value**
All cases	322	63	(60, 67)	
Sex				
Male	289	64	(59, 68)	0.91
Female	33	63	(50, 74)	
Age at diagnosis				
0-54	20	79	(69, 86)	< 0.01
55-64	71	67	(60, 73)	
65-74	96	61	(54, 68)	
75+	135	55	(46, 63)	
Region of residence				
Melbourne	211	66	(61, 70)	0.04
Rest of Victoria	111	59	(52, 65)	
Selected periods				
1986-1990	297	67	(63, 71)	0.45/0.32[1]
1991-1995	335	61	(57, 65)	
1996-2000	300	68	(64, 72)	
2001-2005	297	65	(61, 69)	
2006-2010	322	63	(60, 67)	

1. The first p-value tests for difference in survival for the two most recent periods (i.e. the period from 2001-2005 with the period from 2006-2010). The second p-value tests fro the trend across all periods shown.

Figure 1: Survival by year

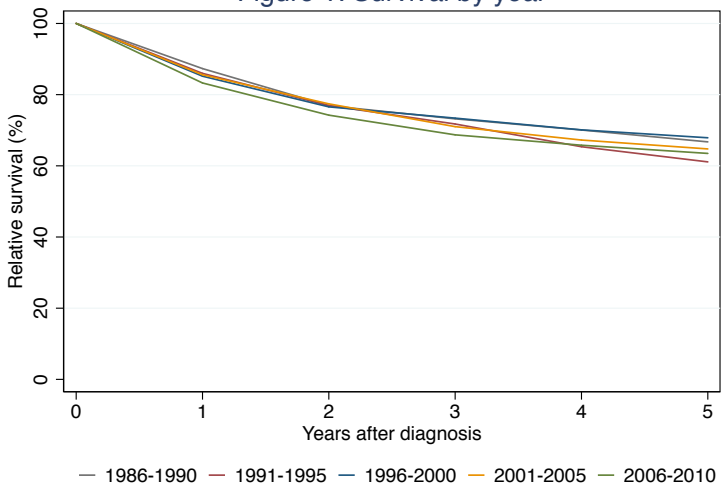


Figure 2: Survival by sex

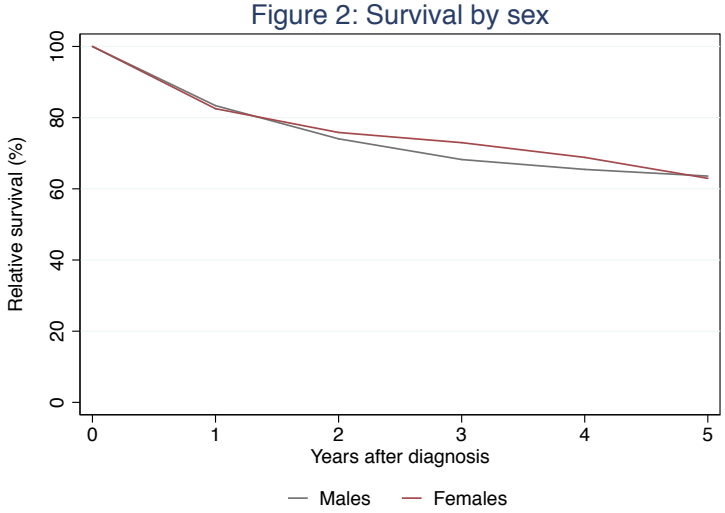
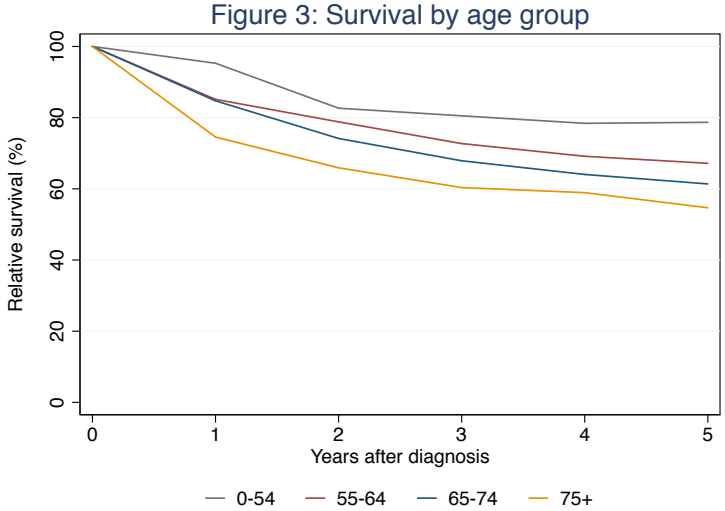


Figure 3: Survival by age group



LUNG

The 5-year survival for people with lung cancer is 14% and is higher for women (16%) than for men (12%).

Age at diagnosis Increasing age at diagnosis is associated with worse survival, with proportions of 37% for persons under 45 years falling to 8% for persons over 75 years at diagnosis.

Tumour morphology Survival was higher for persons diagnosed with non-small cell carcinoma (20%) than with either small cell carcinoma (6%) or tumours without histological confirmation (4%).

Table 1: Survival by years after diagnosis, sex, age group, morphology, region of residence and Integrated Cancer Services region for Victorians with lung cancer in 2006-2010 and for five-year periods from 1986-1990.

Years after diagnosis	Number of deaths	Survival (%)	95% confidence interval	
1	6,852	39	(38, 40)	
2	1,780	24	(23, 25)	
3	648	19	(18, 19)	
4	326	16	(15, 16)	
5	205	14	(13, 15)	
By subgroup	**Number of deaths**	**5-year survival (%)**	**95% confidence interval**	**p-value**
All cases	9,811	14	(13, 15)	
Sex				
Male	6,114	12	(12, 13)	< 0.01
Female	3,697	16	(15, 17)	
Age at diagnosis				
0-44	125	37	(31, 43)	< 0.01
45-54	660	20	(17, 22)	
55-64	1,743	20	(18, 21)	
65-74	2,985	15	(14, 16)	
75+	4,298	8	(7, 9)	
Region of residence				
Melbourne	6,657	14	(13, 15)	0.04
Rest of Victoria	3,154	13	(12, 14)	
Integrated Cancer Services Region				
Southern	2,700	14	(13, 15)	0.35
Western and Central	1,832	15	(13, 16)	
North Eastern	2,125	14	(13, 16)	
Barwon	796	13	(11, 15)	
Grampians	457	11	(9, 14)	
Loddon-Mallee	652	16	(14, 19)	
Hume	600	14	(11, 16)	
Gippsland	649	12	(10, 15)	
Tumour morphology group				
Non-small cell	5,591	20	(19, 21)	< 0.01
Small cell	2,443	6	(5, 7)	
No histological confirmation	1,777	4	(3, 4)	
Selected periods				
1986-1990	7,563	8	(8, 9)	<0.01/<0.01[1]
1991-1995	8,385	9	(9, 10)	
1996-2000	8,464	11	(11, 12)	
2001-2005	9,111	12	(11, 12)	
2006-2010	9,811	14	(13, 15)	

1. The first p-value tests for difference in survival for the two most recent periods (i.e. the period from 2001-2005 with the period from 2006-2010). The second p-value tests fro the trend across all periods shown.

Regional comparisons Survival was slightly higher for residents of Melbourne than the rest of Victoria and this was reflected in the proportions for individual ICS regions.

Time trends There has been a significant increase from 8% to 14% in survival over the 20 year period from 1986-1990 to 2006-2010.

A clinician's comment "Survival remains poor reflecting the frequency of disease disseminated at diagnosis. Patients with no histological confirmation are likely to have widespread disease and significant co-morbidities making them unfit for diagnostic procedures or active treatment.

The higher survival of patients with non-small cell lung cancer is due to a proportion having localised disease suitable for curative resection – survival in this group of patients has increased significantly from 11% in 1986-1990 to 18% in 2006-2010 (figures not shown in table).

The age-related decline in survival may reflect lower fitness levels and co-morbidities in older patients making them unsuitable for aggressive, potentially curative, treatments, as is likely to be the case for many cancers. The better survival for women may be due to the larger proportion of non-smokers who do not have smoking-related co-morbidities.

The improvement of survival over time reflects new treatments: adjuvant chemotherapy, combined chemoradiation, more effective chemotherapy and targeted agents for advanced disease."

Figure 1: Survival by year

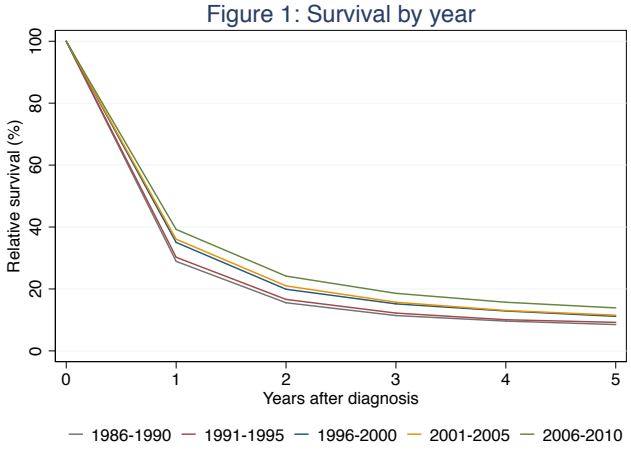


Figure 3: Survival by age group

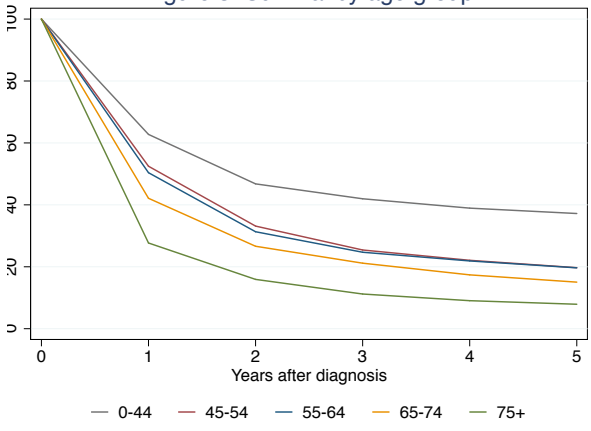


Figure 2: Survival by sex

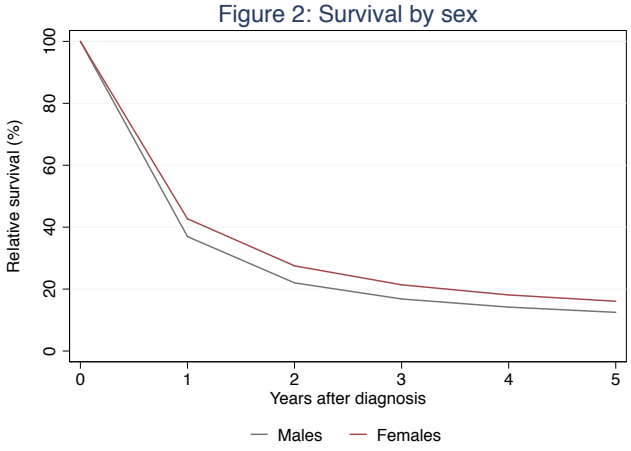
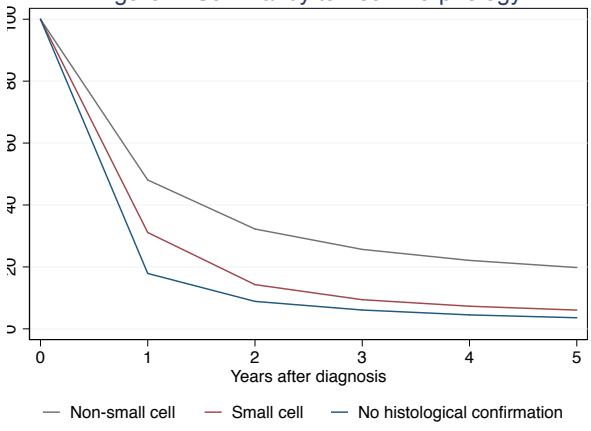


Figure 4: Survival by tumour morphology



MELANOMA

Note: Analysis includes only invasive cutaneous melanomas (Clark's level 2 to 5).

Table 1: Survival by years after diagnosis, sex, age group, region of residence, Integrated Cancer Services region and tumour thickness for Victorians with melanoma in 2006-2010 and for five-year periods from 1986-1990.

Years after diagnosis	Number of deaths	Survival (%)	95% confidence interval	
1	594	97	(96, 97)	
2	465	95	(94, 95)	
3	391	93	(92, 93)	
4	342	91	(91, 92)	
5	284	90	(89, 91)	
By subgroup	**Number of deaths**	**5-year survival (%)**	**95% confidence interval**	**p-value**
All cases	2,076	90	(89, 91)	
Sex				
Male	1,393	87	(86, 88)	< 0.01
Female	683	93	(92, 94)	
Age at diagnosis				
0-44	129	94	(93, 95)	< 0.01
45-54	140	93	(92, 94)	
55-64	258	92	(90, 93)	
65-74	383	90	(88, 91)	
75+	1,166	83	(80, 85)	
Region of residence				
Melbourne	1,365	90	(89, 91)	0.72
Rest of Victoria	711	90	(88, 91)	
Integrated Cancer Services Region				
Southern	614	90	(89, 92)	0.34
Western and Central	252	89	(87, 91)	
North Eastern	499	91	(89, 92)	
Barwon	167	92	(89, 94)	
Grampians	98	91	(87, 94)	
Loddon-Mallee	162	90	(87, 92)	
Hume	134	89	(86, 92)	
Gippsland	150	87	(83, 90)	
Thickness				
≤1mm	526	100	(100, 101)	< 0.01
1-2mm	319	89	(87, 91)	
2.1-4mm	366	74	(71, 78)	
>4mm	394	50	(46, 55)	
Selected periods				
1986-1990	947	85	(84, 87)	0.11/<0.01[1]
1991-1995	1,109	89	(88, 90)	
1996-2000	1,405	91	(90, 92)	
2001-2005	1,586	91	(90, 92)	
2006-2010	2,076	90	(89, 91)	

1. The first p-value tests for difference in survival for the two most recent periods (i.e. the period from 2001-2005 with the period from 2006-2010). The second p-value tests fro the trend across all periods shown.

The 5-year survival for people with melanoma is 90%. This is amongst the highest survival of any cancer.

Sex Survival was 87% for men and slightly higher (93%) for women.

Age at diagnosis Older age at diagnosis was associated with worse survival, with estimates falling from 94% in persons under 45 years to 83% for persons over 75 years at diagnosis

Regional comparisons Survival did not differ between residents of Melbourne and the rest of Victoria.

Regional comparisons Survival between the ICS regions varied from 87% to 92% but differences were not statistically significant.

Time trends Survival improved over the 20 year period from 1986-1990 to 2006-2010 from 85% to 90%.

Tumour thickness Survival in those diagnosed with thin tumours (≤ 1mm)., was double that of people with thick tumours (>4mm). In fact survival in those with the thinnest tumours was 100%, indicating that mortality in this group was the same as for the general population (adjusted for age and sex). There is a significant gradient in survival by tumour thickness which clearly supports the importance of early detection.

A clinician's comment "The excellent survival for melanoma is a reflection of the early diagnosis of this tumour in Australia, which is due to high levels of awareness of the disease.

The improvement in average survival over a twenty year period is likely to be due to the increasing incidence of thin, superficially invasive melanomas. This is contributed to by early detection of the common tumour types.

The reduced survival demonstrated with older age and in men is likely to be related to an increase in thick, deeply invasive tumours and nodular melanomas."

Figure 1: Survival by year

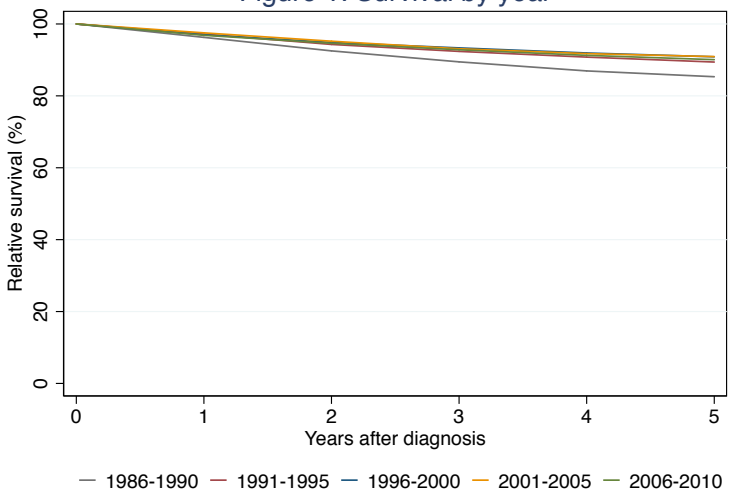


Figure 2: Survival by sex

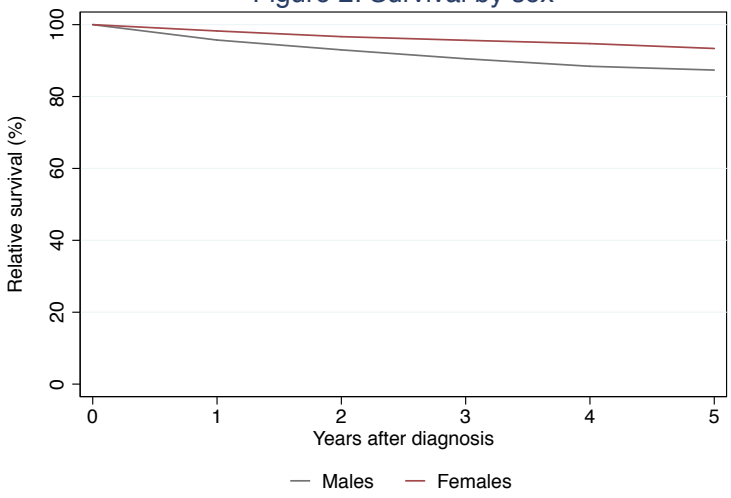
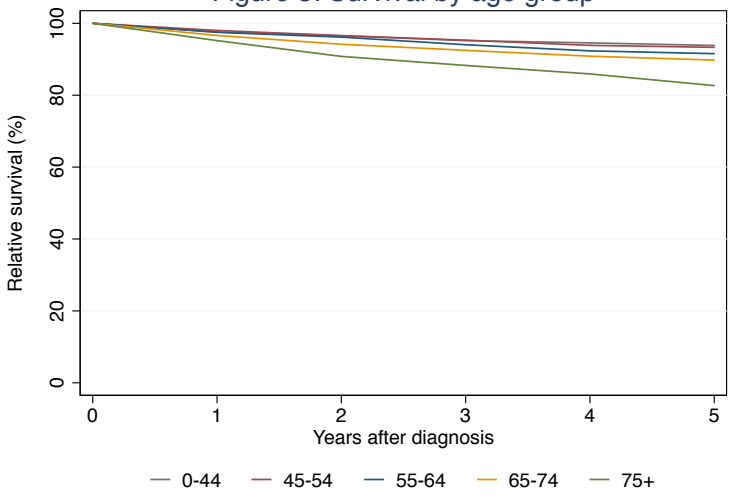


Figure 3: Survival by age group



MESOTHELIOMA

The 5-year survival for people with mesothelioma is 6%, one of the lowest cancer survival rates.

Sex Survival was 5% for men and 9% for women.

Age at diagnosis Older age at diagnosis was associated with worse survival, with estimates falling from 15% in persons under 55 years to 3% for persons over 75 years at diagnosis.

Regional comparisons Survival did not differ between residents of Melbourne and the rest of Victoria.

Time trends Though the trend in survival over the 20 year period from 1986-1990 to 2006-2010 was significant, the improvements were minimal.

A clinician's comment "The low survival of patients with pleural mesothelioma reinforces the perception that this is a deadly disease for which there is no effective treatment."

Table 1: Survival by years after diagnosis, sex, age group and region of residence for Victorians with mesothelioma in 2006-2010 and for five-year periods from 1986-1990.

Years after diagnosis	Number of deaths	Survival (%)	95% confidence interval	
1	392	45	(42, 49)	
2	152	23	(20, 26)	
3	61	13	(11, 16)	
4	29	8	(6, 10)	
5	14	6	(4, 8)	
By subgroup	**Number of deaths**	**5-year survival (%)**	**95% confidence interval**	**p-value**
All cases	648	6	(4, 8)	
Sex				
Male	529	5	(3, 7)	0.33
Female	119	9	(5, 14)	
Age at diagnosis				
0-54	39	15	(7, 25)	< 0.01
55-64	124	7	(4, 12)	
65-74	194	6	(3, 10)	
75+	291	3	(1, 6)	
Region of residence				
Melbourne	436	6	(4, 8)	0.62
Rest of Victoria	212	6	(4, 10)	
Selected periods				
1986-1990	218	6	(3, 10)	0.43/<0.01[1]
1991-1995	358	4	(2, 6)	
1996-2000	438	6	(4, 9)	
2001-2005	588	6	(4, 8)	
2006-2010	648	6	(4, 8)	

1. The first p-value tests for difference in survival for the two most recent periods (i.e. the period from 2001-2005 with the period from 2006-2010). The second p-value tests fro the trend across all periods shown.

Figure 1: Survival by year

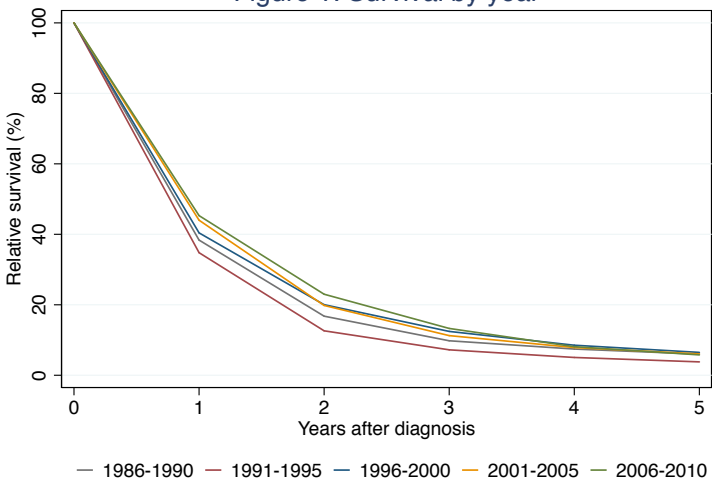


Figure 2: Survival by sex

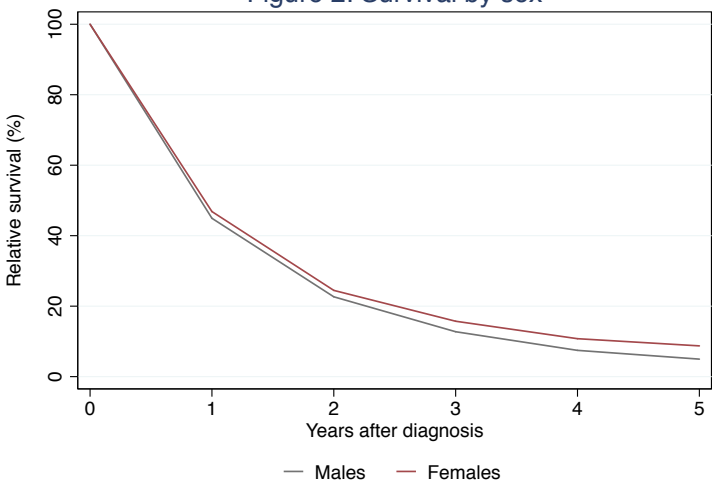
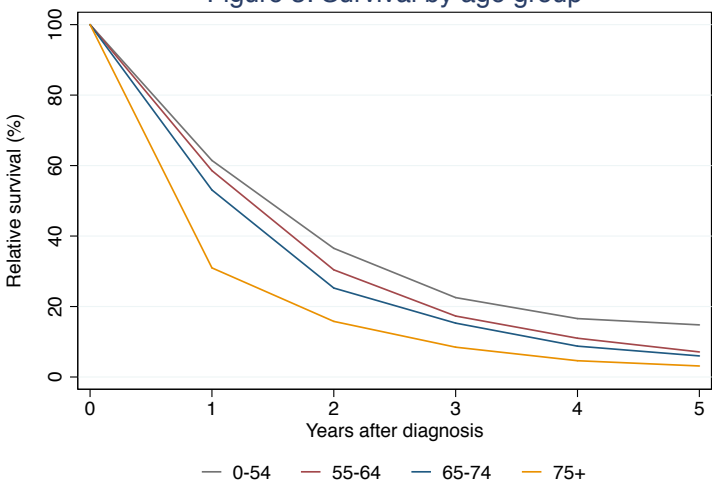


Figure 3: Survival by age group



CONNECTIVE & SOFT TISSUE

Note: This tumour grouping does not include Kaposi sarcoma

The 5-year survival for people with cancers of connective and other soft tissue is 62%.

