



Government of **Western Australia**
Department of **Health**

Cancer incidence and mortality in Western Australia, 2010

A report of the Western Australian Cancer Registry



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**Data Integrity Directorate, Performance Activity and Quality Division
Department of Health
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Summary - Cancer incidence and mortality in Western Australia, 2010

The Western Australian Cancer Registry has provided population-based cancer data since 1982 for use in the planning of health care services and the support of cancer-related research, at local, national and international levels. Most of this report is concerned with invasive tumours, or “cancers”, using standardised reporting practices as used in other cancer registries in Australia and overseas. This report deals primarily with cancer incidence and cancer-related mortality in Western Australian residents, who comprise approximately 10% of the Australian population.

There were 10942 new cases of cancer recorded in Western Australians in 2010, 6283 (57%) occurring in males and 4659 in females. Age-standardised incidence rates were 365 per 100,000 males (slightly decreased since 2009), and 269 per 100,000 females (slightly increased). The estimated cumulative risk of cancer to age 75 years was 1 in 3 for males, and 1 in 4 for females.

The most common cancers in males in 2010 were prostate and colorectal cancers, melanoma and lung cancer, while breast cancer predominated among females, followed by colorectal cancer, melanoma and lung cancer, the usual pattern in recent years.

Trend assessment suggests a slowing of the rise in incidence of prostate cancer, little change in colorectal cancer or breast cancer, ongoing slight reductions in melanoma (both males and females) but a continuing increase in rates of lung cancer amongst women. Thyroid cancer incidence has doubled in both males and females since 2001.

Among Western Australian residents, there were 3800 deaths due to cancer in 2010, 2260 in males and 1540 in females. All-cancers mortality rates for 2010 were 117 deaths per 100,000 males (similar to 2008 and 2009) and 72 per 100,000 females (decreased from 84 in 2009). As usual in recent years, the most common causes of cancer-related death in males were lung, colorectal and prostate cancers, while lung, breast and colorectal cancers were the most common in females.

There were 58 children under the age of 15 years diagnosed with cancer in 2010 (AAR 15 per 100,000 in males and 12 in females), as well as a small number with other cancer-like conditions. The case numbers were slightly smaller than in 2009 but cancer in this age range is uncommon and the annual variation in numbers and types is considerable.

Melanoma of the skin was - as in most years since 1982 - the most common cancer in males in the 15-39 years age range, however since 2009, melanoma has been less common than breast cancer in females in the same age group. In persons over the age of 40 years, prostate and breast cancers, melanoma, colorectal and lung cancers, remain the most common incident cancers.

Based on 2010 data, one in 7 men would be expected to have a diagnosis of prostate cancer before the age of 75, and one in 10 women could be expected to develop breast cancer. One in 110 men could be expected to die from prostate cancer before age 75, and one in 71 women to die from breast cancer. However, as in recent years, lung cancer was the most common cause of cancer-related death for both males and females, killing one in 36 males and one in 61 females before age 75.

Acknowledgments

This report is based on data recorded and maintained by the staff of the Western Australian Cancer Registry, whose dedication and attention to detail are much appreciated.

We also wish to acknowledge the invaluable contribution of the Western Australian pathologists, haematologists and radiation oncologists who supply the vast majority of the Registry's primary notifications, and the health professionals and organisations who supply additional information in response to our enquiries.

The cooperation of other Australian Cancer Registries regarding procedures, coding, duplication and demarcation issues, and of staff of the Australian Cancer Database at AIHW, Canberra, is acknowledged as playing a vital part in ensuring data quality and comparability.

The Registry relies on a variety of supporting services in order to produce reports on cancer; these include population figures and projections, mapping, hospitalisation data, legal advice, computing services and general support and encouragement

1 Overview and Methods

1.1 This Report

Overview

This is the latest in this Registry's series of annual reports, and is devoted largely to Western Australian cancer incidence and mortality for 2010. The new report contains less commentary and interpretation, and less technical information and coverage of "special topics", than in the past, in the interest of producing a more timely publication. It is anticipated that more detailed discussion of particular issues will continue to be made available in other reports as the opportunity arises.

The **Western Australian Cancer Registry (WACR)** is a population-based cancer registry established in 1981, operating within the Department of Health (Western Australia). The main information sources are reports from pathologists, haematologists and radiation oncologists, supplemented by death registrations, hospital statistical discharge data systems, and information from hospital files and responses to enquiries directed at treating medical practitioners.

The WACR has acted with the delegated authority of the Executive Director of Public Health with respect to the Health (Notification of Cancer) Regulations 1981, until the commencement of the new Health (Western Australian Cancer Register) Regulations 2011 on 10 June 2011. These Regulations require the notification of *in situ* neoplasms and all non-melanoma skin cancers other than basal cell and squamous cell carcinomas, and all other invasive malignancies and benign central nervous system (CNS) tumours, as well as a range of other neoplasms (see Appendix 2E). The new Regulations and a summary of changes can be seen at <http://www.health.wa.gov.au/wacr/home/regulations.cfm>

1.2 General structure; how to find information

The major sections are based on cancers diagnosed, and deaths due to cancer, in 2010.

- Data for most common cancers are presented under headings based on incidence, mortality and age,
- Data for selected geographic areas are presented in Appendices 3D and 3E.
- Detailed data for all cancers for 2010 are found in the tables of Appendices 3A and 3B. The layout of those tables follows the coding system summarised in material available at www.health.wa.gov.au/wacr/home .

This report will be available at http://www.health.wa.gov.au/wacr/statistics/stats_full.cfm

1.3 Interpretation

Western Australia is particularly polarised into metropolitan and rural areas, with huge differences in population density and there are likely to be some statistical biases due to the difficulties of transport and the location of services within the State. Throughout this report, readers should be aware that assessing the relevance of changes in cancer incidence and mortality is complex and depends on the underlying population sizes and their age structures. Caution is required in assessing changes on the basis of single rate comparisons.

The Cancer Registry database is continually updated in the light of the most recent available information. Accordingly, numbers in this report for earlier years may vary slightly from those in previous publications, as some Western Australian cases are found to have been diagnosed elsewhere, or in earlier years, and case-counts necessarily rise and fall as new

information arrives. Mortality information, in particular, often sheds new light on a person's cancer history.

As a guide, while total cancers for 2009 were quoted at 10805 in our previous report,¹ the total currently recorded for 2009 is 10968, an increase of about 1.5%. Mortality data are much more stable, but the benefits of more timely incidence reporting must be weighed against the apparent stability of the data as time passes.