Sex Survival did not differ significantly between men and women.

Age at diagnosis Older age at diagnosis was associated with worse survival, with proportions of 69% for persons under 45 years falling to 49% for persons over 75 years at diagnosis.

Regional comparisons Survival was higher for residents of Melbourne (65%) than the rest of Victoria (55%).

Time trends Survival improved over the 20 year period from 1986-1990 to 2006-2010 from 56% to 62%.

A clinician's comment "The improvement in survival is encouraging. It is important to note that, while there has been very little change in the modalities of treatment (radiotherapy, chemotherapy and surgery) over the 20-year period, there has been a major shift in the philosophy of overall management with a greater emphasis on the multi-disciplinary management of sarcomas. The commitment to multi-disciplinary care in Victoria may, in part, explain the observed improvement in survival."

Table 1: Survival by years after diagnosis, sex, age group and region of residence for Victorians with connective tissue cancers in 2006-2010 and for five-year periods from 1986-1990.

Years after diagnosis	Number of deaths	Survival (%)	95% confidence interval	
1	162	80	(78, 83)	
2	79	71	(67, 74)	
3	36	67	(63, 70)	
4	23	65	(61, 68)	
5	27	62	(59, 66)	
By subgroup	**Number of deaths**	**5-year survival (%)**	**95% confidence interval**	**p-value**
All cases	327	62	(59, 66)	
Sex				
Male	175	64	(58, 69)	0.32
Female	152	61	(55, 66)	
Age at diagnosis				
0-44	58	69	(62, 75)	< 0.01
45-54	20	80	(71, 87)	
55-64	42	65	(56, 73)	
65-74	62	58	(49, 66)	
75+	145	49	(40, 58)	
Region of residence				
Melbourne	213	65	(61, 70)	0.05
Rest of Victoria	114	55	(48, 62)	
Selected periods				
1986-1990	225	56	(51, 61)	0.41/0.04[1]
1991-1995	260	58	(53, 62)	
1996-2000	275	65	(61, 69)	
2001-2005	296	64	(60, 67)	
2006-2010	327	62	(59, 66)	

1. The first p-value tests for difference in survival for the two most recent periods (i.e. the period from 2001-2005 with the period from 2006-2010). The second p-value tests fro the trend across all periods shown.

Figure 1: Survival by year

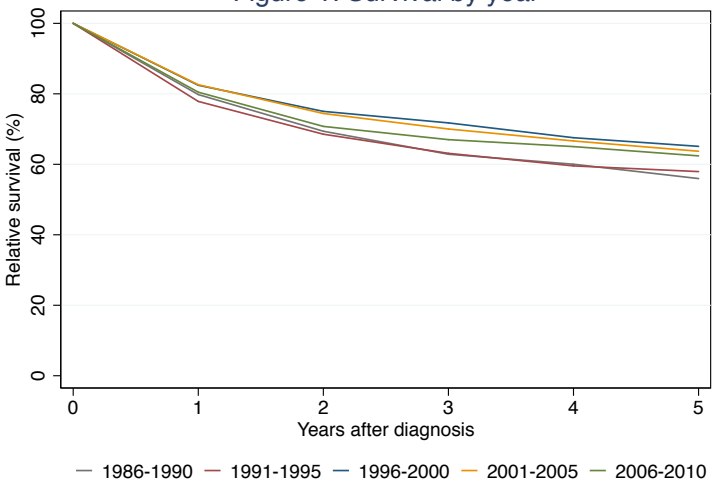


Figure 2: Survival by sex

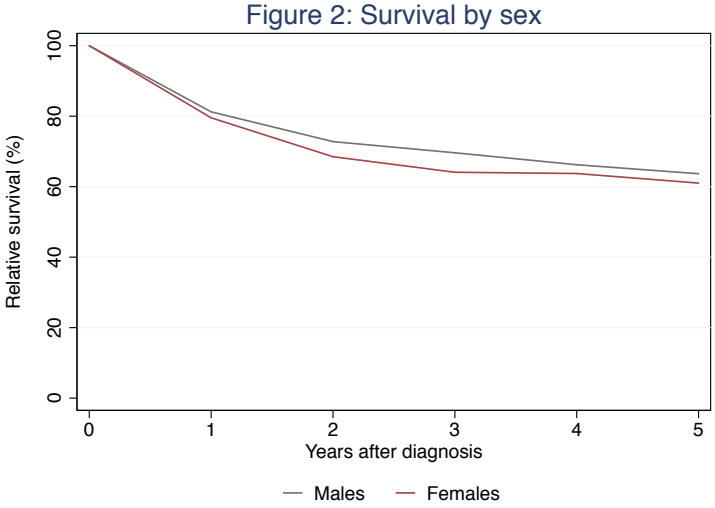
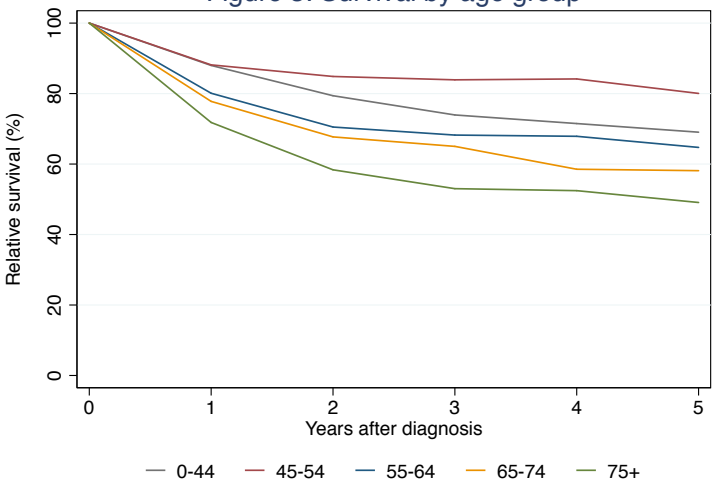


Figure 3: Survival by age group



BREAST (female)

The 5-year survival for women with breast cancer is 89%.

Age at diagnosis There was little variation between younger age groups but women over 75 had significantly lower survival.

Regional comparisons Survival did not differ between residents of Melbourne and the rest of Victoria.

Integrated Cancer Service Regions There was little variation (range 88% to 91%) in survival between women resident in the different ICS regions.

Tumour morphology Survival was very similar for women with ductal and lobular carcinoma, Paget disease and other adenocarcinomas but lower in those having other/unspecified carcinomas (66%), with the lowest survival

Table 1: Survival by years after diagnosis, age group, morphology, tumour stage at diagnosis, region of residence and Integrated Cancer Service region for Victorian women with breast cancer in 2006-2010 and for five-year periods from 1986-1990.

Years after diagnosis	Number of deaths	Survival (%)	95% confidence interval	
1	574	98	(98, 98)	
2	542	96	(95, 96)	
3	556	93	(93, 94)	
4	503	91	(90, 91)	
5	446	89	(88, 90)	
By subgroup	**Number of deaths**	**5-year survival (%)**	**95% confidence interval**	**p-value**
All cases	2,621	89	(88, 90)	
Age at diagnosis				
0-44	244	89	(87, 90)	< 0.01
45-54	331	92	(91, 93)	
55-64	413	92	(91, 92)	
65-74	458	90	(89, 91)	
75+	1,175	80	(77, 82)	
Region of residence				
Melbourne	1,841	89	(89, 90)	0.45
Rest of Victoria	780	89	(88, 90)	
Integrated Cancer Services Region				
Southern	779	88	(87, 90)	0.31
Western and Central	427	89	(87, 90)	
North Eastern	635	91	(89, 92)	
Barwon	195	88	(86, 90)	
Grampians	122	88	(85, 91)	
Loddon-Mallee	177	88	(86, 91)	
Hume	136	89	(87, 92)	
Gippsland	150	89	(87, 92)	
Tumour morphology group				
Ductal carcinoma	1,895	90	(90, 91)	< 0.01
Lobular carcinoma	276	89	(87, 91)	
Paget disease	34	88	(82, 93)	
Other adenocarcinoma	215	86	(84, 88)	
Other and unspecified carcinoma	89	66	(60, 72)	
No histological confirmation	97	26	(19, 33)	
Selected periods				
1986-1990	2,728	73	(72, 74)	<0.01/<0.01[1]
1991-1995	2,888	78	(77, 79)	
1996-2000	2,888	84	(83, 85)	
2001-2005	2,721	87	(86, 87)	
2006-2010	2,621	89	(88, 90)	

1. The first p-value tests for difference in survival for the two most recent periods (i.e. the period from 2001-2005 with the period from 2006-2010). The second p-value tests fro the trend across all periods shown.

being for tumours without histological confirmation (26%).

Time trends Survival improved over the 20 year period from 1986-1990 to 2006-2010 from 73% to 89%, and between the two most recent periods from 87% to 89%.

Stage at diagnosis

The Victorian Cancer Registry has collected TNM stage for breast cancers diagnosed from 2006. Table 2 (below) presents the 3-year period relative survival for women with breast cancer in 2006-2010 to provide estimates of recent survival by cancer stage.

TNM stage is known for 95% of eligible cancers diagnosed in 2006-2010. Ineligible cancers include various morphology types eg sarcoma, for which TNM stage is not applicable, as well as tumours diagnosed at autopsy or notified by death certificate only.

There is a clear relationship between stage and survival in these figures. However, other measures, such as oestrogen, progesterone and HER2, are known prognostic factors that influence survival, and VCR plans to include these in future analyses.

A clinician's comment "Previously seen improvements in survival reflected better targeted adjuvant systemic treatments with Tamoxifen, and then with increasingly effective chemotherapy regimens.

These recent figures show a small, but important, continued improvement in breast cancer survival. These gains are likely to be due a variety of newer treatments, such as adjuvant Herceptin and the Aromatase inhibitors, previously shown in clinical trials to improve outcomes, and now in widespread use.

Age at diagnosis has little effect on survival, disproving the notion that cancers in older women are 'slower'. The worse survival of the unspecified and histology lacking group most likely represents larger, non-operable or untreated cancers.

The consistency in outcomes according to location is very pleasing, and probably reflects the uniform access to screening mammography, and also to the widespread adoption of treatment guidelines to ensure appropriate treatment throughout the state."

Figure 1: Survival by year

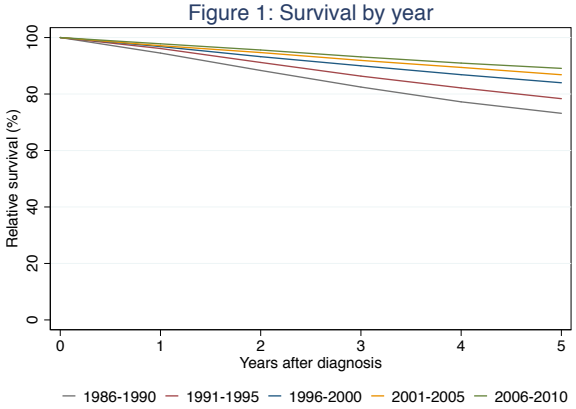


Figure 2: Survival by age group

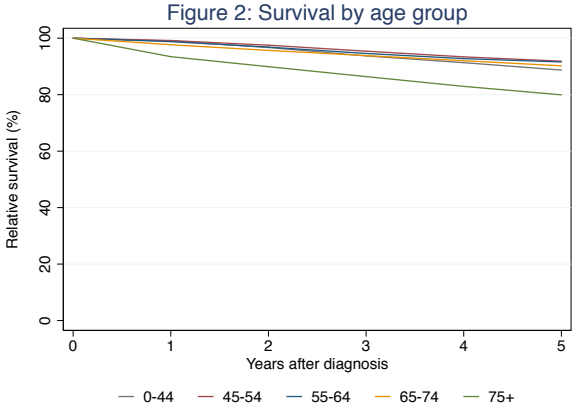


Figure 3: Survival by tumour morphology

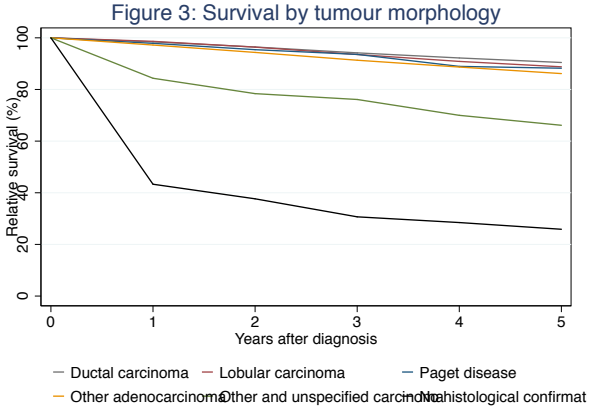


Table 2: Three-year survival for Victorian women with breast cancer in 2006-2010 by TNM stage at diagnosis

By subgroup	Number of deaths	3-year survival (%)	95% confidence interval	p-value
Stage 1	137	100	(100, 101)	< 0.01
Stage 2	245	97	(96, 98)	
Stage 3	222	85	(82, 87)	
Stage 4	325	42	(37, 46)	

CERVIX

The 5-year survival for women with cervical cancer is 74%.

Age at diagnosis Older age at diagnosis was associated with worse survival, with estimates of 94% for women under 35 years falling to 44% for women over 75 years at diagnosis.

Tumour morphology Survival differed between tumours of different types with other and unspecified carcinomas having less favourable prognosis than squamous cell carcinomas or adenocarcinomas. As with other cancers, the poorest survival was observed for tumours without histological verification (16%).

Regional comparisons Survival was slightly higher in residents of Melbourne (76%) than the rest of Victoria (68%).

Time trends The improvement in survival over the 20 years 1986-1990 to 2006-2010 was not statistically significant.

Table 1: Survival by years after diagnosis, age group, morphology and region of residence for Victorian women with cervical cancer in 2006-2010 and for five-year periods from 1986-1990.

Years after diagnosis	Number of deaths	Survival (%)	95% confidence interval	
1	107	88	(86, 90)	
2	60	81	(79, 84)	
3	36	77	(74, 80)	
4	16	76	(73, 78)	
5	18	74	(71, 77)	
By subgroup	**Number of deaths**	**5-year survival (%)**	**95% confidence interval**	**p-value**
All cases	237	74	(71, 77)	
Age at diagnosis				
0-35	9	94	(90, 97)	< 0.01
35-44	32	84	(78, 88)	
45-54	46	72	(65, 78)	
55-74	75	65	(58, 71)	
75+	75	44	(34, 55)	
Region of residence				
Melbourne	168	76	(72, 79)	0.09
Rest of Victoria	69	68	(61, 74)	
Tumour morphology group				
Adenocarcinoma	42	81	(75, 86)	< 0.01
Squamous cell carcinoma	154	74	(70, 78)	
Other and unspecified carcinoma	24	61	(48, 71)	
No histological confirmation	11	16	(3, 42)	
Selected periods				
1986-1990	420	69	(67, 72)	0.17/0.18[1]
1991-1995	405	72	(70, 74)	
1996-2000	303	76	(73, 78)	
2001-2005	261	71	(68, 74)	
2006-2010	237	74	(71, 77)	

1. The first p-value tests for difference in survival for the two most recent periods (i.e. the period from 2001-2005 with the period from 2006-2010). The second p-value tests fro the trend across all periods shown.

A clinician's comment "It is difficult to interpret these results without knowing the stage breakdown - however, this information is not available at a population level for inclusion in this analysis.

Survival from cervical cancer is one of the few that has not improved significantly over the last 20 years.

It would be expected that screening would result in a shift to more early stage disease i.e. more microinvasive cancers, for which survival is very good. However, most cervical cancers diagnosed now occur in under-screened or never screened women and would therefore tend be later stage disease.

Screening participation has remained steady over the last 10 years, and this is reflected in limited gains in survival.

The survival difference between Melbourne and regional Victoria is interesting (76% vs 68%). This difference is not observed for breast and uterine cancers, but is similar for ovarian cancer. This may possibly reflect more limited access to radiotherapy (more important for cervical treatment) and possibly lower screening participation, which is known to vary by SES.

The comparable survival figures for squamous versus glandular lesions tends to be at odds with the rest of the world literature but may reflect better delivery of radiation in the Australian context."

Figure 1: Survival by year

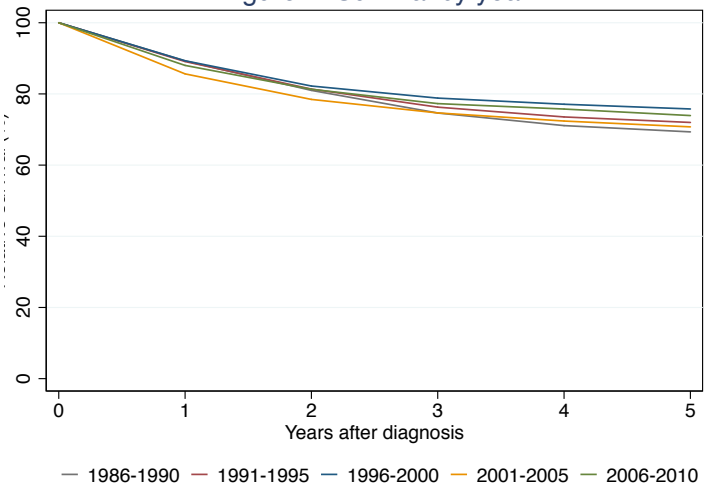


Figure 2: Survival by age group

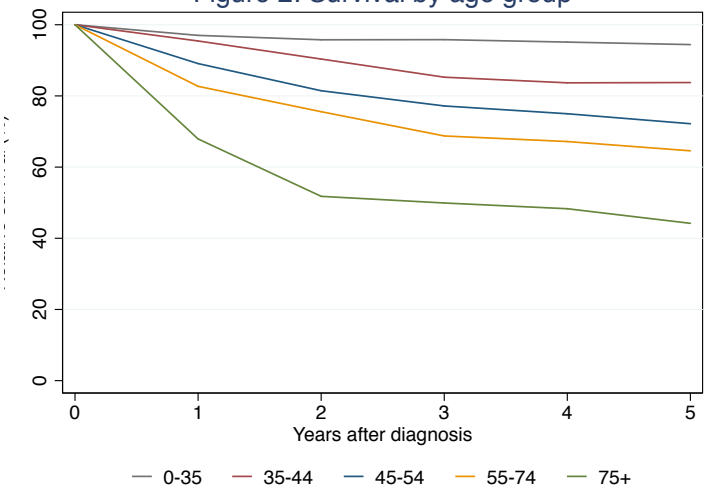
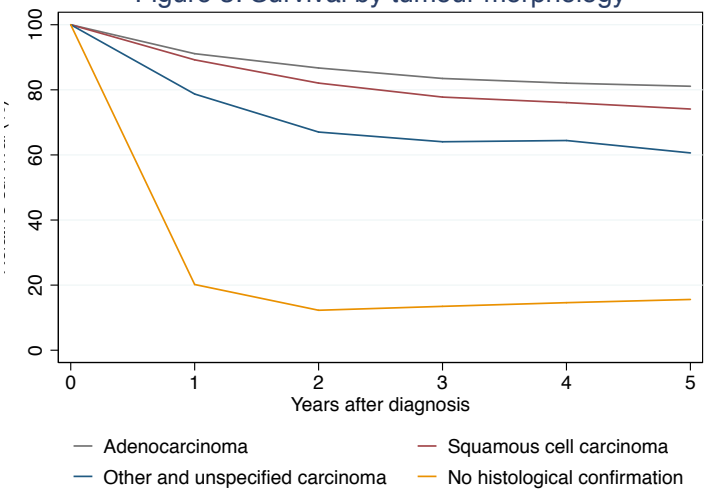


Figure 3: Survival by tumour morphology



UTERUS

The 5-year survival for women with uterine cancer is 84%.

Age at diagnosis There was little variation between younger age groups but women over 75 had significantly lower survival.

Regional comparisons Survival was very similar for residents of Melbourne and the rest of Victoria.

Time trends Survival improved over the 20 years 1986-1990 to 2006-2010 from 77% to 84%.

A clinician's comment "Survival for uterine cancer continues to show small improvements and high 5-year survival rates. Improvements may well reflect centralisation of care together with individualisation of treatment according to risk factors.

The significant increase in incidence over recent years is almost certainly due to the obesity epidemic. Most of the obese patients with endometrial cancer are younger and have early stage disease with favourable prognosis. This may also have an influence on the overall gain in survival."

Table 1: Survival by years after diagnosis, age group, morphology and region of residence for Victorian women with uterine cancer in 2006-2010 and for five-year periods from 1986-1990.

Years after diagnosis	Number of deaths	Survival (%)	95% confidence interval	
1	204	94	(93, 95)	
2	121	90	(89, 91)	
3	95	88	(86, 89)	
4	89	85	(84, 87)	
5	66	84	(82, 85)	
By subgroup	**Number of deaths**	**5-year survival (%)**	**95% confidence interval**	**p-value**
All cases	575	84	(82, 85)	
Age at diagnosis				
0-44	12	93	(88, 96)	< 0.01
45-54	53	89	(86, 91)	
55-64	110	88	(86, 90)	
65-74	127	84	(81, 88)	
75+	273	67	(61, 72)	
Region of residence				
Melbourne	416	84	(82, 85)	0.80
Rest of Victoria	159	83	(80, 86)	
Selected periods				
1986-1990	445	77	(74, 79)	0.09/<0.01[1]
1991-1995	508	76	(74, 78)	
1996-2000	448	84	(82, 86)	
2001-2005	540	82	(80, 84)	
2006-2010	575	84	(82, 85)	

1. The first p-value tests for difference in survival for the two most recent periods (i.e. the period from 2001-2005 with the period from 2006-2010). The second p-value tests fro the trend across all periods shown.

Figure 1: Survival by year

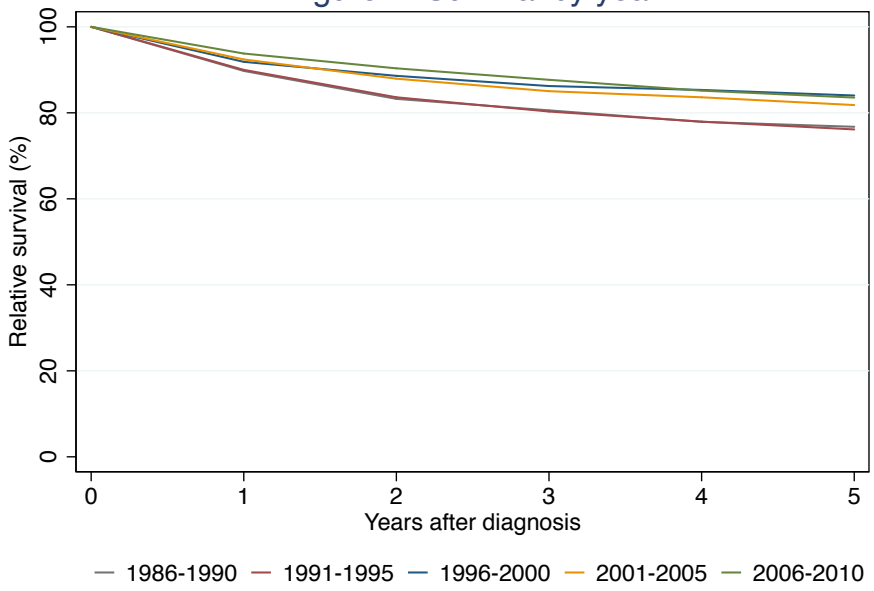
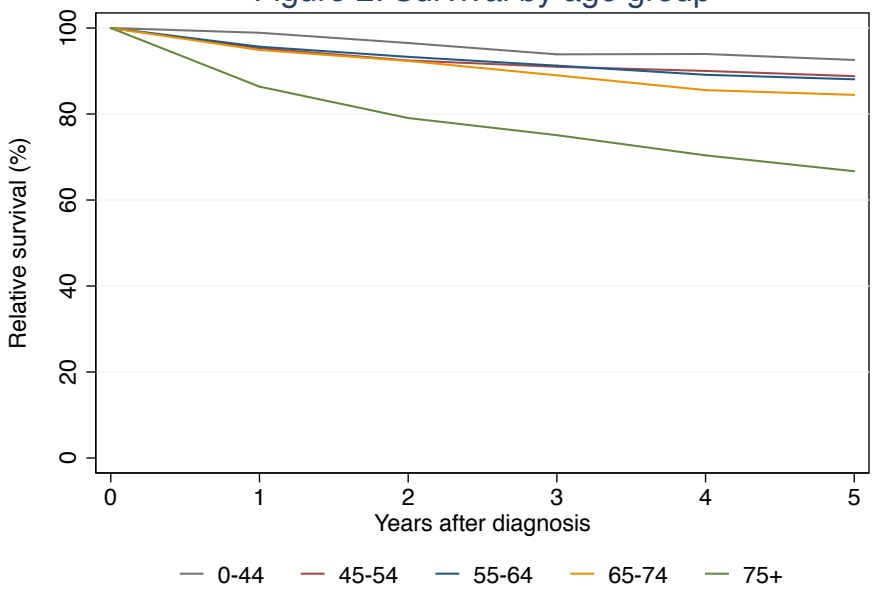


Figure 2: Survival by age group



OVARY

Note: This analysis does not include ovarian cystadenomas of borderline malignancy.