1.4 Statistical methods

Statistics from the Registry commonly fall into one of two major groups: **incidence** is reported for all malignancies except primary squamous cell and basal cell skin cancers (SCC and BCC), and **mortality** for all malignancies and certain other tumours or tumour-like conditions. The usual statistics calculated for both types of report are briefly discussed below; formulae and relevant details are in Appendix 2B.

Rates are calculated separately for males and females, expressed as events (diagnoses or deaths) per 100,000 person-years:

Age-specific rates (ASPR) are based on five-year age groups and are calculated by dividing the numbers of cases by the population of the same sex and age group. Whole-population data come from the ABS and indigenous data from the Epidemiology Branch.

Age-standardised rates (ASR in Tables) are calculated by the direct method, as a summation of weighted age-specific rates. Tables show the 95% confidence interval (c.i.) for ASRs. When a subset of age groups (e.g. 15-39 years) is considered, the term **age-adjusted rate (AAR)** is used instead of ASR.

The **World Standard Population 1960**² remains in routine use for ASR calculation, as in most cancer registries worldwide. However in some tables a second ASR and 95% c.i. are shown, using the Australian (2001)³ population standard, labelled "ASR2". These ASRs are usually quite different, and comparisons need to take note of which "standard" is being used.

Cumulative Incidence and Cumulative Risk are closely related. **Cumulative incidence** is an estimate of the proportion of persons, up to a specific age, who have been affected by a particular condition at some time. In Registry reports, this is expressed as a percentage.

Cumulative risk (LR) estimates the probability of having cancer (incidence) or dying of it (mortality), up to a specific age. This is derived from the relevant cumulative incidence figures, and calculated for ages 0 to 74 years (see **Appendix 2B** for formulae).

In this report, LR is expressed as a "1 in *n*" chance of diagnosis or death. As indicated in relevant tables, a "-" is used to indicate a lack of data (no cases), and a "*" to indicate no data for cases under 75 years of age, or a "risk" smaller than 1 in 10,000.

Person years of life lost (PYLL) is an estimate of the number of years of life lost due to specific causes, calculated to age 75 years; an index of premature death (see Appendix 2B).

Rates and risks: It should be noted that incidence and mortality **rates** and cumulative **risks** may not be in proportion to one another because of differences in population age structures.

Privacy: Application of a Divisional policy has led to the suppression of case counts between 1 and 4 inclusive (shown as "<5") and associated percentages and age-specific rates (shown as "NR" for "not released"). Where NR is used in a case count cell, a number ≥ 5 has been suppressed to prevent calculation. Enquiries about the process and about access to the underlying specific information should be directed to the Registry for advice.

2. Cancer in Western Australia, 2010

2.1 All cancers

2.1.1 Incidence

In 2010, there were 10942 new diagnoses of cancer in Western Australia, just over 1% more than reported for 2009, and the all-cancers age-standardised rates, indicating risk, were not significantly changed. There were 6283 cancers diagnosed in males (ASR 365 per 100,000) and 4659 in females (ASR 269) (Table 1). Cancers in males accounted for 57% of all cases.

The estimated cumulative risk of cancer to age 75 years was 1 in 3 for males and 1 in 4 for females; the cumulative incidence of cancer (the proportion of persons in whom cancer had been diagnosed by age 75) was 43% for males and 30% for females. These measures are essentially unchanged in recent years.

Cancer is generally more common in females than in males between ages 25 and 50 (mainly ovarian and breast cancers), but prostate cancer and lung cancer account for much of a male predominance in older ages.

The differences in cancer incidence rates across the age range can be seen for individual cancers and all cancers combined, in Appendix 3A.

2.1.2 Mortality

Among Western Australian residents in 2010 there were 3800 deaths due to cancer (2260 in males, 1540 in females) (Table 1). Mortality ASRs were 117 deaths per 100,000 males (unchanged from 2009) and 72 per 100,000 females (reduced from 84 in 2009). The estimated cumulative risk of death due to cancer before age 75 years was 1 in 9 for males and 1 in 13 for females.

There was no significant change in the age-pattern of cancer mortality in 2010. Cancer death rates generally increased for both males and females from age 20. All-cancers death rates among males were consistently higher than in females at ages greater than 50 years.

These cancer deaths include 54 deaths due to non-melanoma skin cancers, 68% of them in males. Of these, 42 (78%) were due to squamous or basal cell carcinomas, types that are not included in “cancer” incidence statistics. The annual number of non-melanoma skin-cancer related deaths continues to increase.

Other deaths that are not counted in these “cancer” mortality statistics include -

- 15 cancer-related deaths in persons not normally resident in Western Australia (11 Australian, 4 from overseas)

- 6 deaths due to benign tumours (all CNS tumours)

- <5 deaths due to “uncertain malignant potential” lymphohaematopoietic neoplasms

- 7 deaths due to “uncertain malignant potential” non-lymphohaematopoietic neoplasms

- 1907 deaths due to non-tumour-related causes among persons with a Registry tumour record (1087 males, 820 females)

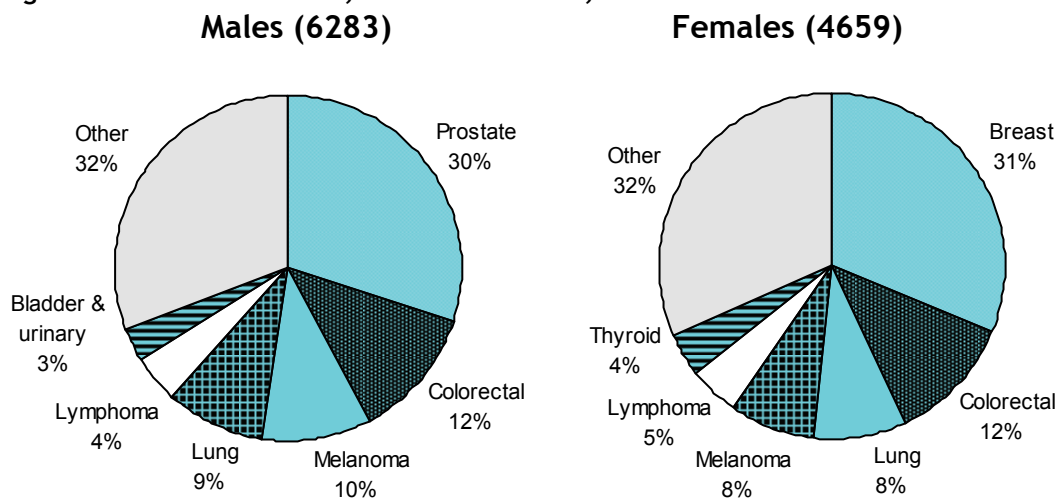
- 74 deaths of unresolved cause among persons with a tumour record (pending outcome of coronial investigations).