"The 5-year survival for women with ovarian cancer is 41%.

Age at diagnosis Older age at diagnosis was strongly associated with worse survival, being 71% for women under 45 years falling to 15% for women aged over 75 years at diagnosis.

Tumour morphology The highest survival was for endometrioid (74%), clear cell (68%) and mucinous adenocarcinomas (62%) and for tumours of 'other histology' (57%) - a diverse group of non-epithelial tumours including germ cell tumours, granulosa cell tumours and other specialised gonadal tumours. Papillary and serous adenocarcinomas (37%) had less favourable prognosis than the other specific adenocarcinomas with other types of carcinoma/adenocarcinoma (11-29%) and unconfirmed tumours having the poorest survival (9%).

Regional comparisons Survival was higher for residents of Melbourne (43%) than the rest of Victoria (35%).

Table 1: Survival by years after diagnosis, age group, tumour morphology and region of residence for Victorian women with ovarian cancer in 2006-2010 and for five-year periods from 1986-1990.

Years after diagnosis	Number of deaths	Survival (%)	95% confidence interval	
1	418	76	(74, 78)	
2	244	62	(60, 65)	
3	152	53	(51, 56)	
4	118	46	(44, 48)	
5	77	41	(38, 43)	
By subgroup	**Number of deaths**	**5-year survival (%)**	**95% confidence interval**	**p-value**
All cases	1,009	41	(38, 43)	
Age at diagnosis				
0-44	55	71	(64, 76)	< 0.01
45-54	118	56	(50, 61)	
55-64	196	45	(40, 50)	
65-74	245	38	(33, 43)	
75+	395	15	(12, 19)	
Region of residence				
Melbourne	702	43	(40, 46)	< 0.01
Rest of Victoria	307	35	(31, 40)	
Tumour morphology group				
Papillary, serous adenocarcinoma	451	37	(34, 41)	< 0.01
Mucinous adenocarcinoma	49	62	(52, 70)	
Endometrioid adenocarcinoma	37	74	(65, 81)	
Clear cell adenocarcinoma	29	68	(57, 77)	
Other and unspecified adenocarcinoma	204	29	(23, 34)	
Other and unspecified carcinoma	50	11	(5, 21)	
Other histology	59	57	(48, 65)	
No histological confirmation	130	9	(6, 13)	
Selected periods				
1986-1990	804	35	(32, 37)	0.05/<0.01[1]
1991-1995	900	37	(35, 40)	
1996-2000	921	38	(36, 41)	
2001-2005	955	39	(37, 41)	
2006-2010	1,009	41	(38, 43)	

1. The first p-value tests for difference in survival for the two most recent periods (i.e. the period from 2001-2005 with the period from 2006-2010). The second p-value tests fro the trend across all periods shown.

Time trends Survival improved over the 20 years 1986-1990 to 2006-2010 from 35% to 41%, and between the last two periods from 39% to 41%.

A clinician's comment "Overall, survival continues to creep up with small but significant gains in the past five years. However, until a screening test is found which will enable earlier diagnosis for these cancers, it is unlikely that huge inroads in survival are going to occur.

Survival figures for early stage clear cell carcinoma are high but for late stage disease remain very poor.

The profound influence of age on outcome has been noted previously."

Figure 1: Survival by year

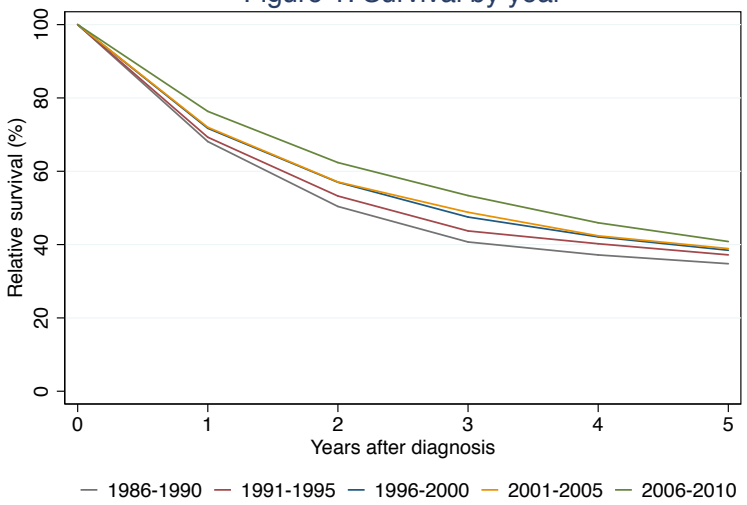


Figure 2: Survival by age group

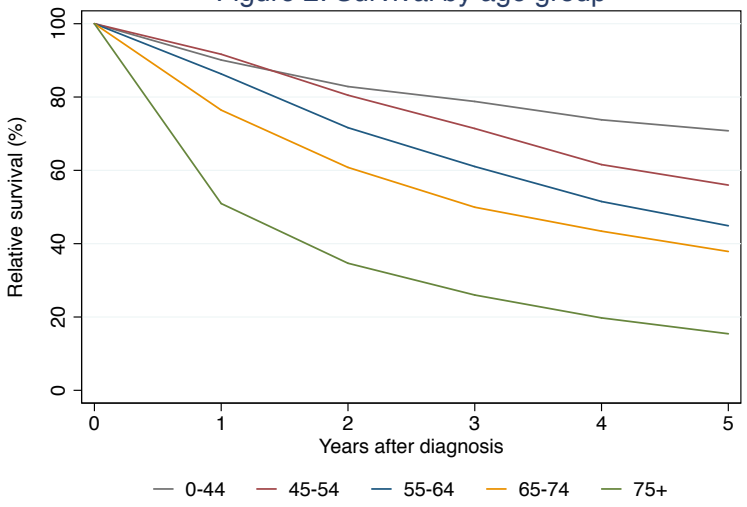
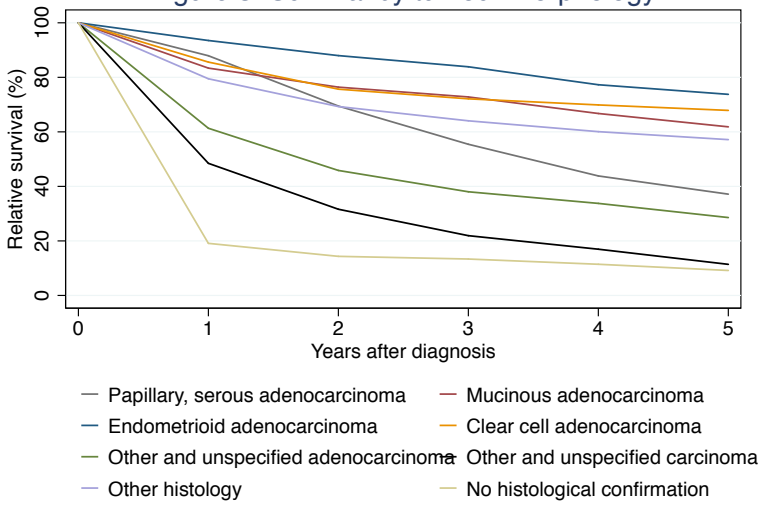


Figure 3: Survival by tumour morphology



PROSTATE

The 5-year survival for men with prostate cancer is 91%.

Age at diagnosis Men aged over 75 years at diagnosis experienced poorer survival (78%) than younger men with all ages up to 75 years having survival of over 95%.

Regional comparisons Survival was higher for residents of Melbourne (93%) than the rest of Victoria (88%).

Integrated Cancer Services regions There was some difference in survival between the ICS regions ranging from 82% in Grampians, 86% in Gippsland, 88% in Barwon and over 90% in all other regions.

Time trends Survival improved over the 20 years 1986-1990 to 2006-2010 from 57% to 91%, and between the last two periods from 84% to 91%.

Gleason score The Gleason score is a method of assessing a prostate cancer to find out how aggressive the tumour is by grading it according to its resemblance to normal prostate tissue. A higher score generally indicates a less favourable prognosis. The Gleason score is therefore a valuable indicator in determining appropriate treatment. Survival showed significant differences by Gleason score, though only between Gleason scores <8 and 8-10. There was little difference between survival in the three groups Gleason 2-5, Gleason 6 and

Table 1: Survival by years after diagnosis, age group, region of residence, Integrated Cancer Services Region and Gleason score for Victorian men with prostate cancer in 2006-2010 and for five-year periods from 1986-1990.

Years after diagnosis	Number of deaths	Survival (%)	95% confidence interval	
1	1,116	98	(98, 98)	
2	960	96	(96, 97)	
3	862	95	(94, 95)	
4	800	93	(92, 93)	
5	700	91	(91, 92)	
By subgroup	**Number of deaths**	**5-year survival (%)**	**95% confidence interval**	**p-value**
All cases	4,438	91	(91, 92)	
Age at diagnosis				
0-54	72	96	(95, 97)	< 0.01
55-64	429	96	(96, 97)	
65-74	1,073	95	(94, 96)	
75+	2,864	78	(76, 80)	
Region of residence				
Melbourne	2,809	93	(92, 93)	< 0.01
Rest of Victoria	1,629	88	(87, 89)	
Integrated Cancer Services Region				
Southern	1,192	93	(92, 94)	< 0.01
Western and Central	617	90	(88, 92)	
North Eastern	1,000	93	(92, 95)	
Barwon	429	88	(86, 91)	
Grampians	288	82	(78, 85)	
Loddon-Mallee	348	91	(89, 94)	
Hume	271	91	(89, 94)	
Gippsland	293	86	(83, 89)	
Gleason score				
2-5	172	99	(96, 102)	< 0.01
6	631	100	(100, 101)	
7	969	98	(97, 99)	
8-10	1,364	69	(67, 71)	
Selected periods				
1986-1990	2,975	57	(55, 59)	<0.01/<0.01[1]
1991-1995	4,206	66	(64, 67)	
1996-2000	4,682	81	(80, 82)	
2001-2005	4,404	84	(83, 85)	
2006-2010	4,438	91	(91, 92)	

1. The first p-value tests for difference in survival for the two most recent periods (i.e. the period from 2001-2005 with the period from 2006-2010). The second p-value tests fro the trend across all periods shown.

Gleason 7 with survival in these groups being close to 100% (which indicates no excess mortality over the general population, adjusted for age)

A clinician's comment "There has been a remarkable improvement in the relative 5-year survival for men diagnosed with prostate cancer in Victoria over the last 20 years. However, the causes for these survival improvements are less obvious and likely to be multi-factorial. Treatment factors improving outcomes are likely to have a "lagged" effect, not influencing the mortality for up to a decade, further obscuring cause-and-effect relationships.

Between the late 1980s and the late 2000s, the age-standardised incidence for prostate cancer has almost trebled. This is believed to be due to the widespread use of the PSA blood test, leading to the diagnosis of larger proportions of younger men, and of early stage disease. Even if our treatments had not improved in the slightest, the relative survival of men diagnosed still would have improved.

Nonetheless, management of prostate cancer has changed dramatically over the period. We know from large well-conducted randomised trials that, in appropriate groups of men with prostate cancer, radical prostatectomies, or modern radiation approaches both improve survival. Similarly, judicious early use of androgen deprivation therapy and the introduction of novel chemotherapy agents may have played a role.

There remain significant differences in relative survival between ICS regions. However, these differences have narrowed. In our previous report, we showed a 15% point difference across the estimated survivals from the least to the most favourable ICS regions for men diagnosed in 2000- 2004. In 2006-2010, this difference has narrowed to 7%. The biggest improvements have occurred in regional areas, but lower survivals in some regions still suggest inequities of care with possible reasons being paucity of urologic care in regional areas and hence reduced access to surgery and or radiotherapy options in early prostate cancer.

For a man diagnosed now with prostate cancer, the outlook is much better than 20 years ago, and especially for men with Gleason ≤ 7 cancers. Gleason 8-10 cancers remain a challenge.

Figure 1: Survival by year

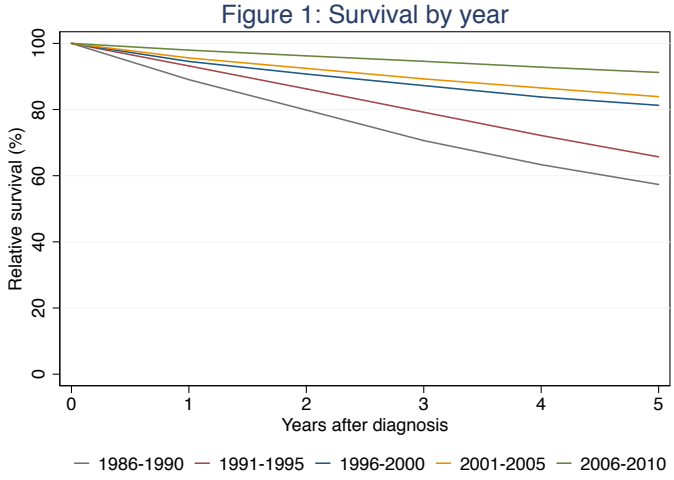
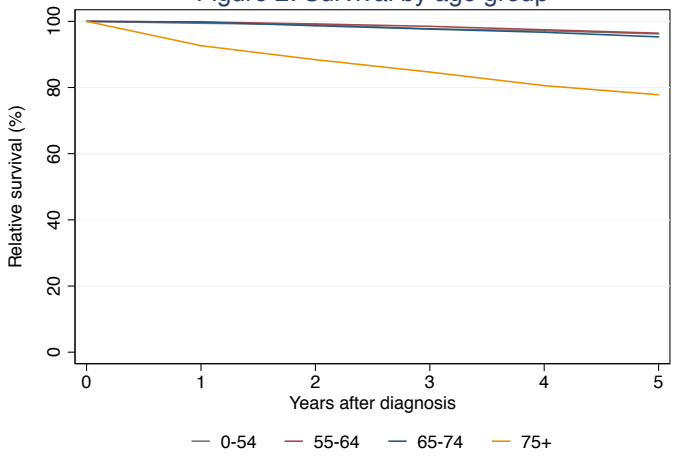


Figure 2: Survival by age group



TESTIS

The 5-year survival for men with testicular cancer is 98%, the highest survival of any cancer.

Age at diagnosis There were too few testicular cancers to examine survival by age.

Regional comparisons Survival was similar for residents of Melbourne and the rest of Victoria.

Time trends Survival improved over the 20 years 1986-1990 to 2006-2010 from 93% to 98%.

A clinician's comment "The excellent survival for testis cancer is a reflection of the marked sensitivity of this cancer to treatment including surgery, radiation and chemotherapy. The improvement in survival since the 1980s is likely to be due to several factors, particularly the identification of highly effective chemotherapy in the late 1970s and early 1980s, and increased awareness of the condition resulting in diagnosis and treatment at an earlier stage.

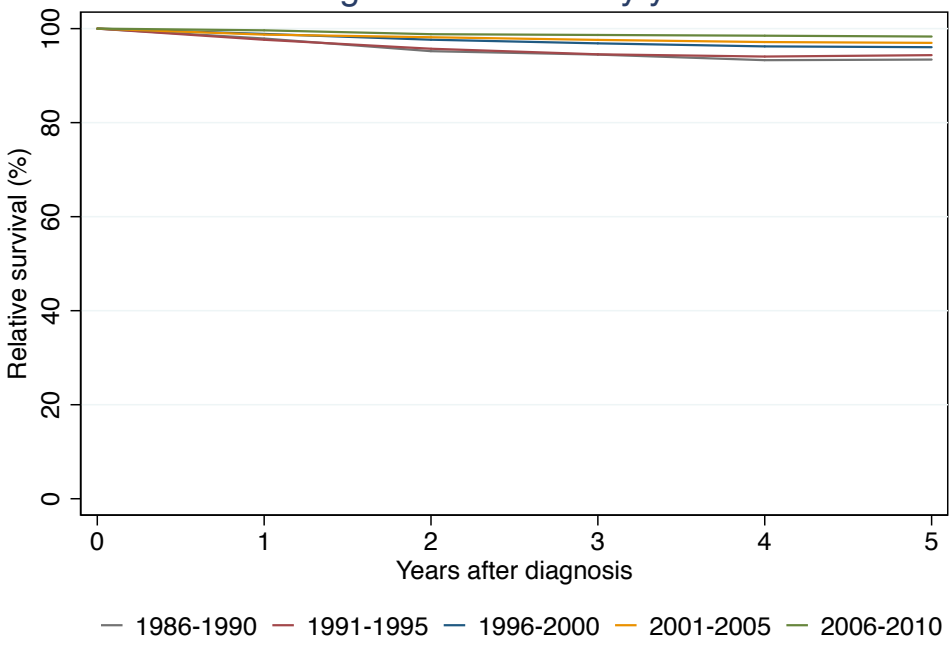
Continued improvement has been observed in survival for this disease. Better access to salvage (post-chemotherapy) surgery and the increasing multidisciplinary team management would have had some positive impact on the sufferers of this disease."

Table 1: Survival by years after diagnosis and region of residence for Victorian men with testicular cancer in 2006-2010 and for five-year periods from 1986-1990.

Years after diagnosis	Number of deaths	Survival (%)	95% confidence interval	
1	5	100	(99, 100)	
2	9	99	(98, 99)	
3	3	99	(98, 99)	
4	3	98	(97, 99)	
5	3	98	(97, 99)	
By subgroup	**Number of deaths**	**5-year survival (%)**	**95% confidence interval**	**p-value**
All cases	23	98	(97, 99)	
Region of residence				
Melbourne	15	99	(97, 99)	0.52
Rest of Victoria	8	97	(94, 99)	
Selected periods				
1986-1990	39	93	(91, 95)	0.14/<0.01[1]
1991-1995	42	94	(92, 96)	
1996-2000	36	96	(94, 97)	
2001-2005	32	97	(95, 98)	
2006-2010	23	98	(97, 99)	

1. The first p-value tests for difference in survival for the two most recent periods (i.e. the period from 2001-2005 with the period from 2006-2010). The second p-value tests fro the trend across all periods shown.

Figure 1: Survival by year



KIDNEY

The 5-year survival for people with kidney cancer is 70%.

Sex Survival is very similar for men (70%) and women (71%).

Age at diagnosis Older age at diagnosis was strongly associated with worse survival, with rates of 84% for persons under 45 years falling to 45% for those aged over 75 years at diagnosis.

Table 1: Survival by years after diagnosis, sex, age group, tumour morphology, region of residence and Integrated Cancer Services region for Victorians with kidney cancer in 2006-2010 and for five-year periods from 1986-1990.

Years after diagnosis	Number of deaths	Survival (%)	95% confidence interval	
1	534	84	(83, 85)	
2	184	79	(78, 81)	
3	156	75	(73, 77)	
4	102	73	(71, 74)	
5	87	70	(69, 72)	
By subgroup	**Number of deaths**	**5-year survival (%)**	**95% confidence interval**	**p-value**
All cases	1,063	70	(69, 72)	
Sex				
Male	708	70	(68, 72)	0.95
Female	355	71	(68, 74)	
Age at diagnosis				
0-44	47	84	(79, 88)	< 0.01
45-54	105	77	(73, 81)	
55-64	188	78	(75, 81)	
65-74	227	76	(72, 79)	
75+	496	45	(41, 50)	
Region of residence				
Melbourne	669	73	(71, 75)	< 0.01
Rest of Victoria	394	65	(62, 69)	
Integrated Cancer Services Region				
Southern	265	72	(69, 76)	< 0.01
Western and Central	181	73	(69, 77)	
North Eastern	223	73	(69, 77)	
Barwon	95	65	(58, 72)	
Grampians	79	57	(49, 65)	
Loddon-Mallee	71	74	(66, 80)	
Hume	72	67	(60, 74)	
Gippsland	77	60	(51, 68)	
Tumour morphology group				
Renal cell carcinoma	671	77	(75, 79)	< 0.01
Other adenocarcinoma	76	77	(71, 83)	
Other and unspecified carcinoma	22	16	(4, 35)	
Wilms tumour	4	88	(74, 95)	
No histological confirmation	286	19	(15, 24)	
Selected periods				
1986-1990	642	52	(49, 55)	0.02/<0.01[1]
1991-1995	894	51	(48, 54)	
1996-2000	908	62	(59, 64)	
2001-2005	1,002	68	(66, 70)	
2006-2010	1,063	70	(69, 72)	

1. The first p-value tests for difference in survival for the two most recent periods (i.e. the period from 2001-2005 with the period from 2006-2010). The second p-value tests fro the trend across all periods shown.

Tumour morphology The highest survival estimates were seen for patients with Wilms' tumour (88%), renal cell carcinoma (77%) and other adenocarcinomas (77%). Lower survival was seen for other carcinomas (16%) and tumours not histologically confirmed (19%).

Regional comparisons Survival was higher for residents of Melbourne (73%) than the rest of Victoria (65%).

Integrated Cancer Services regions Survival differed between Integrated Cancer Services regions ranging from 57% in the Grampians to 74% in Loddon-Mallee and 72-73% in the metropolitan regions.

Time trends Survival improved over the 20 year period from 1986-1990 to 2006-2010 from 52% to 70%.

A clinician's comment "There has been a continued improved survival rates, although a contribution to this trend may be the stage migration due to these cancers now being found incidentally - often at small size but routine ultrasound or CT scanning often for other symptoms. These tumours often have little malignant potential, and in many cases can in fact be managed with active surveillance or less invasive techniques reflecting their low biological aggression. Good adjuvant therapy, for renal cell carcinoma after nephrectomy, has not yet been found, and may lead to improved quality, but not quantity of life at this stage. Newer drugs are showing promising results and may impact on survival in the coming years.

Poorer survival in the regional areas of Victoria may be due to the more delayed diagnosis of more biologically aggressive disease - however, without staging data this cannot be confirmed."

Figure 1: Survival by year

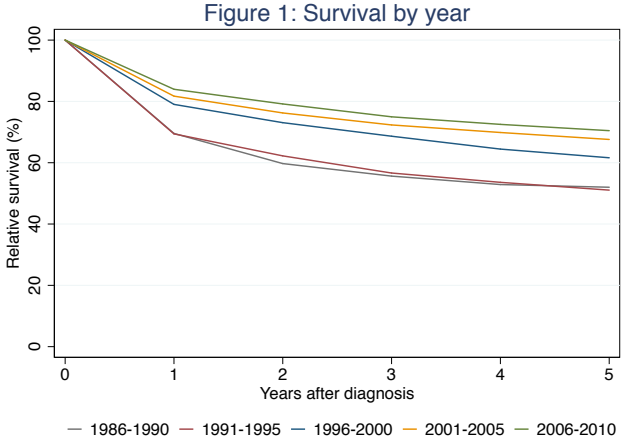


Figure 2: Survival by sex

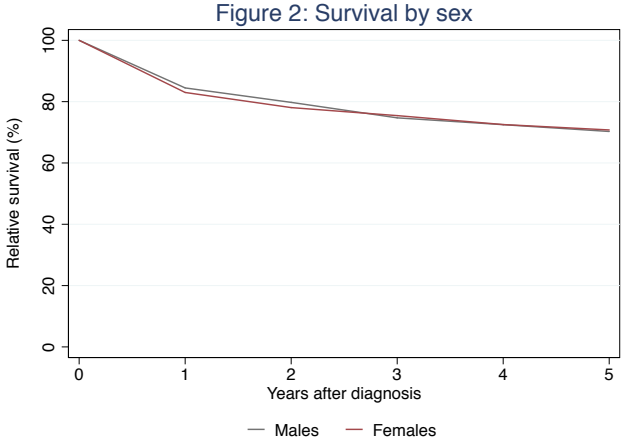


Figure 3: Survival by age group

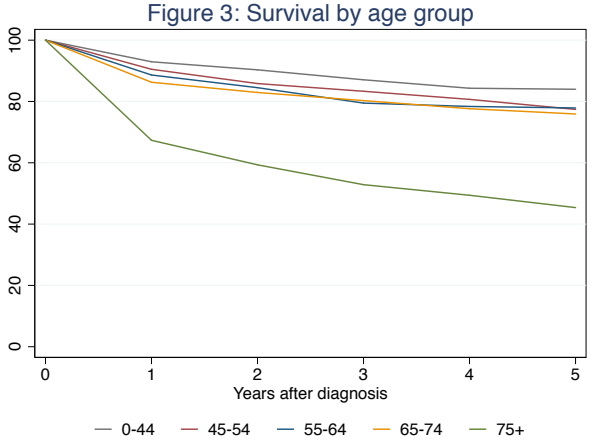
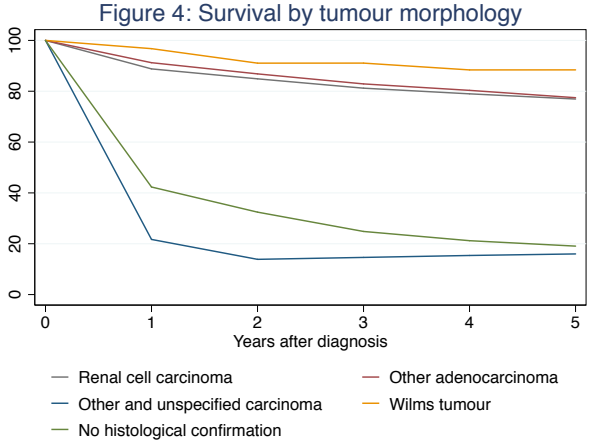


Figure 4: Survival by tumour morphology



RENAL PELVIS

includes urethra, ureter and other/unspecified urinary organs

Note: Analysis is presented only for the two most recent periods for this cancer. The Victorian Cancer Registry has coded tumours according to ICDO-3[5] since 2003. In ICDO-3, superficial non-invasive papillary transitional cell carcinoma (PTCC) is coded as in situ disease - these tumours were previously classified as invasive cancer and included in incidence reporting. Though all tumours were retrospectively re-coded to ICDO-3 we cannot be confident that the older data is strictly comparable - noting that superficial PTCC has a very favourable prognosis compared to invasive urothelial cancer, the decision was made to use only the recent data.