2.2 Common cancers - Incidence and Mortality

The most common incident cancer types in males and females are shown in summary form in Figure 1, with the detailed statistics in Table 1. There has been no recent change in the distribution of the most common types of cancer. Numbers and rates of prostate cancer were lower, but higher for breast cancers among women, than in 2009. Although differences were not statistically significant, 2010 marks the first reduction in overall annual prostate cancer incidence since 2004.

For further breakdown by age group, and including the less common cancer types, see Appendix 3A; for incidence statistics from different Regions within WA see Appendix 3D.

Figure 1. Cancer incidence, Western Australia, 2010: common cancers



The cancers most commonly causing mortality are shown in summary form in Figure 2, with the detailed statistics in Table 1. There have been only minor differences in the relative impact of these most common types in recent years. Lung cancer now appears firmly established as a more frequent cause of mortality in women than breast cancer, and continues to be the most common cause of cancer-related death in males.

For further breakdown by age group, and including the less common cancer types, see Appendix 3B; for mortality statistics from different Regions within WA see Appendix 3E.

Figure 2. Cancer mortality, Western Australia, 2010: common cancers

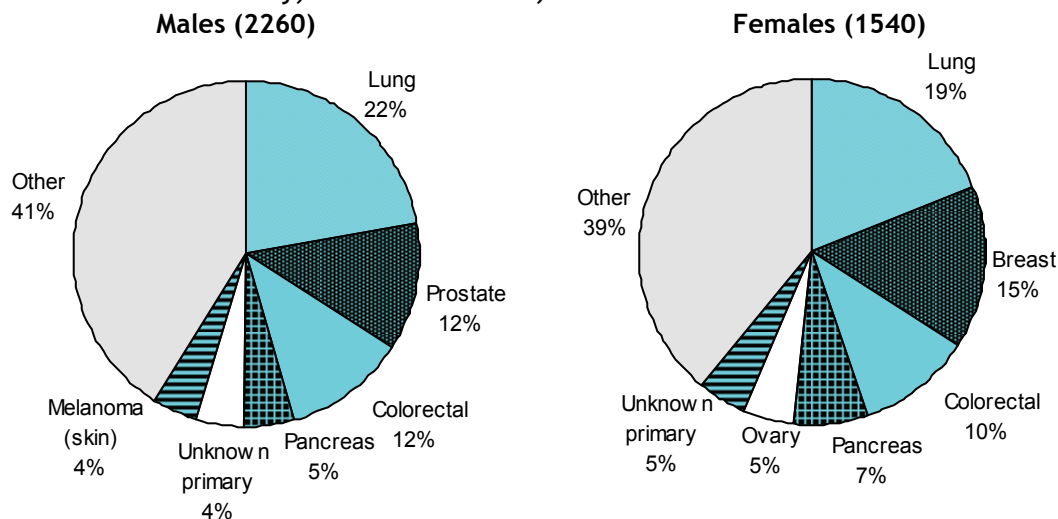


Table 1. Cancer incidence and mortality, Western Australia 2010: leading types in males and females

Incidence

	Males					Females					
	Cases	%	ASR	95%c.i.	Risk	Cases	%	ASR	95%c.i.	Risk	
Prostate	1887	30.0	110.9	106-116	7	Breast	1444	31.0	88.5	83.8-93.2	10
Colorectal	765	12.2	42.9	39.8-46.0	20	Colorectal	565	12.1	28.7	26.2-31.3	31
Colon	488	7.8	27.1	24.6-29.5	32	Colon	423	9.1	21.0	18.9-23.2	42
Rectum	276	4.4	15.8	13.9-17.7	52	Rectum	140	3.0	7.6	6.2-8.9	114
Melanoma (skin)	648	10.3	38.0	35.0-41.0	24	Lung	393	8.4	20.8	18.6-22.9	37
Lung	577	9.2	30.3	27.7-32.8	30	Melanoma (skin)	385	8.3	23.4	21.0-25.9	40
Lymphoma	277	4.4	17.1	15.0-19.1	53	Lymphoma	210	4.5	12.4	10.6-14.2	72
Lymphoma NOS	5	0.1	0.3	0.0-0.5	5257	Lymphoma NOS	8	0.2	0.4	0.1-0.7	1839
Hodgkin lymphoma	37	0.6	2.7	1.8-3.6	416	Hodgkin lymphoma	32	0.7	2.6	1.7-3.5	496
NHL	235	3.7	14.1	12.2-15.9	61	NHL	170	3.6	9.4	7.9-10.9	89
Bladder & urinary tract	185	2.9	9.8	8.3-11.3	85	Thyroid gland	192	4.1	13.3	11.4-15.2	76
Leukaemia	177	2.8	11.4	9.6-13.2	91	Uterus	180	3.9	10.1	8.6-11.7	83
Leukaemia NOS	<5	NR	0.1	0 - 0.3	*	Leukaemia	116	2.5	7.1	5.7-8.6	138
Lymphoid leukaemia	99	1.6	6.5	5.1-7.9	152	Leukaemia NOS	<5	NR	0.1	0 - 0.3	6826
Myeloid leukaemia	NR	NR	4.8	3.6-5.9	227	Lymphoid leukaemia	NR	NR	3.5	2.4-4.5	258
Leukaemia, other	0					Myeloid leukaemia	60	1.3	3.5	2.5-4.5	309
Kidney	157	2.5	10.0	8.4-11.6	89	Leukaemia, other	0				
Lip, gum & mouth	156	2.5	9.6	8.0-11.1	97	Ovary	99	2.1	5.7	4.5-6.9	175
Unknown primary	137	2.2	7.0	5.8-8.2	162	Unknown primary	99	2.1	4.2	3.3-5.1	251
Pancreas	133	2.1	7.6	6.3-8.9	109	Pancreas	96	2.1	4.6	3.6-5.6	160
Oesophagus	111	1.8	6.2	5.0-7.4	133	Kidney	93	2.0	5.5	4.3-6.7	168
Stomach	110	1.8	5.7	4.6-6.9	178	Cervix	90	1.9	6.2	4.9-7.5	178
Brain	99	1.6	6.5	5.2-7.9	153	Bladder & urinary tract	63	1.4	2.8	2.1-3.6	309
Mesothelioma	84	1.3	4.6	3.6-5.6	180	Brain	60	1.3	3.8	2.7-4.9	269
Liver	80	1.3	4.6	3.6-5.7	187	Myeloma	56	1.2	2.7	2.0-3.5	310
Pharynx	74	1.2	4.5	3.5-5.5	202	Lip, gum & mouth	52	1.1	2.9	2.0-3.7	341
Myeloma	71	1.1	3.7	2.8-4.6	249	Stomach	47	1.0	2.4	1.6-3.1	450
Testis	70	1.1	5.5	4.2-6.9	236	Gallbladder / bile ducts	43	0.9	2.0	1.3-2.6	454
Thyroid gland	61	1.0	4.0	3.0-5.0	244	Oesophagus	35	0.8	1.8	1.2-2.5	478
Skin (NMSC exc. SCC/BCC)	55	0.9	3.0	2.2-3.9	356	Skin (NMSC exc. SCC/BCC)	30	0.6	1.3	0.8-1.9	804
All cancers	6283	100.0	365.1	356-374	3	All cancers	4659	100.0	269.1	261-277	4

Mortality

	Males					Females					
	Cases	%	ASR	95%c.i.	Risk	Cases	%	ASR	95%c.i.	Risk	
Lung	501	22.2	25.9	23.5-28.2	36	Lung	290	18.8	13.3	11.6-14.9	61
Prostate	269	11.9	12.2	10.7-13.7	110	Breast	237	15.4	12.4	10.7-14.1	71
Colorectal	260	11.5	13.5	11.8-15.2	75	Colorectal	160	10.4	6.5	5.4-7.6	175
Colon	169	7.5	8.7	7.3-10.1	121	Colon	114	7.4	4.5	3.6-5.4	260
Rectum	91	4.0	4.8	3.8-5.8	193	Rectum	46	3.0	2.0	1.4-2.6	533
Pancreas	109	4.8	5.9	4.7-7.0	149	Pancreas	107	6.9	4.6	3.7-5.6	206
Unknown primary	99	4.4	4.9	3.9-5.9	273	Ovary	75	4.9	3.7	2.8-4.5	229
Melanoma (skin)	90	4.0	5.1	4.0-6.2	167	Unknown primary	74	4.8	2.9	2.2-3.6	388
Stomach	87	3.8	4.4	3.4-5.4	227	Lymphoma	61	4.0	2.5	1.8-3.2	419
Lymphoma	80	3.5	4.2	3.3-5.2	213	Lymphoma NOS	<5	NR	0.1	0 - 0.3	8625
Lymphoma NOS	<5	NR	0.1	0 - 0.2	*	Hodgkin lymphoma	<5	NR	0.1	0 - 0.2	*
Hodgkin lymphoma	NR	NR	0.3	0.0-0.5	4712	NHL	54	3.5	2.3	1.6-2.9	440
NHL	74	3.3	3.9	3.0-4.8	227	Brain	53	3.4	3.2	2.2-4.2	362
Brain	77	3.4	4.6	3.6-5.7	189	Leukaemia	48	3.1	2.3	1.6-3.0	415
Leukaemia	77	3.4	4.2	3.2-5.2	261	Leukaemia NOS	<5	NR	0.1	0 - 0.3	6826
Leukaemia NOS	<5	0.2	0.2	0.0-0.3	*	Lymphoid leukaemia	NR	NR	0.5	0.2-0.8	2002
Lymphoid leukaemia	25	1.1	1.4	0.8-2.0	685	Myeloid leukaemia	33	2.1	1.6	1.0-2.2	566
Myeloid leukaemia	48	2.1	2.6	1.8-3.4	420	Leukaemia, other	0				
Leukaemia, other	0				-	Uterus	47	3.1	2.1	1.5-2.8	439
Mesothelioma	71	3.1	3.7	2.8-4.6	204	Oesophagus	35	2.3	1.6	1.0-2.2	544
Oesophagus	67	3.0	3.5	2.6-4.3	290	Cervix	34	2.2	1.8	1.2-2.5	561
Liver	65	2.9	3.6	2.7-4.5	223	Melanoma (skin)	33	2.1	1.7	1.1-2.3	694
Bladder & urinary tract	58	2.6	2.8	2.1-3.6	349	Myeloma	32	2.1	1.4	0.9-1.9	567
Myeloma	50	2.2	2.4	1.7-3.1	450	Gallbladder / bile ducts	30	1.9	1.3	0.8-1.8	872
Kidney	47	2.1	2.8	2.0-3.6	330	Bladder & urinary tract	25	1.6	1.0	0.5-1.4	1441
Skin (NMSC inc. SCC/BCC)	37	1.6	1.6	1.1-2.2	1300	Stomach	21	1.4	1.0	0.5-1.4	1127
Pharynx	28	1.2	1.6	1.0-2.2	530	Liver	18	1.2	1.0	0.5-1.6	737
Gallbladder / bile ducts	27	1.2	1.5	0.9-2.1	485	Kidney	18	1.2	0.8	0.4-1.1	1205
Myelodysplastic diseases	27	1.2	1.2	0.7-1.6	2027	Myelodysplastic diseases	18	1.2	0.6	0.3-1.0	2055
Tongue	24	1.1	1.3	0.8-1.9	802	Skin (NMSC inc. SCC/BCC)	17	1.1	0.6	0.3-1.0	1869
All cancer deaths	2260	100.0	117.2	112-122	9	All cancer deaths	1540	100.0	72.0	68.1-76.0	13

(NHL - Non-Hodgkin lymphoma; Refer to Statistical Methods, Section 1.4, for other terms & abbreviations used)

2.3 Cancer in different age groups

2.3.1 Cancer in children

Incidence: In children under the age of 15 years, there were 58 cases of cancer diagnosed in 2010, 32 males and 26 females. The most common types were leukaemias (17 cases) and brain tumours (11). Numbers and rates were similar to those of recent years.

Numbers and rates by age group may be found in Appendix 3A and Appendix 3B. The International Classification of Childhood Cancer (Version 3) table based on major diagnostic groups based primarily on tumour morphology is found in Appendix 3C. This classification includes a further 9 “uncertain malignant potential” brain tumours not included in “cancer” statistics.

2.3.2 Cancer in the 15-39 years age range

In the 15 to 39 years age range, there were 585 cancer diagnoses in 2010, 5% fewer than in 2009. There were 68 cancer-related deaths in this age group in 2010, 10% more than in 2009. The most common types are shown in summary form in Figures 3 and 4, with the detailed statistics in Table 2 and 3.