The 5-year survival for people with cancer of the renal pelvis is 40%.

Sex Survival was similar in men and women.

Age at diagnosis Older age at diagnosis was generally associated with worse survival.

Regional comparisons Survival was higher in metropolitan residents though the difference was not statistically significant.

Time trends Survival did not improve between 2001-2005 and 2006-2010.

A clinician's comment "Upper tract urothelial malignancies remain an uncommon but aggressive malignancy with poor 5-year survival and little advance over the time periods. Differences (statistically non-significant) between metropolitan and rural areas may be influenced by access to effective early surgery , radiation therapy and chemotherapy. Increasing management in a multidisciplinary teams may have an impact on survival for this disease."

Table 1: Survival by years after diagnosis, sex, age group, tumour morphology and region of residence for Victorians with cancer of the renal pelvis in 2006-2010 and for five-year periods from 1986-1990.

Years after diagnosis	Number of deaths	Survival (%)	95% confidence interval	
1	129	73	(69, 77)	
2	64	60	(55, 65)	
3	51	48	(44, 53)	
4	26	43	(38, 48)	
5	14	40	(35, 45)	
By subgroup	**Number of deaths**	**5-year survival (%)**	**95% confidence interval**	**p-value**
All cases	284	40	(35, 45)	
Sex				
Male	169	40	(33, 47)	0.81
Female	115	41	(33, 48)	
Age at diagnosis				
0-54	14	52	(35, 66)	< 0.01
55-64	16	72	(57, 83)	
65-74	74	37	(28, 46)	
75+	180	33	(26, 40)	
Region of residence				
Melbourne	194	43	(37, 49)	0.11
Rest of Victoria	90	34	(26, 43)	
Selected periods				
2001-2005	219	47	(41, 52)	0.25/0.25[1]
2006-2010	284	40	(35, 45)	

1. The first p-value tests for difference in survival for the two most recent periods (i.e. the period from 2001-2005 with the period from 2006-2010). The second p-value tests fro the trend across all periods shown.

Figure 1: Survival by year

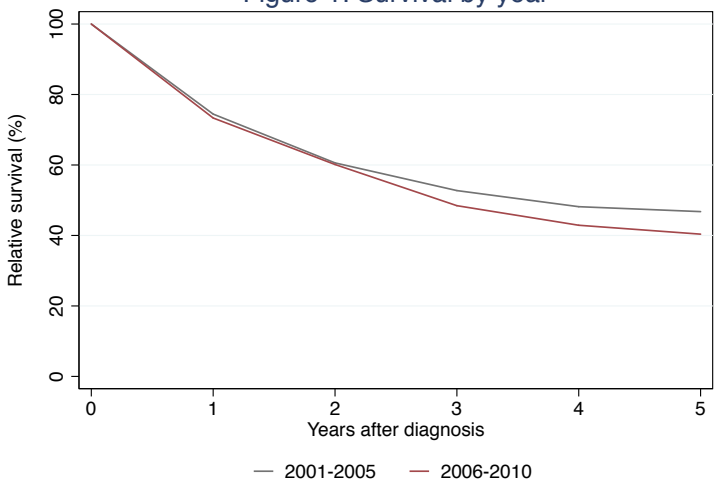


Figure 2: Survival by sex

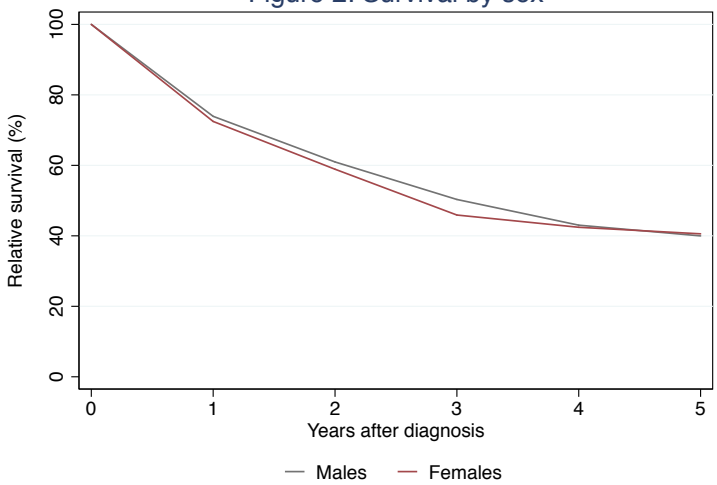
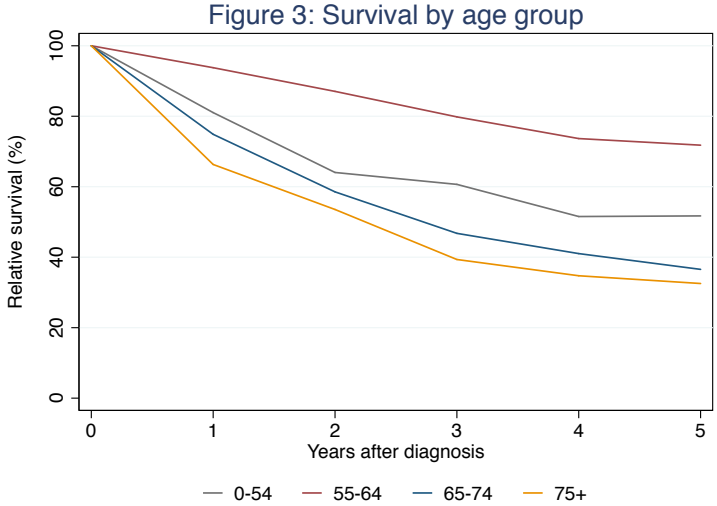


Figure 3: Survival by age group



BLADDER

Note: Analysis is presented only for the two most recent periods for this cancer. The Victorian Cancer Registry has coded tumours according to ICDO-3[5] since 2003. In ICDO-3, superficial non-invasive papillary transitional cell carcinoma (PTCC) is coded as in situ disease - these tumours were previously classified as invasive cancer and included in incidence reporting. Though all tumours were retrospectively re-coded to ICDO-3 we cannot be confident that the older data is strictly comparable - noting that superficial PTCC has a very favourable prognosis compared to invasive urothelial cancer, the decision was made to use only the recent data.

Table 1: Survival by years after diagnosis, sex, age group, tumour morphology, region of residence and Integrated Cancer Services region for Victorians with bladder cancer in 2006-2010 and for five-year periods from 1986-1990.

Years after diagnosis	Number of deaths	Survival (%)	95% confidence interval	
1	782	76	(74, 78)	
2	371	64	(62, 66)	
3	205	56	(54, 58)	
4	117	52	(50, 54)	
5	82	49	(47, 51)	
By subgroup	**Number of deaths**	**5-year survival (%)**	**95% confidence interval**	**p-value**
All cases	1,557	49	(47, 51)	
Sex				
Male	1,154	51	(48, 54)	< 0.01
Female	403	43	(38, 47)	
Age at diagnosis				
0-54	51	69	(61, 75)	< 0.01
55-64	151	61	(55, 66)	
65-74	329	55	(51, 59)	
75+	1,026	39	(36, 43)	
Region of residence				
Melbourne	1,090	50	(47, 53)	0.09
Rest of Victoria	467	46	(42, 50)	
Integrated Cancer Services Region				
Southern	429	52	(47, 56)	0.33
Western and Central	264	51	(45, 56)	
North Eastern	397	48	(44, 53)	
Barwon	126	40	(31, 48)	
Grampians	67	50	(38, 62)	
Loddon-Mallee	110	45	(37, 54)	
Hume	73	53	(43, 63)	
Gippsland	91	45	(35, 54)	
Tumour morphology group				
Transitional cell carcinoma	730	40	(37, 44)	< 0.01
Papillary transitional cell	581	59	(55, 62)	
Squamous cell carcinoma	32	13	(5, 23)	
Other and unspecified carcinoma	72	34	(24, 44)	
No histological confirmation	129	51	(44, 59)	
Selected periods				
2001-2005	1,145	50	(48, 53)	0.67/0.67[1]
2006-2010	1,557	49	(47, 51)	

1. The first p-value tests for difference in survival for the two most recent periods (i.e. the period from 2001-2005 with the period from 2006-2010). The second p-value tests fro the trend across all periods shown.

The 5-year survival for people with bladder cancer is 49%.

Sex Unusually, survival was higher for men (51%) than women (43%).

Age at diagnosis Older age at diagnosis was associated with worse survival with estimates of 69% for persons aged under 55 years falling to 39% for persons aged over 75 years.

Tumour morphology Survival was higher for patients with muscle-invasive papillary transitional cell carcinoma (59%) than with transitional cell (40%) and squamous cell carcinoma (13%). The high survival for non-histologically confirmed cancers (51%) suggests that these may not be muscle-invasive tumours.

Regional comparisons Survival did not differ significantly between residents of Melbourne and the rest of Victoria.

Integrated Cancer Services regions Survival did not differ significantly between the regions.

A clinician's comment "Bladder cancer remains a major uro-oncology problem with little advance in outcomes over the last 10 years and, in fact, over the last 20 years. Females fare worse suggesting an impact of delay to diagnosis, as many women presenting with haematuria are treated as having an infection rather than being investigated for potential bladder cancer.

Possible reasons for the poor outcomes include staging errors with prolonged attempts at bladder preservation, inadequate use of neoadjuvant chemotherapy , and delays to diagnosis and treatment . Significant additional resources are required to manage this common malignancy with relatively poor 5 year survival rates."

Figure 1: Survival by year

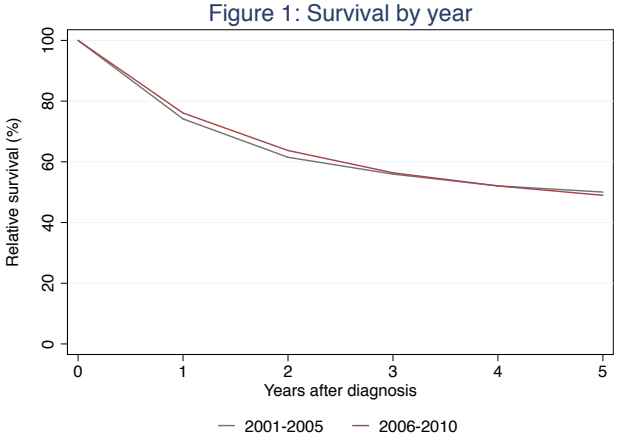


Figure 3: Survival by age group

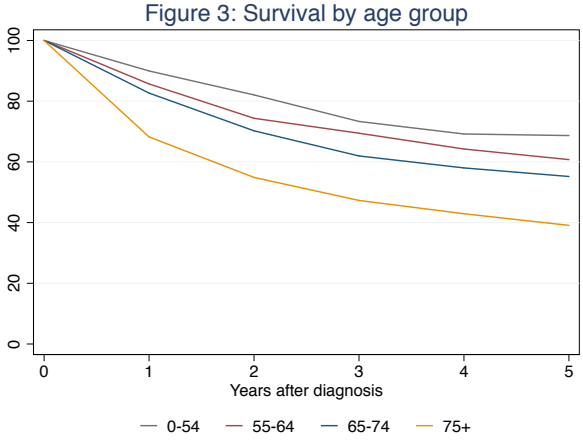


Figure 2: Survival by sex

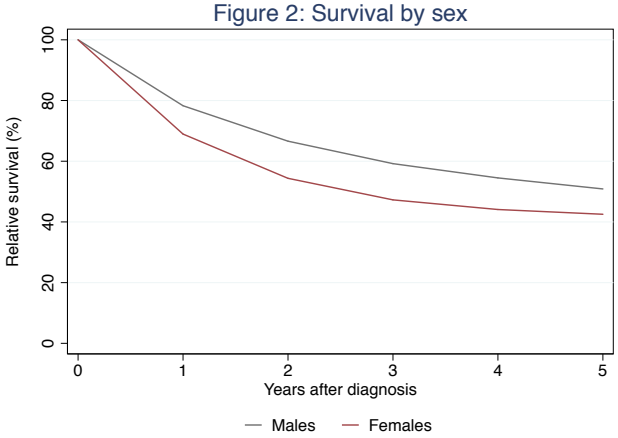
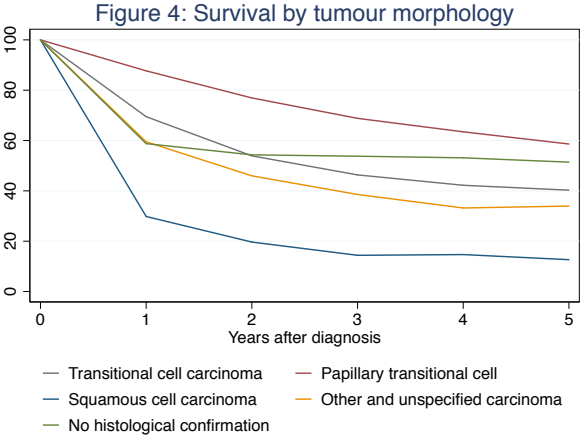


Figure 4: Survival by tumour morphology



CENTRAL NERVOUS SYSTEM

Includes all malignant tumours of brain, spinal cord, cranial nerves and other central nervous system

The 5-year survival for people with central nervous system cancers is 24%.

Sex Survival was lower for men (22%) than for women (27%).

Age at diagnosis Older age at diagnosis was strongly associated with worse survival, with estimates of 61% for persons aged under 45 years falling to only 2% for persons aged over 75 years. This will, in part, reflect the

Table 1: Survival by years after diagnosis, sex, age group, tumour morphology, region of residence and Integrated Cancer Services region for Victorians with brain and central nervous system cancer in 2006-2010 and for five-year periods from 1986-1990.

Years after diagnosis	Number of deaths	Survival (%)	95% confidence interval	
1	1,000	51	(49, 53)	
2	349	34	(32, 35)	
3	94	29	(27, 30)	
4	48	26	(24, 28)	
5	29	24	(23, 26)	
By subgroup	**Number of deaths**	**5-year survival (%)**	**95% confidence interval**	**p-value**
All cases	1,520	24	(23, 26)	
Sex				
Male	906	22	(20, 24)	0.03
Female	614	27	(25, 30)	
Age at diagnosis				
0-44	180	61	(57, 65)	< 0.01
45-54	179	34	(29, 39)	
55-64	366	14	(11, 18)	
65-74	383	8	(6, 11)	
75+	412	2	(1, 4)	
Region of residence				
Melbourne	1,068	25	(23, 27)	0.01
Rest of Victoria	452	22	(19, 25)	
Integrated Cancer Services Region				
Southern	407	28	(24, 31)	0.06
Western and Central	250	28	(24, 33)	
North Eastern	411	21	(18, 24)	
Barwon	125	21	(16, 27)	
Grampians	65	19	(13, 27)	
Loddon-Mallee	106	21	(15, 29)	
Hume	72	29	(21, 37)	
Gippsland	84	20	(14, 28)	
Tumour morphology group				
Glioblastoma	1,093	6	(5, 8)	< 0.01
Astrocytoma	116	50	(44, 56)	
Meningioma	8	52	(29, 71)	
No histological confirmation	175	21	(17, 25)	
Selected periods				
1986-1990	1,029	24	(22, 26)	<0.01/<0.01[1]
1991-1995	1,188	23	(21, 25)	
1996-2000	1,274	22	(20, 24)	
2001-2005	1,430	22	(20, 23)	
2006-2010	1,520	24	(23, 26)	

1. The first p-value tests for difference in survival for the two most recent periods (i.e. the period from 2001-2005 with the period from 2006-2010). The second p-value tests fro the trend across all periods shown.

different types of tumours occurring in persons at different times of life.

Tumour morphology Survival was higher for meningiomas (52%) and astrocytomas (50%) than for tumours without histological confirmation (21%). Glioblastomas (GBM) had the poorest survival (6%).

Regional comparisons Survival was higher in residents of Melbourne (25%) than in the rest of Victoria (22%).

Integrated Cancer Services regions Survival ranged from 19% to 29% between regions but differences were not statistically significant.

A clinician's comment "The survival proportions reflect the nature of these tumour types. There are no surprises regarding gender, age and survival outcomes. The tumour types broadly separate into childhood and adult tumours. The adult tumours are predominantly high-grade gliomas that have a uniformly poor prognosis. In particular, the survival outcomes for those aged over 65 years are particularly poor.

Small but significant gains are being made in survival, possibly resulting from more tailored treatment choices depending on histology, location and extent of tumour spread, immunohistochemical, cytogenetic and molecular findings, and measures of mitotic activity.

Surgery is still the first line treatment where possible, often followed by post-operative radiation. New conformal radiation techniques appear to be effective and offer potential for reducing toxicities previously associated with this treatment modality. The role of chemotherapy is increasing, and the introduction of the EORTC/Stupp protocol for Glioblastoma multiforme is likely to be reflected in improved survival within the next 5-year period."

Figure 1: Survival by year

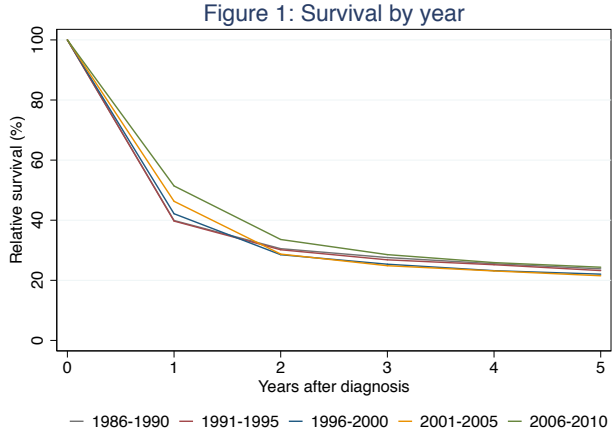


Figure 2: Survival by sex

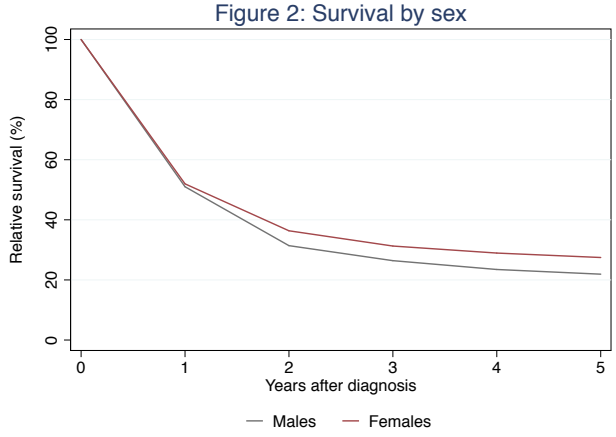


Figure 3: Survival by age group

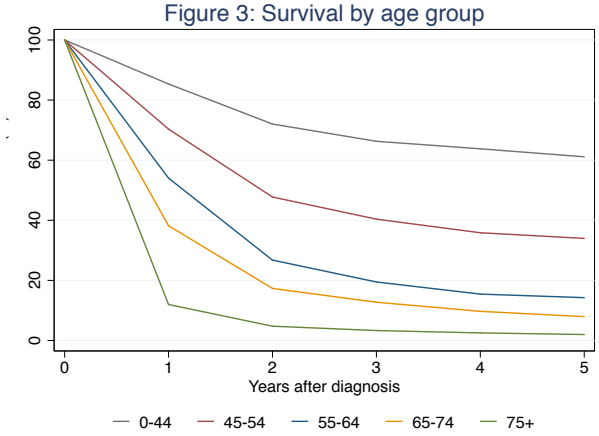
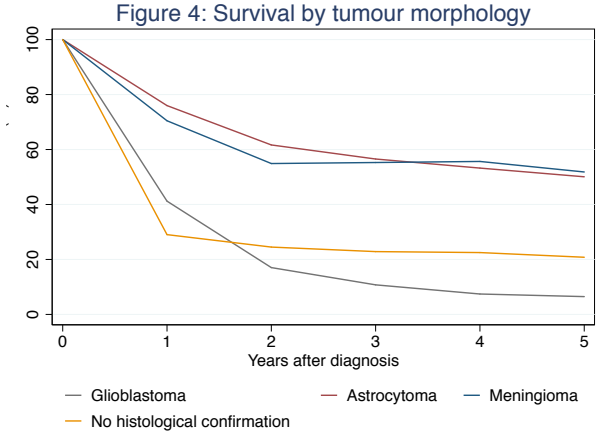


Figure 4: Survival by tumour morphology



THYROID

The 5-year survival for people with thyroid cancer is 93%, one of the highest of all cancers.

Sex Survival was lower for men (90%) than women (95%, the highest of any cancer).

Age at diagnosis Older age at diagnosis was associated with worse survival, falling from 99% and 90% for persons aged under 54 years and 55-74 years respectively, to 64% for persons aged over 75 years at diagnosis.

Tumour morphology Survival was higher for patients with follicular and papillary adenocarcinomas (both 97%), than for those with other tumours (59%).

Regional comparisons Survival was higher in residents of Melbourne (95%) than the rest of Victoria (86%).

Table 1: Survival by years after diagnosis, sex, age group, tumour morphology and region of residence for Victorians with thyroid cancer in 2006-2010 and for five-year periods from 1986-1990.

Years after diagnosis	Number of deaths	Survival (%)	95% confidence interval	
1	78	96	(95, 97)	
2	36	95	(94, 96)	
3	17	94	(93, 96)	
4	14	94	(93, 95)	
5	20	93	(92, 95)	
By subgroup	**Number of deaths**	**5-year survival (%)**	**95% confidence interval**	**p-value**
All cases	165	93	(92, 95)	
Sex				
Male	64	90	(86, 93)	0.03
Female	101	95	(93, 96)	
Age at diagnosis				
0-54	21	99	(98, 99)	< 0.01
55-74	66	90	(87, 93)	
75+	78	64	(53, 74)	
Region of residence				
Melbourne	101	95	(94, 97)	< 0.01
Rest of Victoria	64	86	(82, 90)	
Tumour morphology group				
Follicular adenocarcinoma	47	97	(95, 98)	< 0.01
Papillary adenocarcinoma	46	97	(95, 98)	
Other histology	64	59	(50, 67)	
Selected periods				
1986-1990	92	85	(81, 88)	0.55/<0.01[1]
1991-1995	99	88	(85, 91)	
1996-2000	94	92	(90, 94)	
2001-2005	121	93	(91, 94)	
2006-2010	165	93	(92, 95)	

1. The first p-value tests for difference in survival for the two most recent periods (i.e. the period from 2001-2005 with the period from 2006-2010). The second p-value tests fro the trend across all periods shown.

Time trends Survival improved over the 20 year period from 1986-1990 to 2006-2010 from 85% to 93%.

A clinician's comment "Improved survival is likely to be due to the rapidly increasing incidence of early stage thyroid cancer as a result widespread use of ultrasound, for a variety of indications, and the often incidental,discovery and treatment of smaller thyroid cancers that would perhaps never have become clinically significant.

It would be useful to examine the proportions of tumours of different morphological types over time as this proportion may influence overall survival."

Figure 1: Survival by year

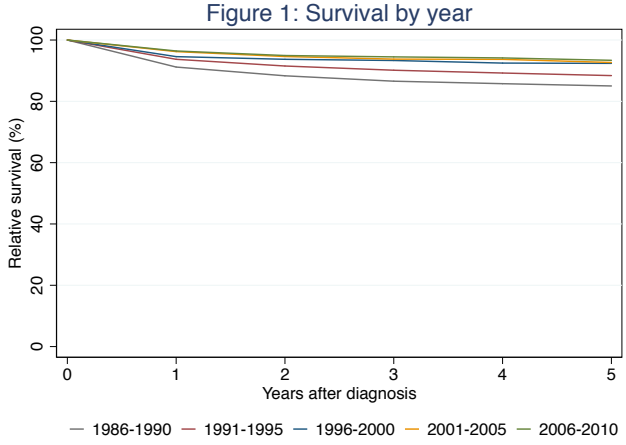


Figure 3: Survival by age group

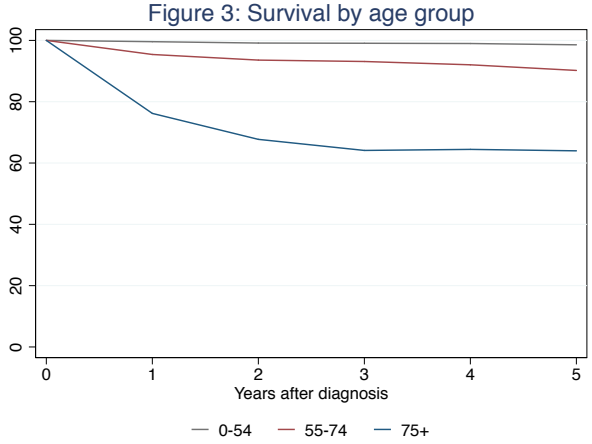


Figure 2: Survival by sex

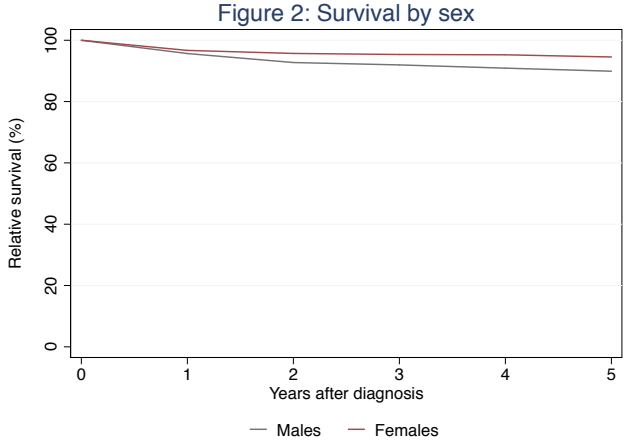
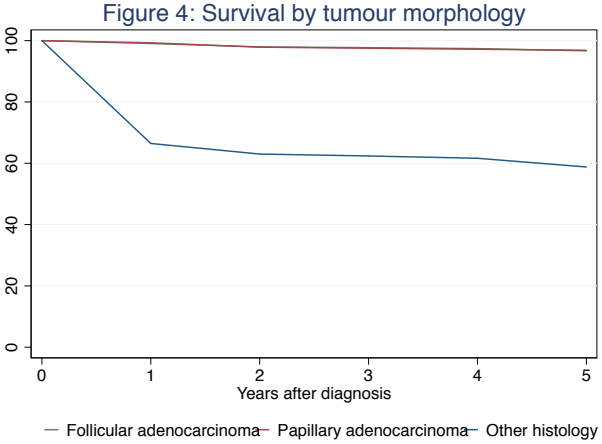


Figure 4: Survival by tumour morphology



UNKNOWN PRIMARY

Table 1: Survival by years after diagnosis, sex, age group, tumour morphology, region of residence and Integrated Cancer Services region for Victorians with cancers of unknown primary site in 2006-2010 and for five-year periods from 1986-1990.

Years after diagnosis	Number of deaths	Survival (%)	95% confidence interval	
1	1,983	22	(20, 23)	
2	195	16	(15, 17)	
3	59	15	(14, 16)	
4	50	14	(13, 15)	
5	35	13	(12, 14)	
By subgroup	**Number of deaths**	**5-year survival (%)**	**95% confidence interval**	**p-value**
All cases	2,322	13	(12, 14)	
Sex				
Male	1,130	14	(13, 16)	0.01
Female	1,192	11	(10, 13)	
Age at diagnosis				
0-44	52	42	(33, 51)	< 0.01
45-54	142	29	(23, 35)	
55-64	279	27	(23, 32)	
65-74	480	15	(13, 18)	
75+	1,369	5	(4, 6)	
Region of residence				
Melbourne	1,549	13	(11, 14)	0.86
Rest of Victoria	773	13	(11, 15)	
Integrated Cancer Services Region				
Southern	655	14	(12, 16)	0.20
Western and Central	388	10	(8, 12)	
North Eastern	506	13	(11, 16)	
Barwon	207	12	(9, 16)	
Grampians	131	13	(9, 19)	
Loddon-Mallee	178	14	(10, 18)	
Hume	135	12	(9, 16)	
Gippsland	122	13	(9, 17)	
Tumour morphology group				
Squamous and transitional cell	120	62	(55, 69)	< 0.01
Adenocarcinoma	833	9	(8, 11)	
Other specific carcinoma	226	21	(16, 26)	
Carcinoma NOS	333	12	(9, 15)	
Other specified cancers	56	18	(12, 25)	
No histological confirmation	754	2	(1, 2)	
Selected periods				
1986-1990	2,582	6	(6, 7)	<0.01/<0.01[1]
1991-1995	3,014	6	(6, 7)	
1996-2000	2,927	5	(5, 6)	
2001-2005	2,657	7	(7, 8)	
2006-2010	2,322	13	(12, 14)	

1. The first p-value tests for difference in survival for the two most recent periods (i.e. the period from 2001-2005 with the period from 2006-2010). The second p-value tests fro the trend across all periods shown.

The 5-year survival for people with cancers of unknown primary site was 13%.

Sex Survival was better for men (14%) than for women (11%).

Age at diagnosis Survival was poor for all age groups but declined with increasing age at diagnosis from 42% for patients aged under 45 years to 5% for those aged over 75 years at diagnosis.

Tumour morphology Survival differed between tumours of different morphology, with the highest being for squamous and transitional cell carcinomas (62%) and other specified carcinomas (21%) and lower survival for adenocarcinomas (9%). The poorest survival was seen for tumours without histological confirmation (2%).

Regional comparisons Survival did not differ between residents of Melbourne and the rest of Victoria.

Time trends Survival improved significantly over the 20 year period from 1986-1990 to 2006-2010 from 6% to 13%, and between the two most recent periods from 7% to 13%.

A clinician's comment "This group is likely to become smaller, possibly with poor survival, as improved diagnostic techniques assist in identifying the possible primary site (and hence cases will get classified elsewhere)."

Figure 1: Survival by year

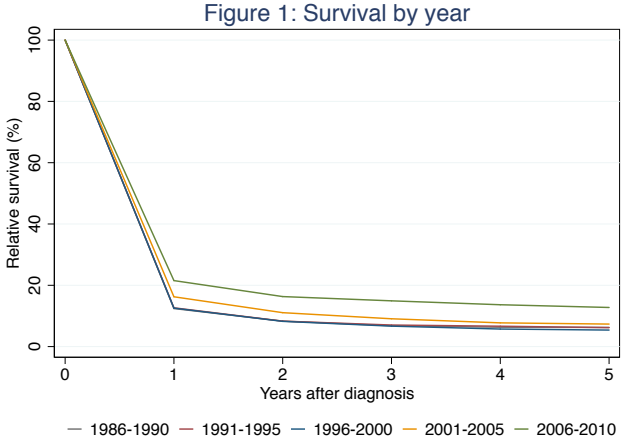


Figure 3: Survival by age group

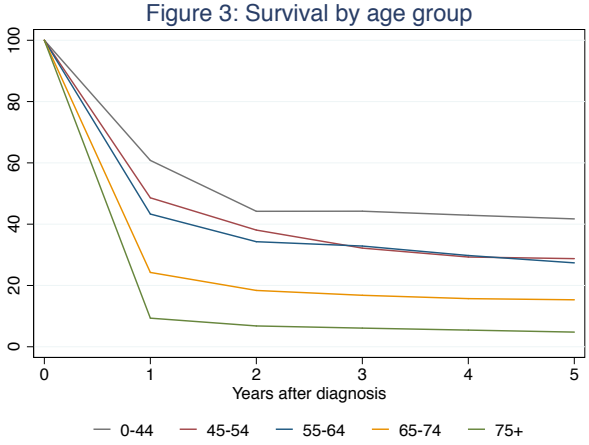


Figure 2: Survival by sex

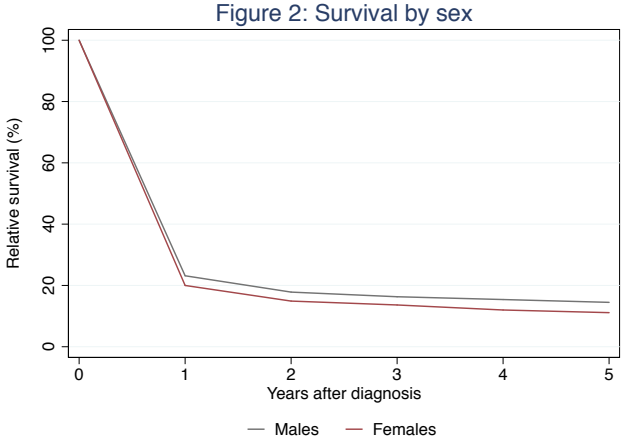
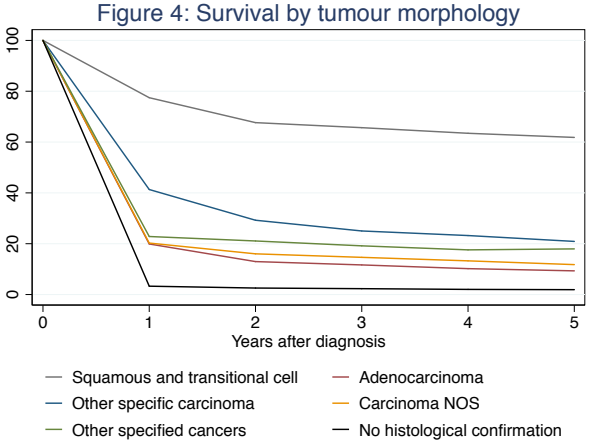


Figure 4: Survival by tumour morphology



LYMPHOID NEOPLASMS:
HODGKIN LYMPHOMA

The 5-year survival for people with Hodgkin lymphoma is 88%.

Sex Survival did not differ significantly between men and women.

Age at diagnosis Survival was very good for younger age groups but declined after the age of 55.

Regional comparisons Survival was higher for residents of Melbourne (89%) than the rest of Victoria (83%).

Time trends Survival improved from 77% to 88% over the 20 year period from 1986-1990 to 2006-2010.

A clinician's comment "Substantial survival gains were achieved for patients with Hodgkin Lymphoma in the 1970's and 1980's. More recent improvements have been incremental with a greater emphasis on reduction in truly long-term (>10 year) risks for late consequences of curative therapy and minimisation of risks of second cancers. Ensuring equity of access to optimal therapy throughout Victoria remains a priority.

Table 1: Survival by years after diagnosis, sex, age group and region of residence for Victorians with Hodgkin lymphoma in 2006-2010 and for five-year periods from 1986-1990.

Years after diagnosis	Number of deaths	Survival (%)	95% confidence interval	
1	54	94	(92, 95)	
2	21	92	(89, 93)	
3	14	90	(88, 92)	
4	16	88	(86, 90)	
5	7	88	(85, 90)	
By subgroup	**Number of deaths**	**5-year survival (%)**	**95% confidence interval**	**p-value**
All cases	112	88	(85, 90)	
Sex				
Male	68	86	(82, 89)	0.15
Female	44	90	(86, 93)	
Age at diagnosis				
0-14	1	98	(84, 100)	< 0.01
15-29	8	97	(94, 99)	
30-44	7	97	(93, 99)	
45-54	8	91	(82, 96)	
55-64	20	76	(65, 84)	
65-74	29	57	(43, 70)	
75+	39	46	(32, 62)	
Region of residence				
Melbourne	70	89	(86, 92)	0.04
Rest of Victoria	42	83	(78, 88)	
Selected periods				
1986-1990	113	77	(72, 80)	0.34/<0.01[1]
1991-1995	109	80	(76, 83)	
1996-2000	89	86	(83, 89)	
2001-2005	103	86	(83, 88)	
2006-2010	112	88	(85, 90)	

1. The first p-value tests for difference in survival for the two most recent periods (i.e. the period from 2001-2005 with the period from 2006-2010). The second p-value tests fro the trend across all periods shown.

Figure 1: Survival by year

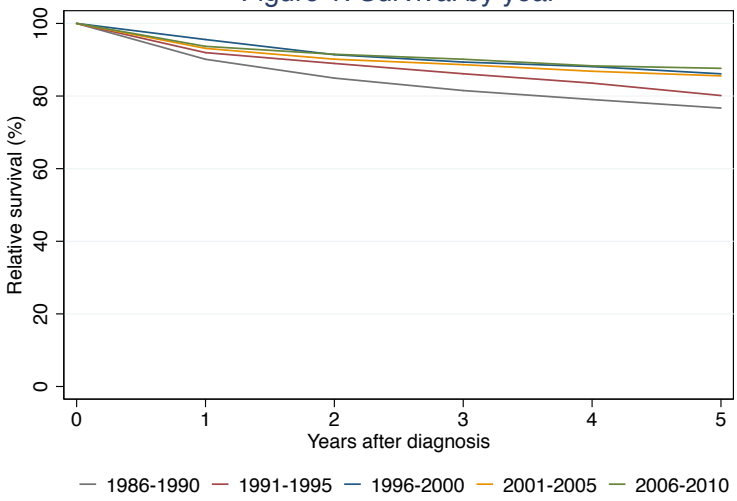


Figure 2: Survival by sex

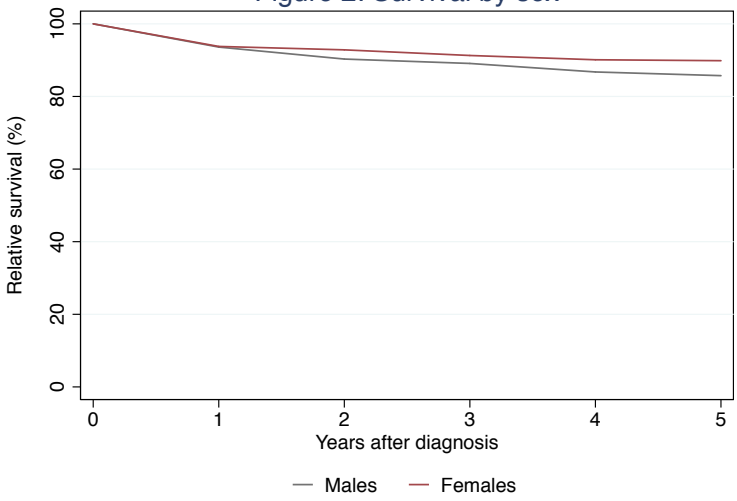
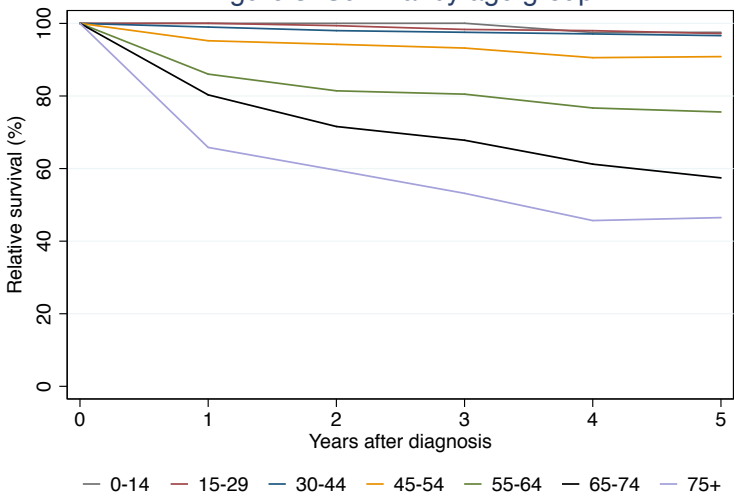


Figure 3: Survival by age group



LYMPHOID NEOPLASMS:
MATURE B-CELL NEOPLASMS

The 5-year survival for people with Mature B-cell neoplasms is 66%.

Sex Survival is similar for men and women (66%).

Age at diagnosis Older age at diagnosis was associated with worse survival, with estimates of 93% for children aged under 15 years falling to 46% for persons over 75 years at diagnosis.

Table 1: Survival by years after diagnosis, sex, age group and region of residence for Victorians with mature B-cell neoplasms in 2006-2010 and for five-year periods from 1986-1990.

Years after diagnosis	Number of deaths	Survival (%)	95% confidence interval	
1	1,233	85	(85, 86)	
2	589	79	(78, 80)	
3	406	74	(73, 75)	
4	351	70	(69, 71)	
5	288	66	(65, 68)	
By subgroup	**Number of deaths**	**5-year survival (%)**	**95% confidence interval**	**p-value**
All cases	2,867	66	(65, 68)	
Sex				
Male	1,664	66	(65, 68)	0.52
Female	1,203	66	(64, 68)	
Age at diagnosis				
0-14	2	93	(79, 98)	< 0.01
15-29	8	92	(85, 96)	
30-44	56	88	(85, 90)	
45-54	155	83	(80, 85)	
55-64	379	77	(74, 79)	
65-74	705	65	(63, 67)	
75+	1,562	46	(43, 49)	
Region of residence				
Melbourne	1,959	67	(65, 68)	0.10
Rest of Victoria	908	65	(63, 67)	
Integrated Cancer Services Region				
Southern	753	67	(65, 70)	0.38
Western and Central	477	67	(64, 69)	
North Eastern	729	66	(64, 69)	
Barwon	223	66	(61, 70)	
Grampians	175	61	(56, 66)	
Loddon-Mallee	203	66	(61, 70)	
Hume	152	67	(61, 72)	
Gippsland	155	65	(59, 70)	
Selected periods				
1986-1990	1,763	48	(46, 50)	<0.01/<0.01[1]
1991-1995	2,375	49	(47, 50)	
1996-2000	2,670	54	(52, 55)	
2001-2005	2,815	60	(59, 61)	
2006-2010	2,867	66	(65, 68)	

1. The first p-value tests for difference in survival for the two most recent periods (i.e. the period from 2001-2005 with the period from 2006-2010). The second p-value tests fro the trend across all periods shown.

Regional comparisons Survival did not significantly differ between residents of Melbourne and the rest of Victoria.

Time trends Survival improved over the 20 year period from 1986-1990 to 2006-2010 from 48% to 66% and between the two most recent periods, 2001-2005 and 2006-2010, from 60% to 66%.

A clinician's comment This category includes a mixture of clinically indolent but incurable (e.g. follicular lymphoma) and aggressive but curable (diffuse large B-cell lymphoma) entities. The initial availability of the monoclonal antibody rituximab from 1998 and its increasingly broad utilisation consistent with emerging clinical trial data is the major contributor to recent improvements with gratifying consistency of outcomes across geographic regions, and all but the highest age categories.

Figure 1: Survival by year

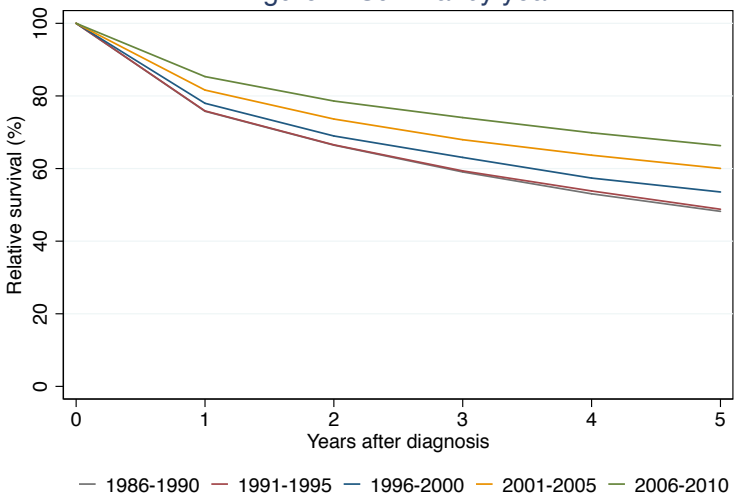


Figure 2: Survival by sex

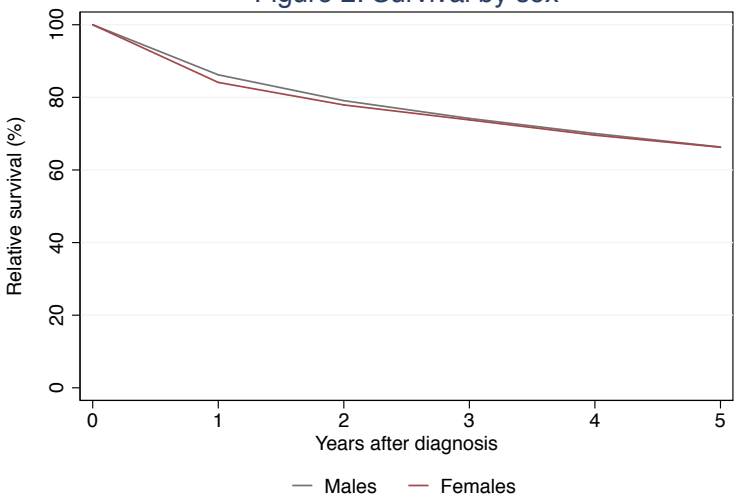
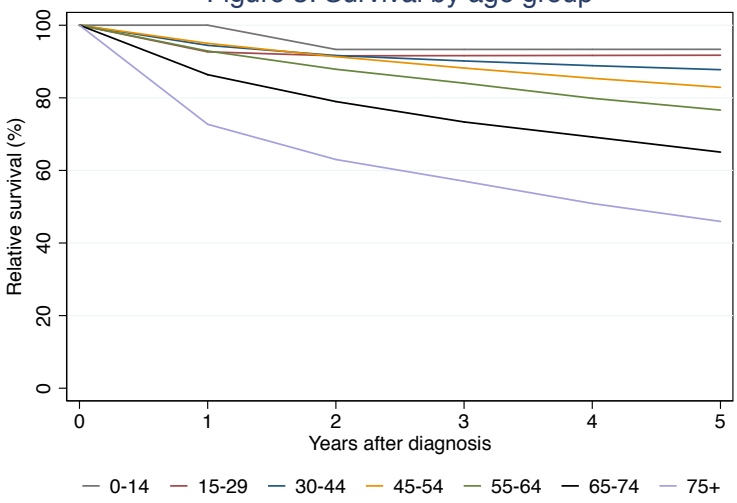


Figure 3: Survival by age group



LYMPHOID NEOPLASMS: MATURE T- & NK-CELL NEOPLASMS

The 5-year survival for people with mature T-cell and NK-cell neoplasms is 56%.

Sex Survival is slightly lower for men (54%) than for women (58%).

Age at diagnosis Older age at diagnosis was associated with worse survival.

Regional comparisons Survival did not differ between residents of Melbourne and the rest of Victoria.

Time trends Survival showed no significant improvement over the 20 year period.

A clinician's comment "This category includes a large number of individually rare but typically aggressive cancers. These disorders are more prevalent among people of Asian ancestry. Recent refinements in diagnostic criteria and pathologic techniques likely explain the apparent variation in reported outcome. In contrast to the B-cell lymphomas, there have not been major advances in available treatments for this category of lymphomas."

Table 1: Survival by years after diagnosis, sex, age group and region of residence for Victorians with mature T- and NK-cell neoplasms in 2006-2010 and for five-year periods from 1986-1990.