Figure 3. Cancer incidence, Western Australia, 2010: common cancers in the 15 to 39 years age group

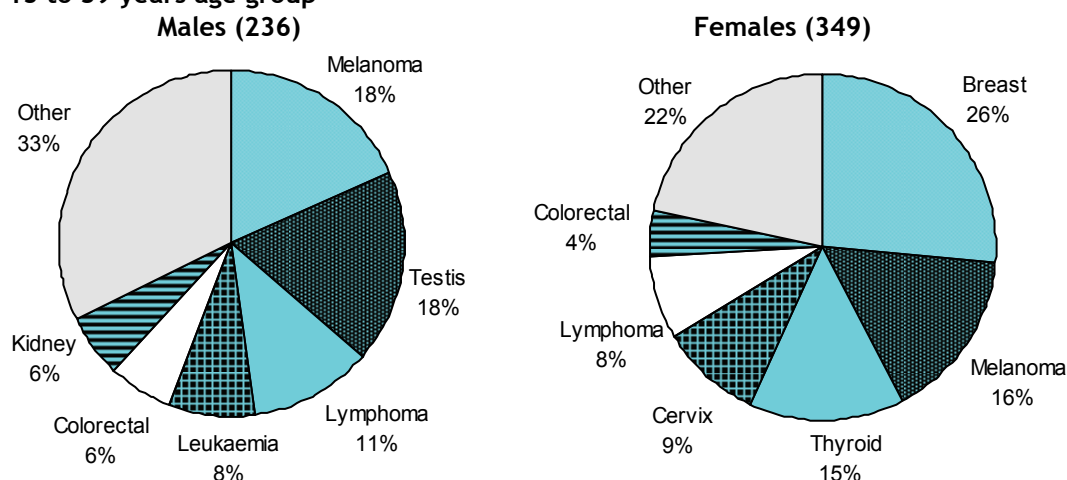
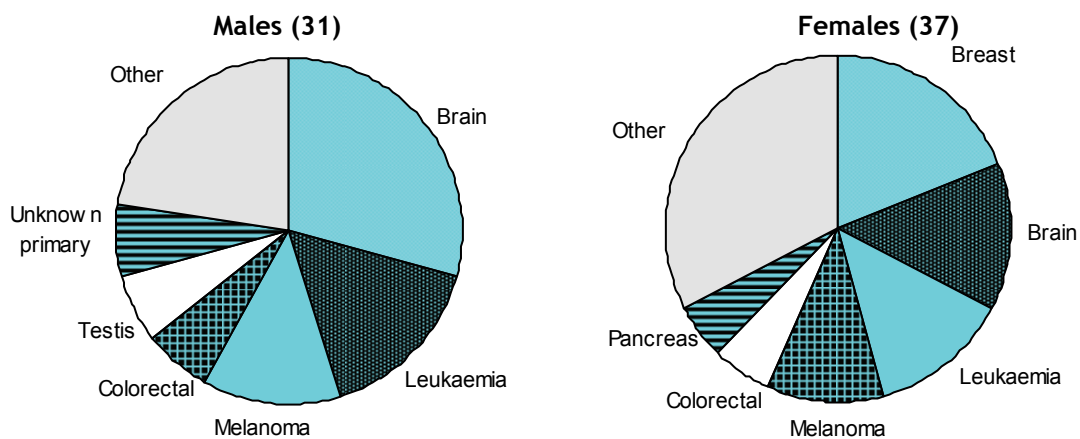


Figure 4. Cancer mortality, Western Australia, 2010: common cancers in the 15 to 39 years age group



2.3.3 Cancer in the 40-64 years age range

There were 4587 new cancer cases in the age range 40 to 64 years, prostate and breast most common, with an overall risk of cancer occurring in this age range of 1 in 6 for males and 1 in 7 for females, with no significant change in overall incidence rates since 2009. There were 925 cancer-related deaths in this age range, with mortality rates relatively unchanged in males but significantly reduced since 2009 in females to an AAR of 103 per 100,000 (131 in 2009). The mortality decrease was spread over many types rather than any type predominating.

The most common types are shown in summary form in Figures 5 and 6, with the detailed statistics in Table 2 and 3.

Figure 5. Cancer incidence, Western Australia, 2010: common cancers in the 40 to 64 years age group

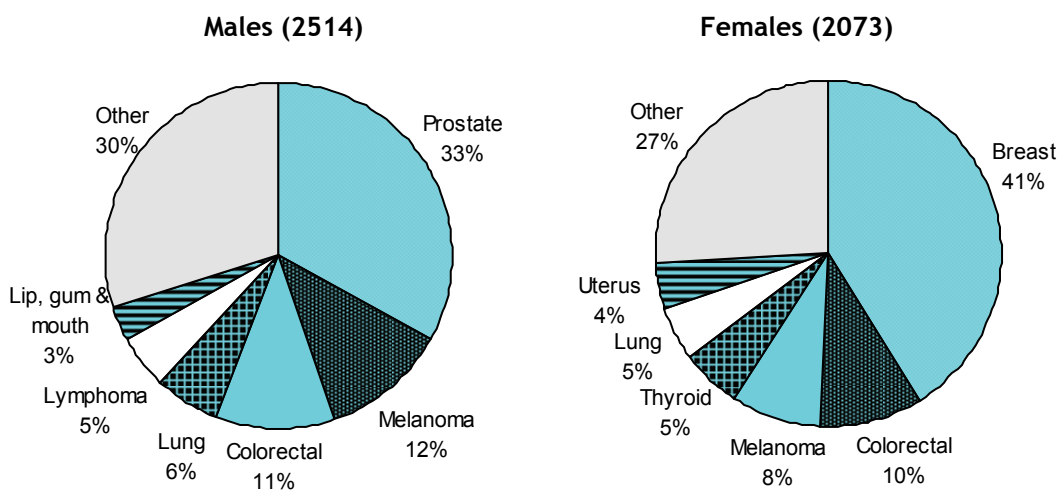
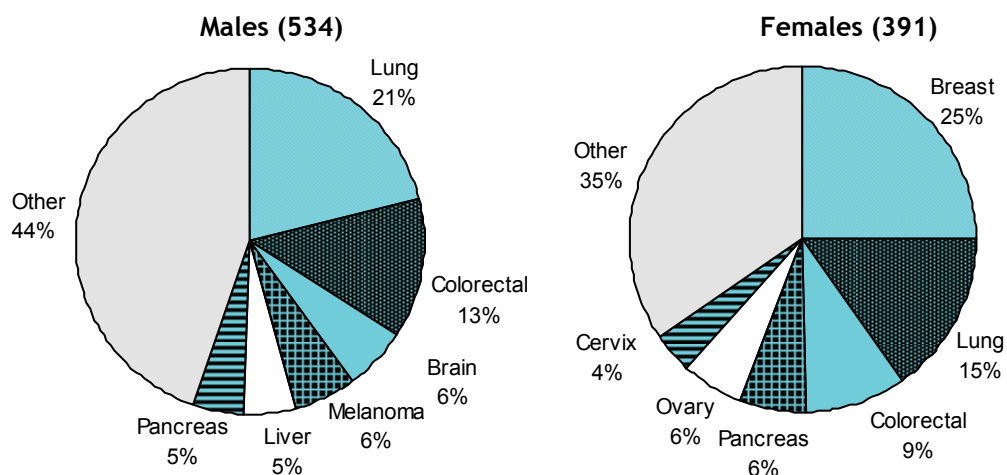


Figure 6. Cancer mortality, Western Australia, 2010: common cancers in the 40 to 64 years age group



2.3.4 Cancer in persons aged 65 and over

There were 5712 new cancer diagnoses in persons over the age of 65 years in 2010. In this age range, prostate cancer (1052 cases) outnumbered any other specific cancer type in either sex (Table 2) and accounted for 30% of diagnoses in males. Overall male incidence rates in this age group were lower than in 2009, while rates in females were maintained. Among females, breast cancer predominated (498 cases, 22.5%).