Years after diagnosis	Number of deaths	Survival (%)	95% confidence interval	
1	130	73	(69, 76)	
2	45	64	(60, 68)	
3	25	59	(55, 63)	
4	14	57	(53, 61)	
5	9	56	(51, 60)	
By subgroup	**Number of deaths**	**5-year survival (%)**	**95% confidence interval**	**p-value**
All cases	223	56	(51, 60)	
Sex				
Male	135	54	(48, 60)	0.25
Female	88	58	(51, 65)	
Age at diagnosis				
0-14	2	77	(37, 94)	< 0.01
15-29	3	85	(64, 95)	
30-44	12	77	(64, 86)	
45-54	17	70	(57, 79)	
55-64	39	56	(45, 66)	
65-74	42	60	(50, 69)	
75+	108	31	(23, 40)	
Region of residence				
Melbourne	154	57	(51, 62)	0.58
Rest of Victoria	69	55	(46, 63)	
Selected periods				
1986-1990	52	63	(52, 73)	0.02/0.09[1]
1991-1995	85	60	(52, 68)	
1996-2000	105	54	(46, 60)	
2001-2005	153	63	(57, 68)	
2006-2010	223	56	(51, 60)	

1. The first p-value tests for difference in survival for the two most recent periods (i.e. the period from 2001-2005 with the period from 2006-2010). The second p-value tests fro the trend across all periods shown.

Figure 1: Survival by year

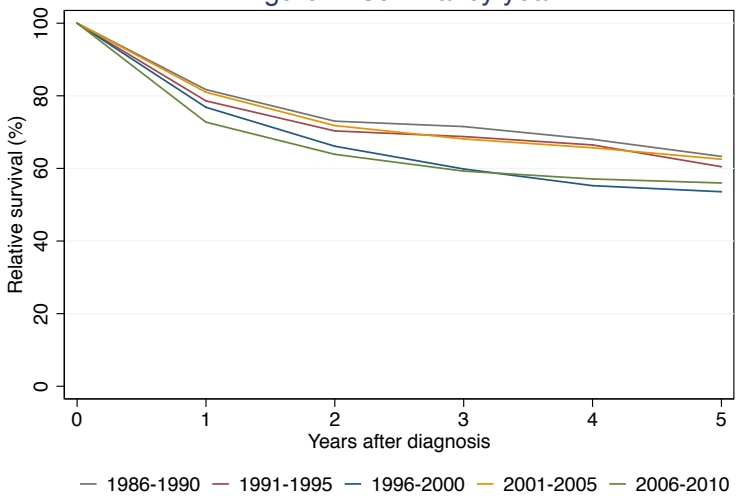


Figure 2: Survival by sex

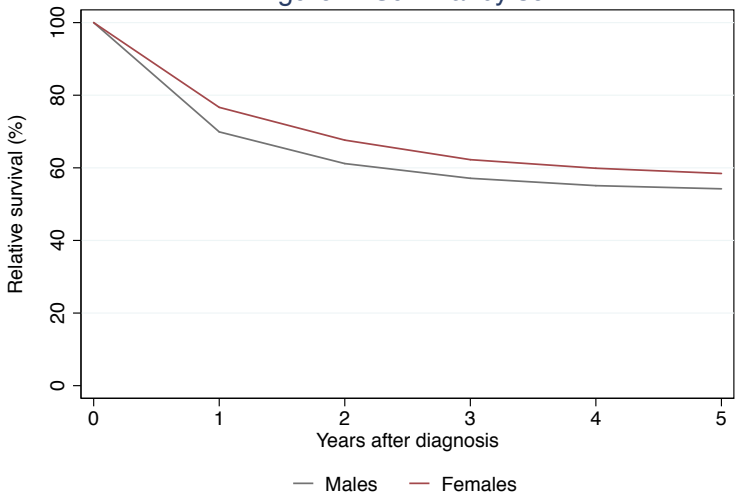
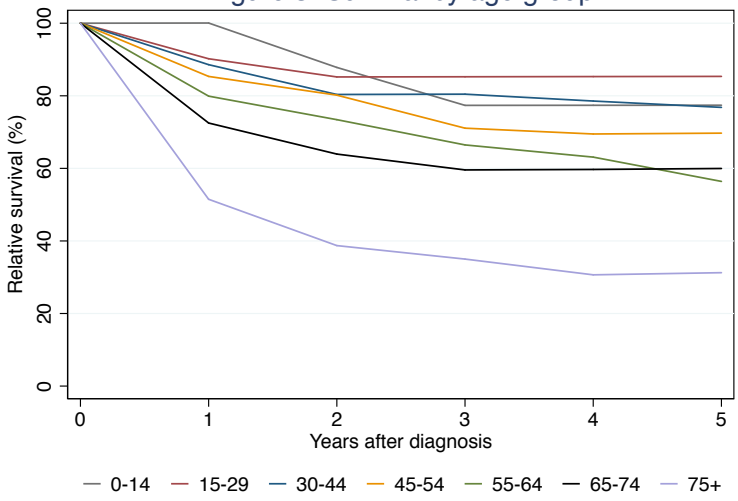


Figure 3: Survival by age group



LYMPHOID NEOPLASMS: ACUTE LYMPHOBLASTIC LEUKAEMIA

The 5-year survival for people with acute lymphoblastic leukaemia is 71%.

Sex Survival was similar for men (70%) and women (73%).

Age at diagnosis Survival was very good for younger age groups, especially in children (95%), but declined rapidly after the age of 50 to just 5% in those aged over 75 years at diagnosis.

Regional comparisons Survival was similar in residents of Melbourne and the rest of Victoria.

Time trends Survival improved from 55% to 71% over the 20 year period from 1986-1990 to 2006-2010 and between the two most recent periods, 2001-2005 and 2006-2010, from 64% to 71%.

A clinician's comment "The outcomes for children remain excellent and are a shining example of the achievements of a well-structured international clinical trial program. With increasing utilisation of "paediatric" treatment programs into the adolescent and young adult group (up to the 40's), overall outcomes have improved significantly, but with older adults still having unacceptably inferior outcomes."

Table 1: Survival by years after diagnosis, sex, age group and region of residence for Victorians with acute lymphoblastic leukaemia in 2006-2010 and for five-year periods from 1986-1990.

Years after diagnosis	Number of deaths	Survival (%)	95% confidence interval	
1	61	87	(84, 89)	
2	41	77	(73, 81)	
3	13	74	(70, 78)	
4	6	73	(69, 77)	
5	6	71	(67, 75)	
By subgroup	**Number of deaths**	**5-year survival (%)**	**95% confidence interval**	**p-value**
All cases	127	71	(67, 75)	
Sex				
Male	80	70	(65, 75)	0.50
Female	47	73	(67, 79)	
Age at diagnosis				
0-14	12	95	(91, 97)	< 0.01
15-29	25	60	(47, 70)	
30-44	13	66	(49, 79)	
45-54	17	46	(30, 62)	
55-64	18	29	(13, 49)	
65-74	19	15	(5, 31)	
75+	23	5	(1, 18)	
Region of residence				
Melbourne	93	72	(67, 76)	0.57
Rest of Victoria	34	71	(62, 78)	
Selected periods				
1986-1990	137	55	(49, 60)	0.02/<0.01[1]
1991-1995	177	55	(50, 59)	
1996-2000	167	58	(53, 63)	
2001-2005	147	64	(59, 68)	
2006-2010	127	71	(67, 75)	

1. The first p-value tests for difference in survival for the two most recent periods (i.e. the period from 2001-2005 with the period from 2006-2010). The second p-value tests fro the trend across all periods shown.

Figure 1: Survival by year

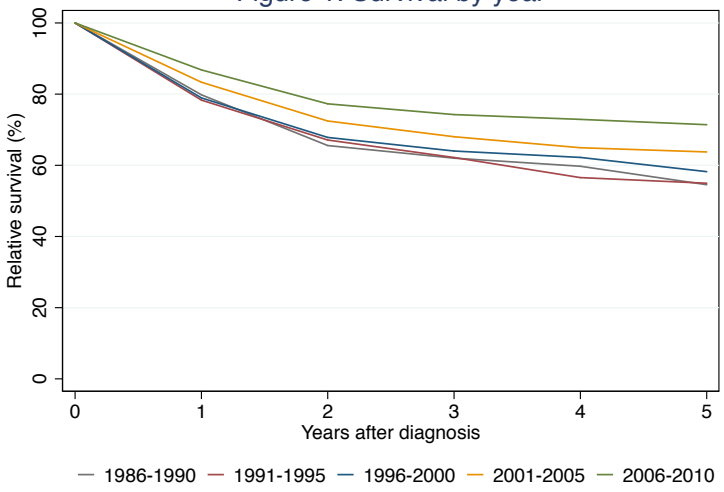


Figure 2: Survival by sex

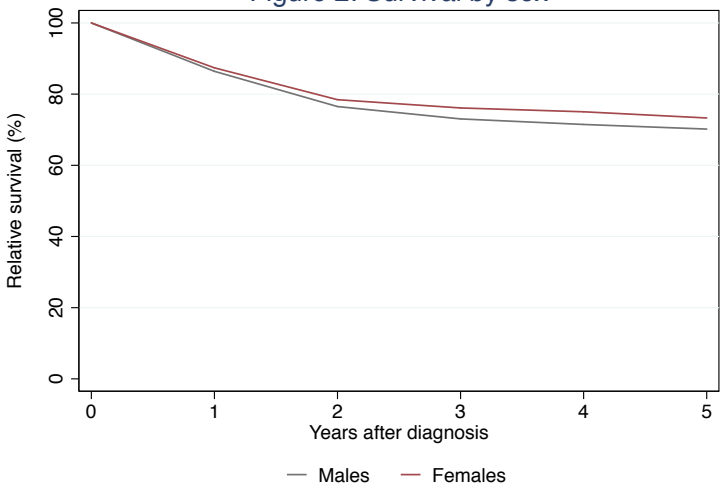
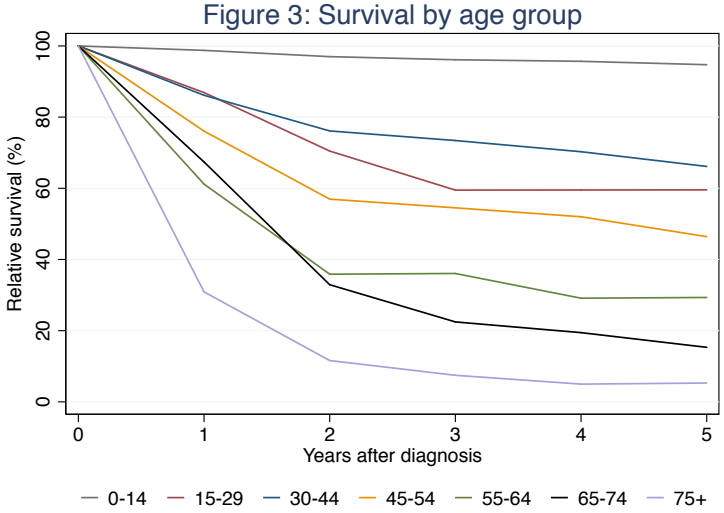


Figure 3: Survival by age group



LYMPHOID NEOPLASMS:
NON-HODGKIN LYMPHOMA

The 5-year survival for people with non-Hodgkin lymphoma is 68%.

Sex Survival was similar for men and women (67%).

Age at diagnosis Older age at diagnosis was associated with worse survival, with estimates of 84% for persons aged under 65 years falling to 51% for persons aged over 75 years at diagnosis.

Regional comparisons Survival was higher for residents of Melbourne (72%) than for the rest of Victoria (59%).

Time trends Survival improved over the 20 year period from 1986-1990 to 2006-2010 from 44% to 68% and between the two most recent periods, 2001-2005 and 2006-2010, from 59% to 68%.

A clinician's comment "The improvement in survival over time is expected as there have been significant changes in radiotherapy and drug therapy for this group of diseases. This includes the use of limited field radiotherapy and new antibody therapies."

Table 1: Survival by years after diagnosis, sex, age group and region of residence for Victorians with non-Hodgkin lymphoma in 2006-2010 and for five-year periods from 1986-1990.

Years after diagnosis	Number of deaths	Survival (%)	95% confidence interval	
1	89	81	(77, 84)	
2	17	79	(74, 83)	
3	25	74	(70, 79)	
4	22	71	(66, 75)	
5	21	68	(62, 73)	
By subgroup	**Number of deaths**	**5-year survival (%)**	**95% confidence interval**	**p-value**
All cases	174	68	(62, 73)	
Sex				
Male	99	67	(60, 74)	0.95
Female	75	67	(59, 74)	
Age at diagnosis				
0-64	22	84	(77, 90)	< 0.01
65-74	33	73	(62, 81)	
75+	119	51	(42, 60)	
Region of residence				
Melbourne	107	72	(65, 78)	0.02
Rest of Victoria	67	59	(50, 67)	
Selected periods				
1986-1990	184	44	(39, 50)	0.02/<0.01[1]
1991-1995	247	49	(44, 55)	
1996-2000	311	50	(46, 55)	
2001-2005	260	59	(55, 64)	
2006-2010	174	68	(62, 73)	

1. The first p-value tests for difference in survival for the two most recent periods (i.e. the period from 2001-2005 with the period from 2006-2010). The second p-value tests fro the trend across all periods shown.

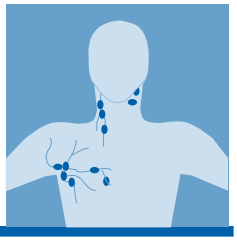


Figure 1: Survival by year

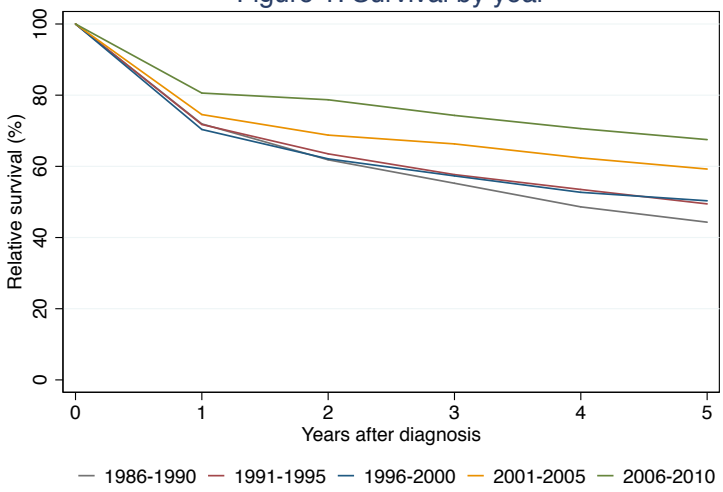


Figure 2: Survival by sex

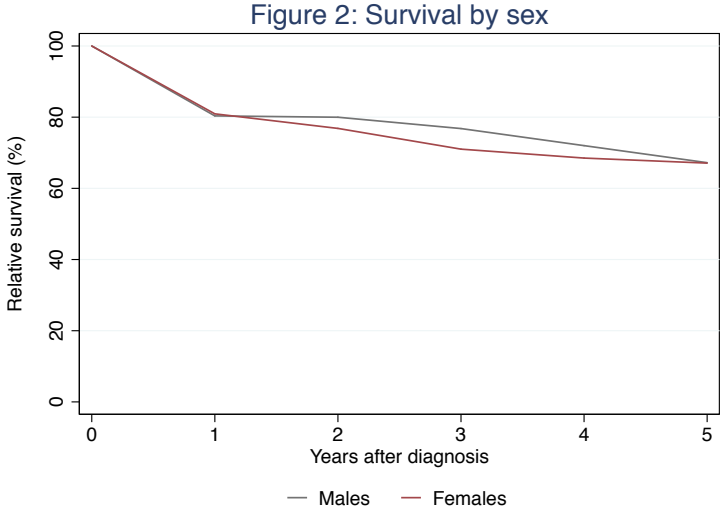
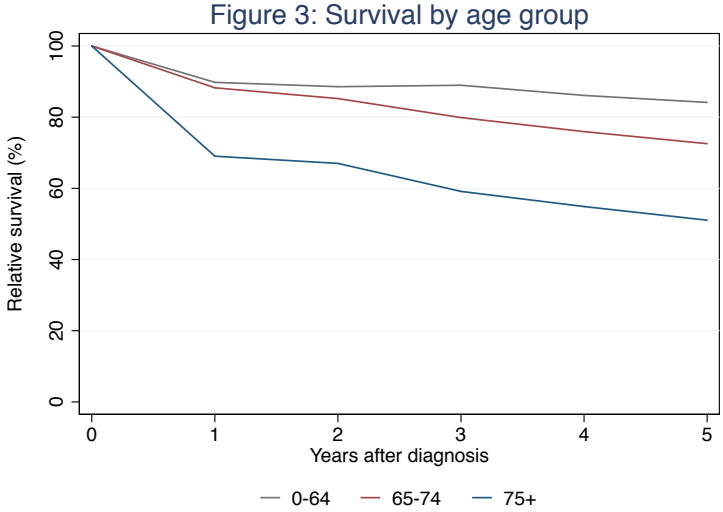


Figure 3: Survival by age group



LYMPHOID NEOPLASMS: UNSPECIFIED

The 5-year survival for people with unspecified lymphoid neoplasms (See page 89 for definition) is 67%.

Sex Survival did not differ significantly between men (73%) and women (60%).

Age at diagnosis Older age at diagnosis was associated with worse survival, with estimates of 91% for persons aged under 55 years falling to 37% for persons aged over 75 years at diagnosis.

Regional comparisons Survival did not differ significantly between residents of Melbourne and the rest of Victoria.

Time trends Survival improved over the 20 year period from 1986-1990 to 2006-2010 from 35% to 67%, and between the two most recent periods, 2001-2005 and 2006-2010 from 43% to 67%.

Table 1: Survival by years after diagnosis, sex, age group and region of residence for Victorians with unspecified lymphoid neoplasms in 2006-2010 and for five-year periods from 1986-1990.

Years after diagnosis	Number of deaths	Survival (%)	95% confidence interval	
1	61	77	(72, 82)	
2	11	74	(68, 79)	
3	7	71	(65, 77)	
4	5	69	(62, 76)	
5	5	67	(59, 74)	
By subgroup	**Number of deaths**	**5-year survival (%)**	**95% confidence interval**	**p-value**
All cases	89	67	(59, 74)	
Sex				
Male	42	73	(62, 82)	0.14
Female	47	60	(48, 71)	
Age at diagnosis				
0-54	5	91	(81, 97)	< 0.01
55-74	19	79	(67, 89)	
75+	65	37	(26, 49)	
Region of residence				
Melbourne	59	69	(60, 78)	0.65
Rest of Victoria	30	61	(45, 75)	
Selected periods				
1986-1990	152	35	(29, 42)	<0.01/<0.01[1]
1991-1995	140	48	(41, 54)	
1996-2000	135	41	(35, 48)	
2001-2005	102	43	(36, 51)	
2006-2010	89	67	(59, 74)	

1. The first p-value tests for difference in survival for the two most recent periods (i.e. the period from 2001-2005 with the period from 2006-2010). The second p-value tests fro the trend across all periods shown.

Figure 1: Survival by year

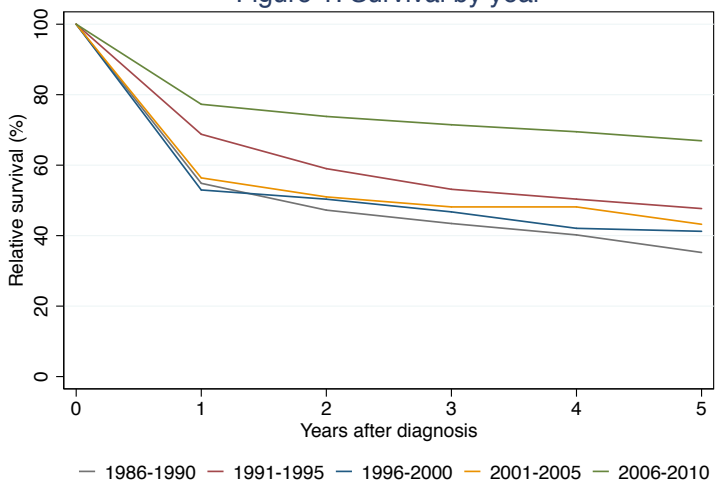


Figure 2: Survival by sex

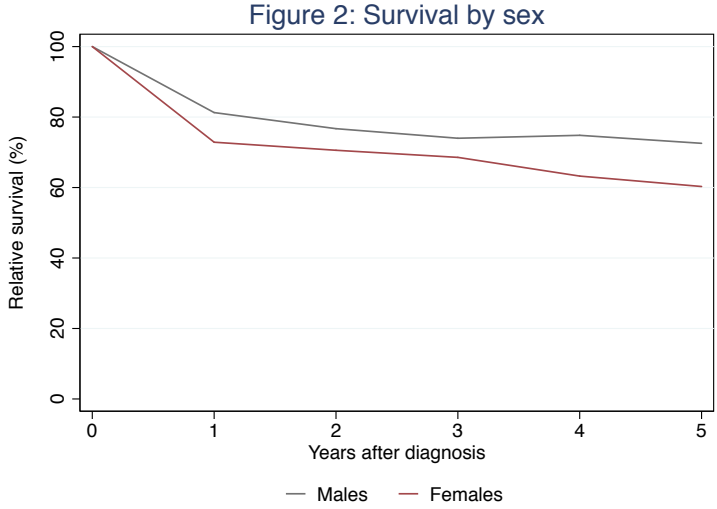
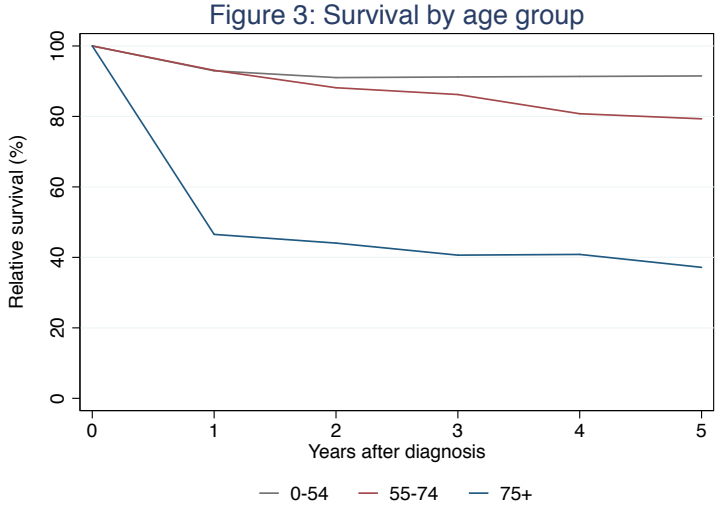


Figure 3: Survival by age group



MYELOID NEOPLASMS: ACUTE MYELOID LEUKAEMIA

The 5-year survival for people with acute myeloid leukaemia is 24%.

Sex Survival was similar for men (23%) and for women (25%).

Age at diagnosis Survival decreased dramatically with increasing age from 67% in persons diagnosed before the age of 45 years to just 1% for persons aged over 75 years.

Regional comparisons Survival was very similar for residents of Melbourne and the rest of Victoria.

Time trends Survival improved over the 20 year period from 1986-1990 to 2006-2010 from 10% to 24%.

A clinician's comment "The ability to safely deliver intensified therapy, wider utilisation of allogeneic transplantation with increasing age, and better molecular characterisation of disease sub-types continue to deliver incremental improvements in outcome.

However, outcomes overall remain unacceptable, particularly for patients aged >65 where cure is rarely attained."

Table 1: Survival by years after diagnosis, sex, age group and region of residence for Victorians with acute myeloid leukaemia in 2006-2010 and for five-year periods from 1986-1990.

Years after diagnosis	Number of deaths	Survival (%)	95% confidence interval	
1	617	42	(40, 45)	
2	121	32	(29, 34)	
3	46	28	(25, 30)	
4	22	26	(23, 28)	
5	14	24	(22, 27)	
By subgroup	**Number of deaths**	**5-year survival (%)**	**95% confidence interval**	**p-value**
All cases	820	24	(22, 27)	
Sex				
Male	453	23	(20, 27)	0.49
Female	367	25	(22, 29)	
Age at diagnosis				
0-44	67	67	(60, 72)	< 0.01
45-54	64	44	(35, 52)	
55-64	104	34	(27, 41)	
65-74	199	12	(8, 16)	
75+	386	1	(1, 3)	
Region of residence				
Melbourne	562	25	(22, 28)	0.26
Rest of Victoria	258	22	(18, 26)	
Selected periods				
1986-1990	532	10	(8, 12)	0.10/<0.01[1]
1991-1995	577	13	(10, 15)	
1996-2000	551	16	(13, 18)	
2001-2005	719	21	(19, 24)	
2006-2010	820	24	(22, 27)	

1. The first p-value tests for difference in survival for the two most recent periods (i.e. the period from 2001-2005 with the period from 2006-2010). The second p-value tests fro the trend across all periods shown.

Figure 1: Survival by year

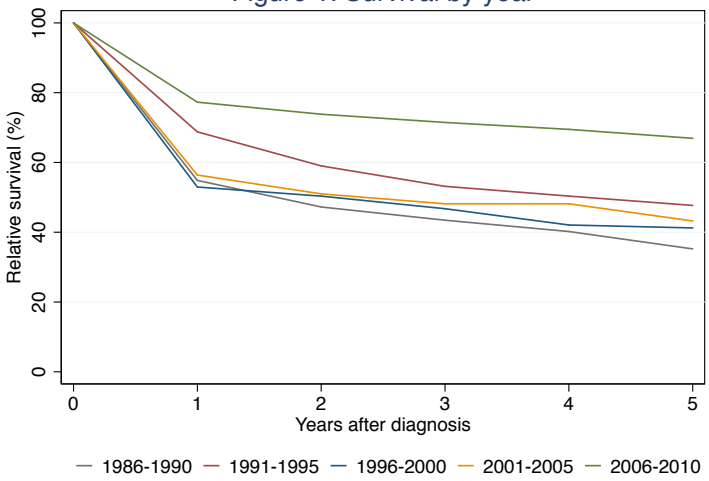


Figure 2: Survival by sex

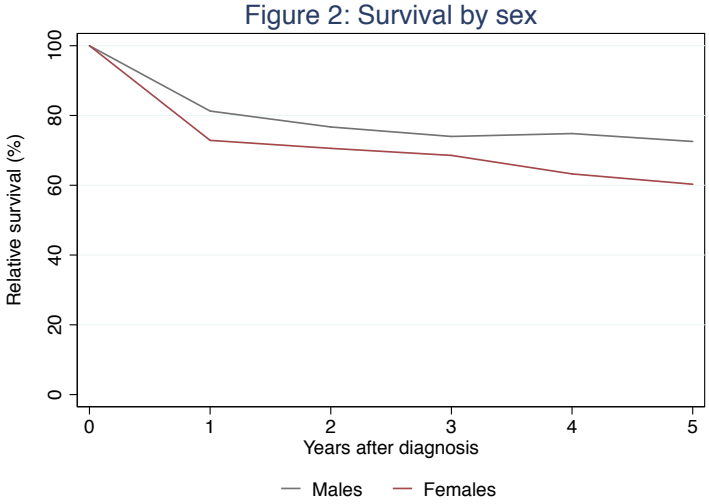
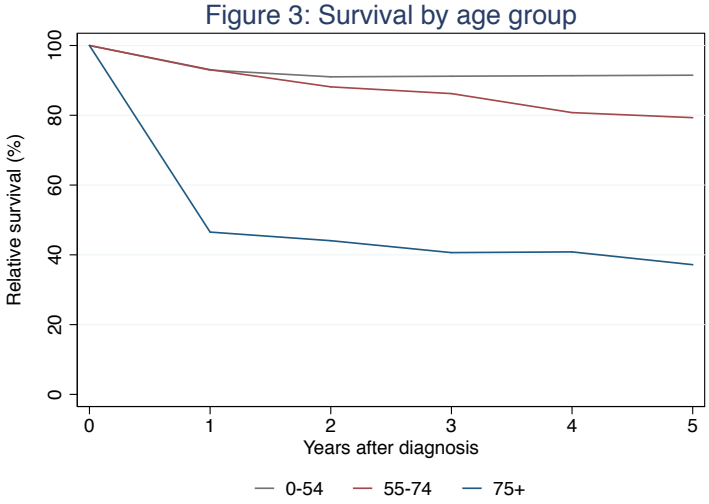


Figure 3: Survival by age group



MYELOID NEOPLASMS: CHRONIC MYELOID LEUKAEMIA

The 5-year survival for people with chronic myeloid leukaemia is 77%.

Sex Survival was similar for men (79%) and women (75%).

Age at diagnosis Age at diagnosis greater than 65 years was associated with poorer survival, with estimates of 90-95% for persons aged under 65 years decreasing to 25% for persons aged over 75 years at diagnosis.

Regional comparisons Survival was similar for residents of Melbourne and the rest of Victoria.

Time trends Survival improved over the 20 year period from 1986-1990 to 2006-2010 from 33% to 77%, and between the two most recent periods, 2001-2005 and 2006-2010 from 60% to 77%.

A clinician's comment "Chronic myeloid leukaemia (CML) is a stunning example of the major benefits delivered in public health from identification of underlying molecular defects causing specific cancers and developing appropriately targeted treatments; in this case Imatinib and subsequent generations of tyrosine-kinase inhibitors. It is now rare for a patient adherent to an appropriate treatment program to die from their CML. A wonderful success story of modern molecular medicine!"

Table 1: Survival by years after diagnosis, sex, age group and region of residence for Victorians with chronic myeloid leukaemia in 2006-2010 and for five-year periods from 1986-1990.

Years after diagnosis	Number of deaths	Survival (%)	95% confidence interval	
1	40	91	(87, 93)	
2	17	87	(83, 90)	
3	19	83	(78, 86)	
4	18	78	(73, 82)	
5	6	77	(72, 81)	
By subgroup	**Number of deaths**	**5-year survival (%)**	**95% confidence interval**	**p-value**
All cases	100	77	(72, 81)	
Sex				
Male	54	79	(72, 84)	0.67
Female	46	75	(67, 81)	
Age at diagnosis				
0-44	6	93	(87, 97)	< 0.01
45-54	6	90	(80, 96)	
55-64	5	95	(85, 99)	
65-74	20	75	(61, 85)	
75+	63	25	(15, 37)	
Region of residence				
Melbourne	65	78	(72, 83)	0.39
Rest of Victoria	35	73	(64, 82)	
Selected periods				
1986-1990	182	33	(27, 40)	<0.01/<0.01[1]
1991-1995	207	31	(26, 36)	
1996-2000	159	45	(39, 51)	
2001-2005	128	60	(53, 66)	
2006-2010	100	77	(72, 81)	

1. The first p-value tests for difference in survival for the two most recent periods (i.e. the period from 2001-2005 with the period from 2006-2010). The second p-value tests fro the trend across all periods shown.

Figure 1: Survival by year

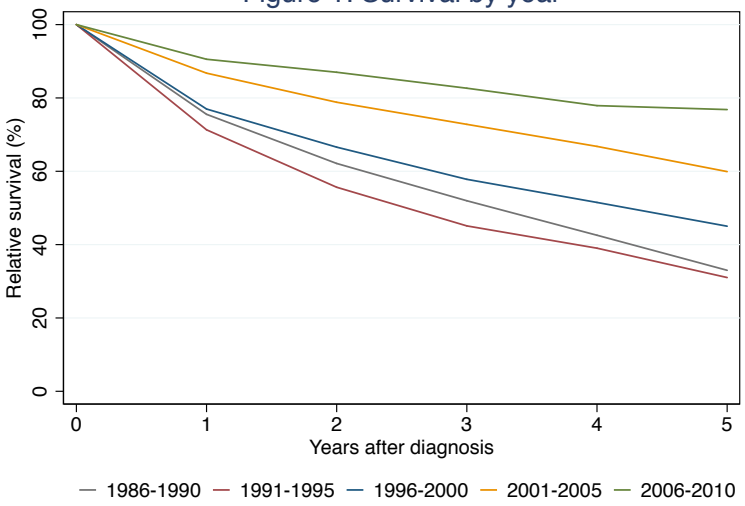


Figure 2: Survival by sex

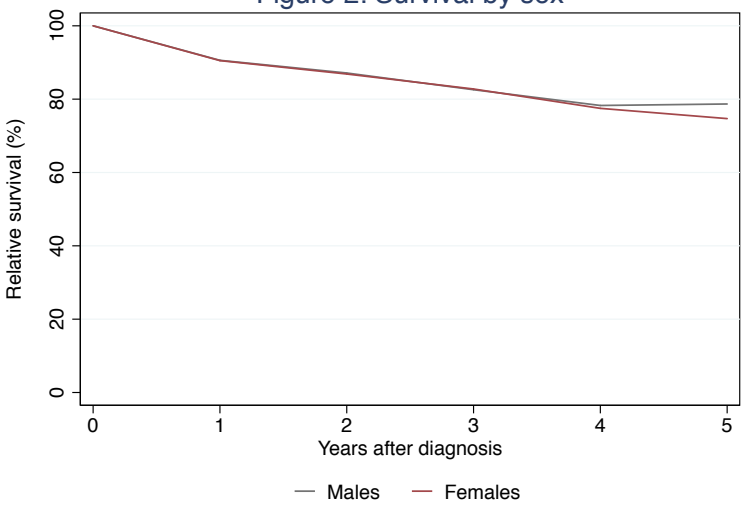
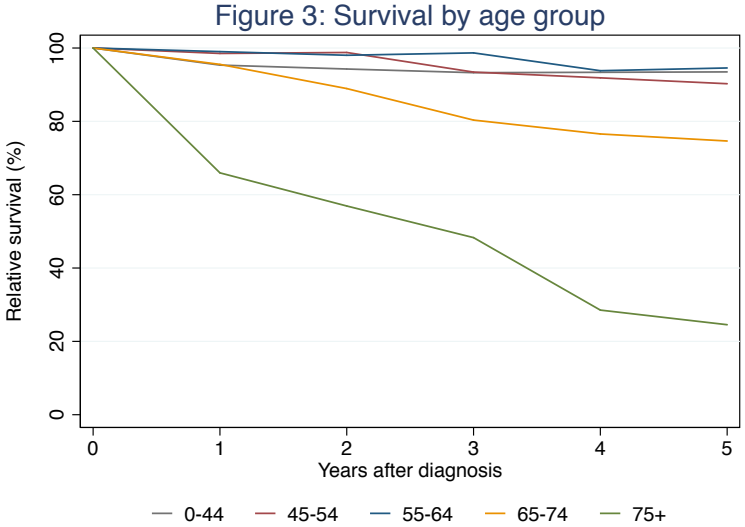


Figure 3: Survival by age group



Appendix I: Topography and morphology codes

Table A1: Details of cancer sites and groups used in this report by ICD-10[2] codes

ICD-10 description	ICD-10	Included in report
ALL MALIGNANT TUMOURS	**C00–C96**	**Yes**
LIP, ORAL CAVITY & PHARYNX (C00–C14)		
Lip	C00	No
Tongue	C01, C02	No
Major salivary glands	C07, C08	Yes
Gum	C03	No
Floor of mouth	C04	No
Other & unspecified parts of mouth	C05, C06	No
Oral cavity	**C01–C06**	**Yes**
Oropharynx	C09, C10	No
Nasopharynx	C11	No
Hypopharynx including pyriform sinus	C12, C13	No
Pharynx	**C09–C13**	**Yes**
Other & unspecified sites of lip, oral cavity & pharynx	C14	No
DIGESTIVE ORGANS (C15–C26)		
Oesophagus	C15	Yes
Stomach	C16	Yes
Small intestine including duodenum	C17	No
Colon and rectum, including rectosigmoid, anal canal and anus	C18-C21	Yes
Liver & intrahepatic bile ducts	C22	Yes
Gallbladder & other biliary tract	C23, C24	Yes
Pancreas	C25	Yes
RESPIRATORY SYSTEM & INTRATHORACIC ORGANS (C30–C39)		
Nose, nasal cavities, middle ear & accessory sinuses	C30, C31	No
Larynx	C32	Yes
Trachea, bronchus & lung	C33, C34	Yes
Thymus, heart, mediastinum & pleura	C37, C38	No
BONES, JOINTS & ARTICULAR CARTILAGE (C40–C41)	C40, C41	No
MELANOMA (C43)	C43	Yes
MESOTHELIAL & SOFT TISSUE (C45–C49)		
Mesothelioma	C45	Yes
Kaposi sarcoma	C46	No
Retroperitoneum & peritoneum	C48	No
Other connective tissue (including peripheral nerves etc)	C47, C49	Yes
BREAST (C50)	BC50	Yes
FEMALE GENITAL ORGANS (C51–C58)		
Cervix uteri	C53	Yes
Body of uterus	C54, C55	Yes
Ovary	C56	Yes
Placenta	C58	No
Vulva & other/unspecified female genital organs	C51, C52, C57	No

Table A1 (continued)

ICD-10 description	ICD-10	Included in report
MALE GENITAL ORGANS (C60–C63)		
Prostate	C61	Yes
Testis	C62	Yes
Penis & other male genital organs	C60, C63	No
URINARY TRACT (C64–C68)		
Kidney, except renal pelvis	C64	Yes
Bladder	C67	Yes
Renal pelvis, ureter, urethra & other/unspecified urinary organs	C65, C66, C68	Yes
EYE, BRAIN & OTHER PARTS OF CENTRAL NERVOUS SYSTEM (C69–C72)		
Eye	C69	No
Meninges	C70	No
Brain	C71	No
Cranial nerves, spinal cord & unspecified CNS	C72	No
Central nervous system (CNS)	**C70–2**	**Yes**
THYROID & OTHER ENDOCRINE GLANDS (C73–C75)		
Thyroid gland	C73	Yes
Other endocrine glands and related structures	C74, C75	No
III–DEFINED & UNKNOWN PRIMARY SITE (C76–C80)		**Yes**
MALIGNANT NEOPLASMS OF LYMPHOID, HAEMATOPOIETIC AND RELATED TISSUE (C81–C96)		

These neoplasms have been grouped in this report according to the classification developed by the Australasian Association of Cancer Registries, in consultation with the Australian Blood Cancer Registry. This classification uses, with some small modifications, the new WHO classification of haematological malignancies[3] which stratifies neoplasms according to their lineage. Detailed mapping of ICDO-3 morphology codes to these groups may be found in Canstat No 51: Haematological malignancies[4] (available to download at http://www.cancervic.org.au/about-our-research/registry-statistics/canstats) - summary mapping is shown in Table A2 on Page 89.

LYMPHOID NEOPLASMS	
Hodgkin lymphoma	Yes
B-cell neoplasms	Yes
T- and NK-cell neoplasms	Yes
Acute lymphoblastic leukaemia	Yes
Non-Hodgkin lymphoma	Yes
Lymphoid neoplasms, NOS	Yes
MYELOID NEOPLASMS	
Acute myeloid leukaemia	Yes
Chronic myeloid leukaemia	Yes
Other chronic myeloproliferative diseases	No
Myelodysplastic syndromes	No
Myelodysplastic/myeloproliferative diseases	No
Myeloid neoplasms, NOS	No
LYMPHOID/MYELOID NEOPLASMS NOS	**No**
OTHER LYMPHOID/HAEMATOPOIETIC NEOPLASMS	**No**

Table A2: Details of morphology groups used in this report by ICDO-3[5] codes

Groups of malignant tumours considered to be histologically 'different' (adapted from JW Berg[6]

These definitions are used unless otherwise specified

Group	Range of ICDO-3 morphology codes
1. Squamous and transitional cell carcinoma	805–808, 812–13
2. Adenocarcinoma	814, 816, 819–22, 826–33, 835–55, 857, 894
3. Other specific carcinoma	803–4, 815, 817–8, 823, 824, 825, 834, 856, 858–67
4. Unspecified carcinoma	801–2
5. Sarcomas and soft tissue tumour	868–71, 880–92, 899, 904, 912–3, 915–25, 937, 954–8
6. Kaposi sarcoma	914
7. Mesothelioma	905
8. Other specified types of cancer	872–9, 893, 895–8, 900–3, 906–11, 926–36, 938–53, 973–5,976
9. Leukaemia	980–94, 995, 996, 998
Lymphoma	959–72
10. No histological confirmation	999, 0, 800

Groups were defined by ICDO-3 morphology codes for selected cancers. Results are presented in the tables only for the major morphology groups for a given cancer (hence deaths in morphology groups shown may not add to total deaths). Listed below are the morphology subgroups, with definitions where these are subsets of groups defined above, for which separate survival estimates are included in the body of the report.

Morphology subgroups used in analyses by cancer site

All cancer – All morphology groups as above

Lung cancer

Small cell carcinoma	8041-8044
Non-small cell carcinoma	All groups 1-4 except 8041-8044
(including separate figures for adenocarcinoma; no histological confirmation)	

Female breast cancer

Ductal carcinoma	8500, 8501, 8503, 8504, 8480, 8201, 8211
Lobular carcinoma	8520
Paget disease	8540–3
Other adenocarcinoma	All group 2 except those morphologies already specified
Other & unspecified carcinoma	Groups 1, 3 and 4
No histological confirmation	Group 11

Cervical cancer

Squamous cell carcinoma, adenocarcinoma, other & unspecified carcinoma as per groups above.

Ovarian cancer

Papillary/serous adenocarcinoma	826, 844–6
Mucinous adenocarcinoma	847–8
Endometrioid adenocarcinoma	838
Clear cell adenocarcinoma	831
Other & unspecified adenocarcinoma	All group 2 except morphologies already specified
Other & unspecified epithelial tumours	Groups 1, 3 and 4
Other histology	Groups 5-11

Testicular cancer

Seminoma	906
Non-seminoma	907–10

Bladder cancer

Transitional cell carcinoma	812
Papillary transitional cell carcinoma	813
Squamous cell carcinoma	805–808
Other & unspecified carcinoma	All groups 2-4

Kidney cancer

Renal cell carcinoma	831
Other adenocarcinoma	All group 2 except 831
Wilms tumour	896
Other and unspecified carcinoma	All of groups 1, 3 and 4

Renal pelvis cancer

Transitional cell carcinoma	812
Other & unspecified carcinoma	All groups 1-4 except 812

Brain & central nervous system tumours

Glioblastoma	9440–2
Astrocytoma	9384, 9400–21, 9430,9424
Other gliomas	9470–3, 9450–60, 9391–4, 9380–3, 9390–4, 9480
No histological confirmation	Group 11

Thyroid cancer

Follicular adenocarcinoma	833, 834
Papillary adenocarcinoma	826, 805
Medullary adenocarcinoma	851
Other & unspecified carcinomas	All groups 1-4 except morphologies already specified

Tumours of unknown primary site

Adenocarcinoma, squamous and transitional cell carcinoma, Other carcinoma, Unspecified carcinoma as per groups 1-4

Haematopoietic malignancies:

Note: Only the AACR reporting categories included in this report are shown, with corresponding of ICDO-3 codes.

See Thursfield V, Prince M and Giles G. Haematological malignances: neoplastic diseases of haematopoietic and lymphoid tissue. Canstat No 51. Cancer Council Victoria, Melbourne 2011

Lymphoid neoplasms	9650-9667
Hodgkin lymphomas	
Mature B-cell neoplasms	9596, 9670-9699, 9731-9734, 9761, 9764, 9823, 9826, 9833, 9940
Mature T- and NK-cell neoplasms	9700-9719, 9827, 9831, 9834, 9948
Acute lymphoblastic leukaemia	9727-9729, 9835-9837, 9930
Non-Hodgkin lymphoma	9591, 9820, 9832
Lymphoid neoplasms, unspecified	9590

Myeloid neoplasms

Acute myeloid leukaemia	9805, 9840, 9861, 9866-9867, 9870-9874, 9891-9920, 9931
Chronic myeloid leukaemia	9863, 9875

Appendix II: Data, definitions and methods

Data

The Victorian Cancer Registry (VCR) became population based in 1982. Its detailed operations have been described elsewhere[7]. Briefly, notification of cancer in Victoria is a legal requirement of all hospitals and pathology laboratories, and all death certificates are notified to it by an administrative arrangement. The VCR has a policy of recording all primary cancers (i.e. those that are neither an extension, nor a recurrence, nor a metastasis of a preexisting tumour), and all suspected further primaries are rigorously followed up with the hospital notifiers and with relevant clinicians and pathologists. If there is any doubt as to its validity, the notification is not coded as a primary cancer.

The study population for this report is all persons with a first diagnosis of cancer between 1986 and 2010. This cohort was followed until the end of 2010. Follow-up was extended beyond the geographic boundaries of Victoria by matching against the National Death Index to identify deaths for persons who may have migrated elsewhere in Australia.

Definitions

Cancer incidence is defined as the occurrence of new cancers in a defined population during a specified time period. Cancer incidence reports on the first primary tumour of a particular site according to the rules of the International Agency for Research on Cancer and the International Association of Cancer Registries. Incidence reflects the number of primary tumours rather than the number of individuals with cancer and a person may appear more than once on the incidence file in the presence of multiple primary tumours. However, the proportion is small, such that the effect of non-independence between patients has a negligible effect on survival estimates. Further, tumours were examined separately so it is even less likely that a person will appear twice for the same tumour. All usual Victorian residents who presented with one or more primary tumours between 1986 and 2010 were included in this study.

Mortality includes deaths from all causes for Victorians with a primary tumour diagnosed from 1986 to 2010. All persons in the incidence file were matched to death records from the Victorian Registrar of Births, Deaths and Marriages and also to the National Death Index to identify deaths occurring outside Victoria. People still alive on 31 December 2010 were censored at this date. People notified to the Victorian Cancer Registry by death certificate only were excluded from all analyses. People notified by death certificate notification were included in analyses.

Date of diagnosis is defined as the date of definitive diagnosis of invasive disease from a pathology report, where available. The date of clinical diagnosis or admission to hospital is used for cancers that were not histologically confirmed.

Survival time was calculated from the date of diagnosis to the date of death or end of follow-up on 31 December 2010. People whose death was the same as their date of diagnosis were excluded from analyses. Most of these cases were death certificate only notifications.

Description of groups used in this report

Age at diagnosis – the following age groups were used for the majority of cancer sites: <45, 45–54, 55–64, 65–74, 75+. Where the group size was too small (<100) or where the distribution of cases by age was different from that of most tumours (e.g. in tumours common in young persons such as acute lymphoblastic leukaemia) alternative age breakdowns were chosen.

Selected years – survival estimates for the periods 1986-1990, 1991-1995, 1996-2000, 2001-2005 and 2006-2010 are given. All other estimates relate to all Victorians with a particular cancer in 2006-2010, i.e. prevalent cases in 2006-2010, to provide survival estimates that reflect the most recent patterns.

Morphology – for selected tumour sites, subgroups were obtained by grouping cases according to tumour morphology. See Appendix I for a detailed description of groups according to ICDO-3 morphology code. Patients who did not fall into one of the tabulated categories of morphology were not included when estimating survival by tumour morphology i.e. the groups are not exhaustive and some cases have been omitted from the tables.

Subsite – for some sites, subsites were created according to the 3rd or 4th digit of the ICD-10 topography code. See Appendix I for details. Cancers which did not fall into one of the tabulated categories of subsite were not included when estimating survival by subsite.

Geographical regions – survival estimates are presented in this report for Victoria by two sets of geographical regions as defined below.

Integrated Cancer Services (ICS) regions – The Department of Human Services' Cancer Services Framework for Victoria divides the state into eight regions for the provision of cancer services. These Integrated Cancer Services (ICS) regions include three metropolitan regions – Southern, Western & Central and Northern-Eastern Metropolitan Integrated Cancer Services (MICS) regions and five rural regions – Barwon, Grampians, Loddon-Mallee, Hume and Gippsland Rural Integrated Cancer Services (RICS) regions. Estimates of survival are presented for these regions in the tables for the leading incident cancers.

Metropolitan Melbourne, rest of Victoria – "metropolitan" is defined as the three metropolitan ICS regions and includes the major urban area of Victoria comprising about three-quarters of the state's total population. The "rest of Victoria" includes the five regional ICS regions.

Survival

Relative survival is a measure of net survival that is usually interpreted as the proportion of patients who would have survived for a certain period (usually five years for cancer) if their cancer was the only cause of death in the patient population. It is defined as the ratio of observed survivors in a cohort of cancer patients to the proportion of expected survivors in a comparable group of cancer-free individuals.

Population life tables stratified by age, sex and calendar year are generally used to calculate expected survival. Unlike cause-specific survival, which depends on accurate coding of cause of death, survival measures the excess mortality experienced by cancer patients irrespective of whether their deaths are "attributed" to their cancers or not. It does require that the excess mortality is due to the cancer, and not to some other factor (e.g. smoking) that may be related to the onset of cancer and to excess mortality from other causes.

Cancer registries have traditionally used a method called complete survival to calculate survival. The method entails calculating survival for patients diagnosed in a particular calendar period. This was the method used in our 2003 report, which focused on patients diagnosed with cancer from 1990 to 1997 and followed until the end of 1999. The disadvantage of this method is that the estimates of survival are not up-to-date. For example, the survival one year after diagnosis was based upon data from all patients diagnosed between 1990 and 1997. In 1996, Brenner and Gefeller[8] introduced a new method of calculating survival, which they called "period survival" and this method was used in our 2007 survival publication[1]. Period survival is based upon the survival experience of patients in a specified calendar period and is more contemporary than complete survival. For this monograph, we have used period survival.