There were 2792 cancer-related deaths in this age range in 2010, showing little change since 2009. Over the age of 65 years, lung cancer was the most common cause of cancer-related death, causing 617 deaths, slightly more than in 2009.

The most common types are shown in summary form in Figures 7 and 8, with the detailed statistics in Table 2 and 3.

Figure 7. Cancer incidence, Western Australia, 2010: common cancers in the 65 years & over age group

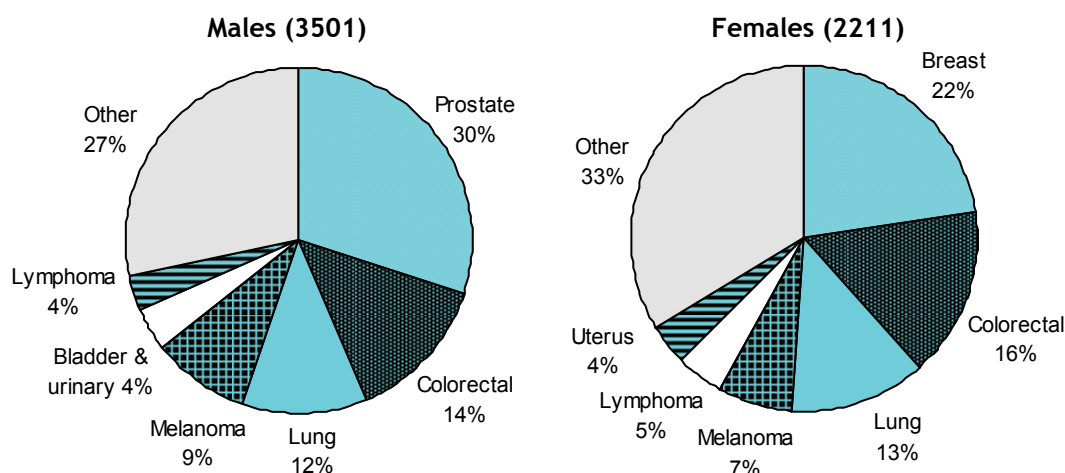


Figure 8. Cancer mortality, Western Australia, 2010: common cancers in the 65 years & over age group

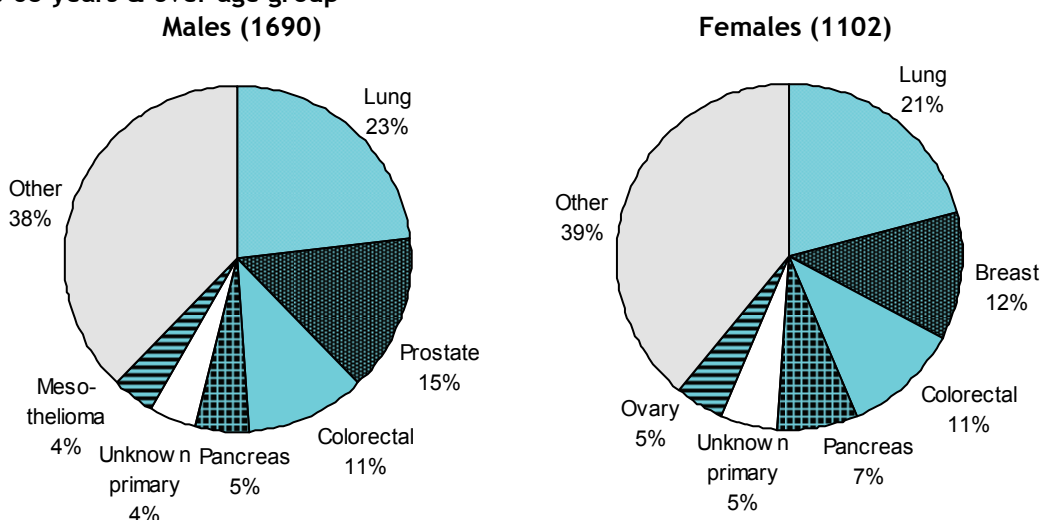


Table 2. Cancer incidence, Western Australia, 2010: leading types by sex and age group (ASR: age-adjusted rate)

15 to 39 years

Males					Females				
	Cases	%	ASR 95%c.i.	Risk		Cases	%	ASR 95%c.i.	Risk
Melanoma (skin)	43	18.2	9.2	6.4-399	Breast	92	26.4	18.9	15.0-178
Testis	43	18.2	9.6	6.7-402	Melanoma (skin)	56	16.0	12.5	9.2-291
Lymphoma	27	11.4	5.9	3.6-643	Thyroid gland	51	14.6	11.2	8.1-318
Lymphoma NOS	0				Cervix	33	9.5	7.3	4.8-497
Hodgkin lymphoma	15	6.4	3.3	1.6-1149	Lymphoma	27	7.7	6.4	3.9-599
NHL	12	5.1	2.5	1.1-1459	Lymphoma NOS	0			
Leukaemia	19	8.1	4.6	2.5-895	Hodgkin lymphoma	17	4.9	4.2	2.2-957
Leukaemia NOS	0				NHL	10	2.9	2.2	0.8-1600
Lymphoid leukaemia	8	3.4	1.9	0.6-2084	Colorectal	14	4.0	3.0	1.4-1149
Myeloid leukaemia	11	4.7	2.7	1.1-1569	Colon	9	2.6	1.9	0.6-1784
Leukaemia, other	0				Rectum	5	1.4	1.1	0.1-3225
Colorectal	14	5.9	2.9	1.4-1236	Ovary	9	2.6	2.0	0.7-1793
Colon	9	3.8	1.8	0.6-1897	Leukaemia	9	2.6	2.2	0.7-1815
Rectum	5	2.1	1.1	0.1-3548	Leukaemia NOS	0			
Kidney	14	5.9	2.9	1.4-1218	Lymphoid leukaemia	<5	NR	0.4	0-18275
Lip, gum & mouth	13	5.5	2.6	1.2-1310	Myeloid leukaemia	NR	NR	1.8	0.4-2325
Brain	10	4.2	2.2	0.8-1684	Leukaemia, other	0			
All cancers	236	100.0	51.6	45.0-73	All cancers	349	100.0	76.3	68.2-47

40 to 64 years

Males					Females				
	Cases	%	ASR 95%c.i.	Risk		Cases	%	ASR 95%c.i.	Risk
Prostate	833	33.1	211.2	197-17	Breast	854	41.2	229.1	214-17
Melanoma (skin)	291	11.6	75.4	66.7-49	Colorectal	200	9.6	52.7	45.4-68
Colorectal	277	11.0	71.0	62.6-50	Colon	140	6.8	36.7	30.6-97
Colon	164	6.5	42.2	35.8-84	Rectum	59	2.8	15.7	11.7-231
Rectum	112	4.5	28.5	23.2-124	Melanoma (skin)	175	8.4	47.0	40.0-82
Lung	159	6.3	40.5	34.2-84	Thyroid gland	110	5.3	29.9	24.3-132
Lymphoma	124	4.9	32.3	26.6-115	Lung	109	5.3	28.8	23.4-124
Lymphoma NOS	<5	NR	0.8	0-5257	Uterus	88	4.2	22.8	18.0-152
Hodgkin lymphoma	NR	NR	3.5	1.6-1159	Lymphoma	80	3.9	21.3	16.6-174
NHL	108	4.3	28.0	22.7-131	Lymphoma NOS	<5	NR	0.5	0-7418
Lip, gum & mouth	84	3.3	22.2	17.4-177	Hodgkin lymphoma	NR	NR	3.3	1.4-1272
Kidney	78	3.1	20.1	15.6-182	NHL	66	3.2	17.5	13.3-207
Leukaemia	64	2.5	16.5	12.4-222	Kidney	41	2.0	10.9	7.5-345
Leukaemia NOS	0				Cervix	40	1.9	11.0	7.6-369
Lymphoid leukaemia	39	1.6	10.0	6.8-358	Ovary	39	1.9	10.3	7.0-349
Myeloid leukaemia	25	1.0	6.5	3.9-584	Leukaemia	39	1.9	10.4	7.1-355
Leukaemia, other	0				Leukaemia NOS	0			
All cancers	2514	100.0	646.3	621-6	All cancers	2073	100.0	553.3	530-7

65 years and over

Males					Females				
	Cases	%	ASR 95%c.i.	Risk		Cases	%	ASR 95%c.i.	Risk
Prostate	1052	30.0	827.7	776-12	Breast	498	22.5	346.1	313-29
Colorectal	474	13.5	343.5	311-33	Colorectal	351	15.9	206.4	183-59
Colon	315	9.0	226.1	200-51	Colon	274	12.4	158.9	138-78
Rectum	159	4.5	117.4	98.5-91	Rectum	76	3.4	46.6	35.0-242
Lung	414	11.8	283.5	255-46	Lung	279	12.6	186.5	163-54
Melanoma (skin)	314	9.0	224.3	198-52	Melanoma (skin)	154	7.0	100.7	83.5-105
Bladder & urinary tract	136	3.9	94.7	78.2-122	Lymphoma	102	4.6	65.3	51.4-157
Lymphoma	123	3.5	91.7	74.9-116	Lymphoma NOS	NR	NR	3.7	0.4-2446
Lymphoma NOS	<5	NR	1.2	0-*	Hodgkin lymphoma	<5	NR	1.5	0-8625
Hodgkin lymphoma	NR	NR	6.4	1.8-1648	NHL	94	4.3	60.1	46.7-170
NHL	113	3.2	84.1	68.0-125	Uterus	86	3.9	57.1	44.1-196
Unknown primary	96	2.7	61.9	49.0-314	Pancreas	73	3.3	44.3	33.2-223
Pancreas	93	2.7	70.2	55.5-157	Unknown primary	71	3.2	33.4	24.8-511
Leukaemia	84	2.4	59.1	45.9-213	Leukaemia	61	2.8	37.9	27.7-293
Leukaemia NOS	<5	NR	1.8	0-*	Leukaemia NOS	<5	NR	1.9	0-6826
Lymphoid leukaemia	45	1.3	32.8	22.8-352	Lymphoid leukaemia	NR	NR	20.3	12.5-463
Myeloid leukaemia	NR	NR	24.5	16.2-538	Myeloid leukaemia	29	1.3	15.8	9.6-901
All cancers	3501	100.0	2569.3	2482-5	All cancers	2211	100.0	1410.7	1347-8

Table 3. Cancer mortality, Western Australia, 2010: leading types by sex and age group (ASR: age-adjusted rate)

15 to 39 years

Males						Females					
	Deaths	%	ASR	95%c.i.	Risk		Deaths	%	ASR	95%c.i.	Risk
Brain	9	29.0	1.8	0.6-3.0	1875	Breast	7	18.9	1.4	0.4-2.4	2343
Leukaemia	5	16.1	1.1	0.1-2.1	3513	Brain	5	13.5	1.2	0.1-2.3	3170
Leukaemia NOS	0				-	Leukaemia	5	13.5	1.1	0.1-2.0	3263
Lymphoid leukaemia	<5	NR	0.7	0 - 1.4	5837	Leukaemia NOS	0				-
Myeloid leukaemia	<5	NR	0.4	0 - 1.0	8826	Lymphoid leukaemia	<5	NR	0.2	0 - 0.6	*
Leukaemia, other	0				-	Myeloid leukaemia	<5	NR	0.9	0.0-1.7	4064
Melanoma (skin)	<5	NR	0.8	0.0-1.6	4233	Leukaemia, other	0				-
Colorectal	<5	NR	0.4	0 - 0.9	8318	Melanoma (skin)	<5	NR	0.9	0.0-1.7	4068
Colon	<5	NR	0.2	0 - 0.6	*	Colorectal	<5	NR	0.4	0 - 0.9	8275
Rectum	<5	NR	0.2	0 - 0.6	*	Colon	0				-
Testis	<5	NR	0.4	0 - 1.0	8618	Rectum	<5	NR	0.4	0 - 0.9	8275
Unknown primary	<5	NR	0.4	0 - 1.0	8618	Pancreas	<5	NR	0.4	0 - 0.9	8275
Lip, gum & mouth	<5	NR	0.2	0 - 0.6	*	Lung	<5	NR	0.4	0 - 0.9	8275
Small intestine	<5	NR	0.2	0 - 0.6	*	Cervix	<5	NR	0.5	0 - 1.1	8253
Liver	<5	NR	0.2	0 - 0.6	*	Unknown primary	<5	NR	0.4	0 - 1.0	8021
Pancreas	<5	NR	0.2	0 - 0.6	*	Bone	<5	NR	0.3	0 - 0.9	*
Bone	<5	NR	0.2	0 - 0.7	*	Skin (NMSC inc. SCC/BCC)	<5	NR	0.2	0 - 0.6	*
All cancer deaths	31	100.0	6.4	4.1-8.6	549	All cancer deaths	37	100.0	8.0	5.4-10.6	441