The primary focus of these analyses is to provide estimates of patient survival in 2010, which are based on the survival experience for the period 2005-2009. Estimates of five-year survival are also provided for the periods 1986-1990, 1991-1995, 1996-2000, 2001-2005 and 2006-2010.

All statistical analyses were perfomed using Stata11.2[9]. Period relative survival was first calculated separately for each calendar year in the specified calendar period using Stata code written by Paul Dickman[10]. For this analysis, the expected numbers of deaths were derived from age-, sex- and calendar period-specific Victorian life tables according to the Ederer method[11].

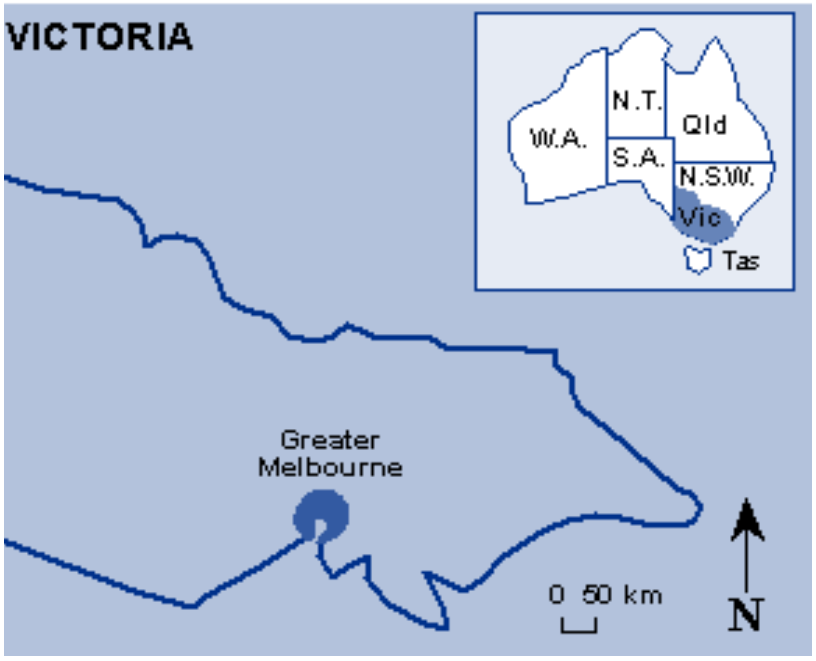
Ad hoc requests for additional analyses

This reports includes survival analyses for the most common cancers in Victoria and some of their major morphological subsets. The authors would be happy to provide additional ad hoc analyses on request to clinicians or researchers requiring survival for less common cancers or additional subgroups by tumour subsite or morphology.

Appendix III: Geography & demography of Victoria

Location

Victoria is illustrated in the map to the right. It lies between latitude 35°S and 39°S and longitude 141°E and 150°E. It is bounded to the north by New South Wales (NSW) and to the west by South Australia.



Area

Victoria has a land area of 227,600 km2. It is slightly smaller than Great Britain and is the smallest of the mainland states of Australia with just under 3% of the total area.

Relief and physical geography

Most of the state is below 200m in altitude but a hilly backbone extends east-west across the state. This belt of high country separates the riverine plains of the Murray and the sand plains of the Mallee and Wimmera to the north from the plains and uplands of the coastal area to the south. The highest point is Mt. Bogong with a height of 1,986 m. The eastern uplands are heavily forested and receive more rainfall than the west. The western uplands are lower in relief and are a mixture of woodlands and cleared cropland.

Geology

Victoria has a complex geology and a rich variety of minerals. It has large reserves of oil, natural gas and brown coal. The gold rushes of the 1850s played a role in the development of the state and gold is still being mined, as are copper, zinc and silver.

Climate

The south of the state receives more rain than the north, because of the uplands running east–west and the prevailing south-east to south-west winds, The moderating effect of the sea (no point in Victoria is more than 380 kms from the ocean) means that snow is rarely seen below 600 m and there are no permanent snowfields. Summer temperatures, especially when air is advected from the Australian land mass to the north, may exceed 35°C.

Population numbers

The estimated population in 2010 comprised 5,539,940 persons, making Victoria the second most populous state of Australia, after New South Wales. One in four Australians lives in Victoria.

The Aboriginal population was 30,141 (0.6% of Victorian total and 7% of national indigenous population) at the 2006 census.

Population distribution

Almost three-quarters of the population live in the Melbourne Metropolitan Area. Most of the remainder live in small provincial cities with 0.1% of Victorians living in remote areas. The average Victorian population density is 22 persons per km^2 (Australia 2.5 persons per km^2) ranging from less than 2 in the Wimmera to 6,000 per km^2 in central Melbourne.

Age and sex

The Victorian age-sex distribution is shown in the population pyramid (page 93). Although the shape of its pyramid has been modified by its immigrant history, Victoria has the type of population distribution expected in a country of late demographic transition. With a declining birth rate, a steadily ageing population can be expected and the pyramid will become increasingly rectangular as more people survive to older ages and the younger strata are not replaced.

Ethnicity

At the 2006 census, 26% of the population was described as overseas born. Of these 1,173,206

persons, 30% were from Asia (Vietnam 5%, China 5%, India 5%, Sri Lanka 3%, Malaysia 3%), 21% were from Southern Europe (Italy 7%, Greece 5%), 18% from Great Britain, 10% from the rest of Europe and former USSR, 6% from the Middle East and smaller numbers from North and South America, Africa and Oceania.

Vital statistics

The birth rate has been steadily declining since the early 1970s. In 2007 the Victorian crude birth rate was 13.0 per 1,000 population.

Life expectancy at birth was, in 2009, 79.6 years for males and 83.9 for females. Since 1981 this has increased by 8 and 5 years in males and females respectively.

There were 35,640 deaths registered in 2009 with male deaths slightly outnumbering female (18,065 and 17,575 respectively).

Cancers accounted for 29%, ischaemic heart disease for 16%, cerebrovascular disease 8%, chronic lower respiratory disease 4%, diabetes 23%, suicide 1% and transport accidents 1%

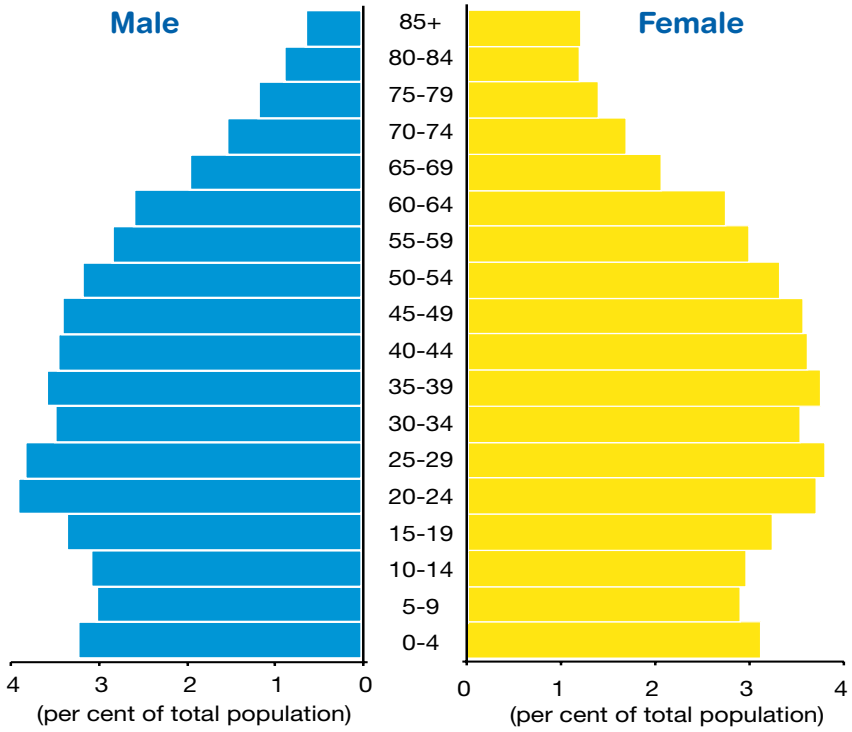
The crude death rate was 6.5 per 1,000. The masculinity of deaths was 102 males per 100 females.

Estimated resident population, Victoria 2010

Age	Males	Females	Persons
0-4	180,293	171,482	351,775
5-9	168,363	159,637	328,000
10-14	172,405	163,190	335,595
15-19	187,437	177,820	365,257
20-24	218,977	203,474	422,451
25-29	213,917	208,888	422,805
30-34	195,500	194,485	389,985
35-39	200,694	206,500	407,194
40-44	193,766	198,225	391,991
45-49	190,899	195,933	386,832
50-54	177,509	182,669	360,178
55-59	158,373	164,531	322,904
60-64	145,031	150,536	295,567
65-69	109,052	113,360	222,412
70-74	85,362	93,293	178,655
75-79	65,508	76,627	142,135
80-84	48,896	65,587	114,483
85+	35,130	66,591	101,721
Total	2,747,112	2,792,828	5,539,940

Source: Australian Bureau of Statistics. Population by age and sex: Australian states and territories. (Cat. No. 3201.0)

Population pyramid, Victoria 2010



Appendix IV: Cancer incidence and mortality in Victoria 2010

	Incidence				Mortality			
	Male		Female		Male		Female	
	Cases	Rate	Cases	Rate	Deaths	Rate	Deaths	Rate
All cancer	**15,913**	**366.4**	**12,450**	**268.7**	**5,999**	**117.7**	**4,674**	**79.1**
Oral cavity	161	4.0	109	2.3	51	1.1	42	0.7
Salivary glands	44	1.1	24	0.6	10	0.2	6	0.1
Pharynx	107	2.9	35	0.8	44	1.0	13	0.2
Oesophagus	243	5.3	118	2.0	187	4	81	1.2
Stomach	329	7.1	189	3.5	245	5.1	122	2
Colorectum	2,075	45.8	1,624	30.0	734	14.4	596	8.9
Liver	269	6.1	82	1.6	184	4.1	75	1.4
Gallbladder	81	1.6	99	1.6	66	1.3	87	1.3
Pancreas	339	7.3	342	5.8	308	6.4	312	5.1
Larynx	132	2.9	24	0.5	51	1.1	5	0
Lung	1,385	28.7	955	18.5	1,131	21.9	756	13.4
Melanoma	1,300	31.0	956	22.2	206	4.4	91	1.7
Mesothelioma	115	2.3	27	0.5	125	2.3	30	0.5
Connective Tissue	112	3.2	66	1.7	40	1	32	0.7
Breast	38	0.9	3,499	83.4	8	0.2	763	14.5
Cervix			179	5.0			58	1.3
Uterus			596	13.4			84	1.5
Ovary			339	7.3			229	4.2
Prostate	4,938	115.4			840	13.3		
Testis	187	6.2			3	0.1		
Kidney	416	10.1	260	5.8	130	2.7	78	1.2
Renal pelvis	62	1.3	36	0.6	31	0.6	16	0.2
Bladder	510	9.8	163	2.9	198	3.5	65	0.8
Central nervous system	302	8.1	210	5.2	225	5.5	154	3.4
Thyroid	113	3.0	343	9.5	11	0.3	11	0.2
Unknown primary	356	7.1	344	5.6	230	4.4	267	3.7
Hodgkin lymphoma	81	2.5	60	2.0	14	0.4	14	0.3
Mature B-cell neoplasms	925	21.3	694	13.9	356	6.8	474	7.0
Mature T- and NK-cell neoplasms	59	1.4	38	0.9	25	0.5	22	0.3
Acute lymphoblastic leukaemia	67	3.2	34	1.9	20	0.8	14	0.5
Non-Hodgkin lymphoma, NOS	52	1.3	55	1.2	20	0.4	30	0.3
Lymphoid neoplasms, NOS	36	0.8	28	0.5	11	0.2	16	0.2
Acute myeloid leukaemia	118	3.0	126	2.8	134	2.8	208	3.0
Chronic myeloid leukaemia	56	1.5	48	1.0	12	0.2	16	0.1
Other chronic myeloproliferative	100	2.3	78	1.7	13	0.2	18	0.3
Myelodysplastic syndromes	221	3.8	146	2.1	35	0.5	48	0.5
Myelodysplastic/myeloproliferative	45	0.9	35	0.6	15	0.2	24	0.2

Rate=Age-standardised rate per 100,000 persons (standardised to World Standard Population)

Source: Thursfield V, Farrugia H. Cancer in Victoria: Statistics and trends 2010. Cancer Council Victoria, Melbourne 2011

Appendix V:
Victorian mortality, 2010

Deaths by age group and sex

	All deaths			Cancer deaths		
Age group	Male	Female	Total	Male	Female	Total
0-4	156	122	278	5	6	11
5-9	27	14	41	9	7	16
10-14	21	8	29	4	2	6
15-19	88	33	121	9	5	14
20-24	129	46	175	6	8	14
25-29	132	61	193	6	9	15
30-34	153	69	222	16	11	27
35-39	204	124	328	26	52	78
40-44	269	137	406	57	65	122
45-49	416	258	674	131	131	262
50-54	548	341	889	212	217	429
55-59	773	484	1,257	353	297	650
60-64	1089	671	1,760	547	422	969
65-69	1286	758	2,044	641	412	1,053
70-74	1826	1179	3,005	855	558	1,413
75-79	2375	1753	4,128	926	634	1,560
80-84	3280	2938	6,218	1,097	789	1,886
85+	5163	8692	13,855	1,099	1,049	2,148
Total	**17,935**	**17,688**	**35,623**	**5,999**	**4,674**	**10,673**

Deaths rates (per 100,000 persons) by age group and sex

	All deaths			Cancer deaths		
Age group	Male	Female	Total	Male	Female	Total
0-4	86.5	71.1	79.0	2.8	3.5	3.1
5-9	16.0	8.8	12.5	5.4	4.4	4.9
10-14	12.2	4.9	8.6	2.3	1.2	1.8
15-19	46.9	18.6	33.1	4.8	2.8	3.8
20-24	58.9	22.6	41.4	2.7	3.9	3.3
25-29	61.7	29.2	45.6	2.8	4.3	3.6
30-34	78.3	35.5	56.9	8.2	5.7	6.9
35-39	101.6	60.0	80.6	13.0	25.2	19.2
40-44	138.8	69.1	103.6	29.4	32.8	31.1
45-49	217.9	131.7	174.2	68.6	66.9	67.7
50-54	308.7	186.7	246.8	119.4	118.8	119.1
55-59	488.1	294.2	389.3	222.9	180.5	201.3
60-64	750.9	445.7	595.5	377.2	280.3	327.8
65-69	1179.3	668.7	919.0	587.8	363.4	473.5
70-74	2139.1	1263.8	1682.0	1001.6	598.1	790.9
75-79	3625.5	2287.7	2904.3	1413.6	827.4	1097.6
80-84	6708.1	4479.5	5431.4	2243.5	1203.0	1647.4
85+	14696.8	13052.8	13620.6	3128.4	1575.3	2111.7
Crude rate	652.9	633.3	643.0	218.4	167.4	192.7
ASR	**345.59** (341-351)	**228.3** (225-232)	**283.6** (281-287)	**117.7** (115-121)	**79.1** (77-81)	**96.3** (95-98)

ASR=Age-standardised rate per 100,000 persons (World Standard Population) with 95% confidence interval

Appendix VI:
Life tables for Victoria 2008-2010

	Males				Females			
Age	lx	qx	Lx	ex	lx	qx	Lx	ex
0	100,000	0.00387	99,653	80.0	100,000	0.00319	99,715	84.3
1	99,613	0.00037	99,593	79.3	99,681	0.00025	99,667	83.5
2	99,576	0.00018	99,565	78.3	99,657	0.00016	99,648	82.6
3	99,557	0.00014	99,550	77.3	99,640	0.00013	99,634	81.6
4	99,543	0.00012	99,537	76.3	99,628	0.00011	99,622	80.6
5	99,532	0.00011	99,526	75.3	99,617	0.00009	99,613	79.6
6	99,520	0.00011	99,515	74.3	99,608	0.00008	99,604	78.6
7	99,510	0.00010	99,505	73.4	99,600	0.00007	99,596	77.6
8	99,500	0.00010	99,494	72.4	99,593	0.00007	99,589	76.6
9	99,489	0.00010	99,484	71.4	99,586	0.00007	99,583	75.6
10	99,479	0.00010	99,475	70.4	99,579	0.00007	99,576	74.6
11	99,470	0.00010	99,465	69.4	99,573	0.00007	99,569	73.6
12	99,459	0.00011	99,454	68.4	99,566	0.00007	99,562	72.6
13	99,448	0.00013	99,442	67.4	99,558	0.00008	99,554	71.6
14	99,435	0.00018	99,427	66.4	99,550	0.00010	99,545	70.6
15	99,417	0.00025	99,406	65.4	99,539	0.00014	99,533	69.7
16	99,393	0.00035	99,377	64.4	99,526	0.00017	99,518	68.7
17	99,359	0.00045	99,337	63.5	99,509	0.00020	99,499	67.7
18	99,314	0.00053	99,289	62.5	99,488	0.00022	99,477	66.7
19	99,262	0.00057	99,234	61.5	99,466	0.00023	99,455	65.7
20	99,205	0.00059	99,176	60.6	99,443	0.00023	99,432	64.7
21	99,146	0.00060	99,116	59.6	99,420	0.00023	99,409	63.7
22	99,087	0.00060	99,057	58.6	99,397	0.00023	99,386	62.7
23	99,027	0.00062	98,997	57.7	99,374	0.00024	99,362	61.8
24	98,966	0.00064	98,934	56.7	99,350	0.00026	99,338	60.8
25	98,903	0.00067	98,870	55.7	99,325	0.00028	99,311	59.8
26	98,837	0.00069	98,803	54.8	99,297	0.00029	99,283	58.8
27	98,769	0.00071	98,733	53.8	99,268	0.00030	99,253	57.8
28	98,698	0.00074	98,662	52.8	99,238	0.00032	99,223	56.8
29	98,625	0.00077	98,587	51.9	99,207	0.00034	99,190	55.9
30	98,548	0.00081	98,509	50.9	99,173	0.00036	99,156	54.9
31	98,469	0.00085	98,427	50.0	99,138	0.00038	99,120	53.9
32	98,385	0.00089	98,342	49.0	99,101	0.00040	99,081	52.9
33	98,298	0.00092	98,253	48.0	99,061	0.00043	99,039	51.9
34	98,207	0.00096	98,160	47.1	99,018	0.00047	98,995	51.0
35	98,113	0.00100	98,064	46.1	98,972	0.00050	98,947	50.0
36	98,015	0.00104	97,964	45.2	98,922	0.00054	98,896	49.0
37	97,913	0.00109	97,860	44.2	98,868	0.00059	98,840	48.0
38	97,807	0.00114	97,751	43.3	98,810	0.00064	98,779	47.1
39	97,695	0.00120	97,637	42.3	98,747	0.00070	98,712	46.1
40	97,578	0.00127	97,516	41.4	98,677	0.00076	98,640	45.1
41	97,454	0.00135	97,389	40.4	98,602	0.00083	98,562	44.2
42	97,322	0.00145	97,253	39.5	98,520	0.00091	98,476	43.2
43	97,181	0.00156	97,107	38.5	98,430	0.00099	98,382	42.2
44	97,030	0.00168	96,950	37.6	98,332	0.00109	98,280	41.3
45	96,867	0.00183	96,780	36.7	98,226	0.00118	98,168	40.3
46	96,690	0.00199	96,596	35.7	98,109	0.00129	98,047	39.4
47	96,498	0.00217	96,395	34.8	97,983	0.00140	97,915	38.4
48	96,289	0.00236	96,177	33.9	97,845	0.00152	97,772	37.5
49	96,061	0.00258	95,939	33.0	97,696	0.00165	97,617	36.5

lx = number of persons at exact age x. **qx** = proportion dying between exact age x and exact age x+1.
Lx = number of person years lived within the age interval x to x+1. **ex** = expectation of life at exact age x.

Cancer Survival Victoria
The Victorian Cancer Registry, Cancer Council Victoria, 2012

Source: Australian Bureau of Statistics Catalogue number 3302.2.55.001. Life tables Victoria 2008-2010

	Males				Females			
Age	lx	qx	Lx	ex	lx	qx	Lx	ex
50	95,813	0.00281	95,680	32.0	97,535	0.00178	97,449	35.6
51	95,544	0.00307	95,399	31.1	97,361	0.00193	97,269	34.7
52	95,251	0.00333	95,094	30.2	97,174	0.00207	97,074	33.7
53	94,933	0.00362	94,764	29.3	96,972	0.00223	96,865	32.8
54	94,589	0.00393	94,406	28.4	96,756	0.00239	96,641	31.9
55	94,218	0.00425	94,020	27.5	96,524	0.00257	96,402	30.9
56	93,818	0.00459	93,605	26.6	96,276	0.00276	96,145	30.0
57	93,387	0.00495	93,159	25.8	96,010	0.00298	95,869	29.1
58	92,925	0.00537	92,679	24.9	95,724	0.00322	95,571	28.2
59	92,426	0.00586	92,159	24.0	95,415	0.00350	95,250	27.3
60	91,884	0.00641	91,594	23.2	95,081	0.00381	94,902	26.4
61	91,295	0.00704	90,978	22.3	94,718	0.00417	94,524	25.5
62	90,653	0.00774	90,307	21.5	94,323	0.00457	94,111	24.6
63	89,951	0.00855	89,572	20.6	93,892	0.00503	93,659	23.7
64	89,182	0.00946	88,767	19.8	93,420	0.00555	93,164	22.8
65	88,339	0.01049	87,883	19.0	92,901	0.00612	92,621	21.9
66	87,412	0.01166	86,911	18.2	92,332	0.00677	92,025	21.1
67	86,393	0.01297	85,842	17.4	91,707	0.00749	91,369	20.2
68	85,272	0.01445	84,666	16.6	91,020	0.00829	90,649	19.3
69	84,040	0.01610	83,374	15.8	90,266	0.00917	89,859	18.5
70	82,687	0.01793	81,957	15.1	89,438	0.01022	88,990	17.7
71	81,205	0.01996	80,406	14.4	88,524	0.01162	88,020	16.8
72	79,584	0.02220	78,713	13.6	87,496	0.01302	86,935	16.0
73	77,817	0.02466	76,871	12.9	86,356	0.01445	85,742	15.2
74	75,898	0.02742	74,872	12.3	85,109	0.01605	84,436	14.5
75	73,817	0.03054	72,705	11.6	83,743	0.01797	83,003	13.7
76	71,563	0.03409	70,359	10.9	82,238	0.02029	81,418	12.9
77	69,123	0.03814	67,822	10.3	80,569	0.02307	79,657	12.2
78	66,486	0.04276	65,082	9.7	78,710	0.02637	77,692	11.5
79	63,643	0.04801	62,133	9.1	76,635	0.03024	75,497	10.8
80	60,588	0.05395	58,971	8.5	74,317	0.03475	73,049	10.1
81	57,319	0.06064	55,598	8.0	71,735	0.03995	70,326	9.4
82	53,843	0.06813	52,024	7.5	68,869	0.04588	67,314	8.8
83	50,175	0.07647	48,269	7.0	65,709	0.05261	64,005	8.2
84	46,338	0.08570	44,362	6.5	62,252	0.06019	60,402	7.6
85	42,367	0.09586	40,342	6.1	58,505	0.06873	56,517	7.1
86	38,306	0.10668	36,261	5.7	54,485	0.07836	52,369	6.5
87	34,220	0.11723	32,205	5.3	50,215	0.08919	47,991	6.1
88	30,208	0.12839	28,256	4.9	45,736	0.10133	43,429	5.6
89	26,330	0.14145	24,454	4.6	41,102	0.11486	38,745	5.2
90	22,605	0.15760	20,811	4.3	36,381	0.12986	34,015	4.8
91	19,043	0.17731	17,332	4.0	31,657	0.14637	29,328	4.4
92	15,666	0.19351	14,121	3.7	27,023	0.16443	24,781	4.1
93	12,635	0.21252	11,261	3.5	22,579	0.18387	20,475	3.8
94	9,949	0.22945	8,773	3.3	18,428	0.20374	16,514	3.6
95	7,667	0.24308	6,700	3.2	14,673	0.22306	12,994	3.3
96	5,803	0.25216	5,041	3.1	11,400	0.24093	9,981	3.2
97	4,340	0.26409	3,742	2.9	8,654	0.25361	7,513	3.0
98	3,194	0.27429	2,735	2.8	6,459	0.26644	5,562	2.9
99	2,318	0.28407	1,973	2.7	4,738	0.27926	4,046	2.8
100	1,659	0.29812	4,317	2.6	3,415	0.29209	9,023	2.6

Note: At age 100, L100+ is shown.

Appendix VII: References

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