40 to 64 years

Males						Females					
	Deaths	%	ASR	95%c.i.	Risk		Deaths	%	ASR	95%c.i.	Risk
Lung	113	21.2	29.0	23.7-34.4	117	Breast	98	25.1	25.8	20.7-31.0	143
Colorectal	69	12.9	17.8	13.6-22.0	195	Lung	59	15.1	15.5	11.5-19.4	224
Colon	45	8.4	11.6	8.2-15.0	300	Colorectal	37	9.5	9.9	6.7-13.0	365
Rectum	24	4.5	6.1	3.7-8.6	560	Colon	26	6.6	7.0	4.3-9.7	522
Brain	32	6.0	8.3	5.4-11.2	434	Rectum	11	2.8	2.9	1.2-4.6	1216
Melanoma (skin)	31	5.8	7.9	5.1-10.7	447	Pancreas	24	6.1	6.2	3.7-8.7	540
Liver	25	4.7	6.3	3.8-8.7	565	Ovary	23	5.9	6.1	3.6-8.5	582
Pancreas	25	4.7	6.5	3.9-9.0	570	Cervix	15	3.8	4.1	2.0-6.1	979
Kidney	25	4.7	6.5	4.0-9.1	558	Unknown primary	13	3.3	3.4	1.5-5.2	1070
Oesophagus	23	4.3	6.0	3.5-8.4	614	Brain	12	3.1	3.2	1.4-5.0	1147
Stomach	23	4.3	6.0	3.5-8.4	599	Lymphoma	11	2.8	2.9	1.2-4.6	1224
Unknown primary	21	3.9	5.4	3.1-7.8	647	Lymphoma NOS	0				-
Leukaemia	20	3.7	5.3	2.9-7.6	707	Hodgkin lymphoma	0				-
Leukaemia NOS	0				-	NHL	11	2.8	2.9	1.2-4.6	1224
Lymphoid leukaemia	6	1.1	1.6	0.3-2.9	2409	Melanoma (skin)	10	2.6	2.7	1.0-4.3	1424
Myeloid leukaemia	14	2.6	3.6	1.7-5.6	1000	Uterus	10	2.6	2.6	1.0-4.2	1362
Leukaemia, other	0				-	Oesophagus	9	2.3	2.4	0.8-4.0	1482
All cancer deaths	534	100.0	137.7	126-149	26	All cancer deaths	391	100.0	102.9	92.7-113	35

65 years and over

Males						Females					
	Deaths	%	ASR	95%c.i.	Risk		Deaths	%	ASR	95%c.i.	Risk
Lung	388	23.0	266.1	239-294	51	Lung	229	20.8	132.4	114-151	84
Prostate	251	14.9	158.1	138-178	130	Breast	132	12.0	77.8	63.1-92.4	150
Colorectal	189	11.2	127.3	108-146	122	Colorectal	121	11.0	55.6	44.7-66.5	350
Colon	123	7.3	81.7	66.7-96.6	205	Colon	88	8.0	39.3	30.3-48.3	519
Rectum	66	3.9	45.7	34.2-57.2	300	Rectum	33	3.0	16.3	10.2-22.4	1071
Pancreas	83	4.9	59.6	46.3-72.9	205	Pancreas	81	7.4	42.2	31.9-52.4	347
Unknown primary	76	4.5	48.2	37.0-59.5	498	Unknown primary	59	5.4	27.1	19.4-34.7	658
Mesothelioma	65	3.8	47.2	35.3-59.1	225	Ovary	52	4.7	30.6	21.4-39.7	377
Stomach	64	3.8	41.5	30.9-52.1	366	Lymphoma	50	4.5	25.1	17.4-32.9	635
Lymphoma	61	3.6	42.5	31.4-53.6	300	Lymphoma NOS	<5	NR	2.0	0 - 4.2	8625
Lymphoma NOS	0				-	Hodgkin lymphoma	<5	NR	1.2	0 - 2.6	*
Hodgkin lymphoma	<5	NR	2.7	0.0-5.3	6572	NHL	43	3.9	21.9	14.6-29.2	686
NHL	NR	NR	39.8	29.1-50.6	314	Uterus	37	3.4	21.2	13.7-28.7	648
Melanoma (skin)	55	3.3	39.9	29.0-50.8	283	Leukaemia	35	3.2	19.2	12.2-26.1	672
Bladder & urinary tract	53	3.1	35.8	25.7-45.8	399	Leukaemia NOS	<5	NR	1.9	0 - 4.1	6826
Leukaemia	50	3.0	31.2	22.2-40.3	497	Lymphoid leukaemia	NR	NR	4.2	1.2-7.2	3413
Leukaemia NOS	<5	NR	2.2	0.0-4.4	*	Myeloid leukaemia	23	2.1	13.1	7.2-19.0	953
All cancer deaths	1690	100.0	1139.6	1083-1196	13	All cancer deaths	1102	100.0	598.4	559-637	23

2.4 Cancer incidence trends

In this section, line graphs are presented for several cancer types to illustrate how incidence rates have changed over time, and how they differ between males and females. In each graph, the central line for each sex (bold and solid for males, dashed for females) indicates the trend in the age-standardised rate (ASR) and the associated statistical uncertainty (95% confidence interval) is indicated by a pair of accompanying lines with markers. The relative width of the confidence intervals is generally smallest for the most common conditions - for example, "All cancers" (Figure 9). Changes in the reported incidence of any disease may be due to a combination of technical issues such as the completeness and timeliness of reporting, and actual disease occurrence which may be due to changes in risk factors in the recent or more distant past.

Trends that may reflect changes in smoking prevalence include decreasing incidence of lung and laryngeal cancers in males, while incidence increases in females. Changes are not so clear for bladder and urinary tract cancers.

Prostate cancer incidence has long been increasing but recent data suggest a reversal that may be confirmed with more recent data. Breast cancer incidence among women appears stable or increasing. Colorectal cancer incidence shows a slight downward trend and for melanoma the decrease in recent years is marked in both sexes.

Thyroid cancer, unusual in that incidence in females is higher than among males, appears to be increasing in both sexes, consistent with a long-established world-wide trend⁴ that may result from increased surveillance and detection, or other factors including radiation or hormonal factors. Cancers of unknown primary site were stable or decreasing, indicating ongoing success in confirming the details of initial reports.

Figure 9. Cancer incidence, WA, 2001-2010: trends for selected cancers

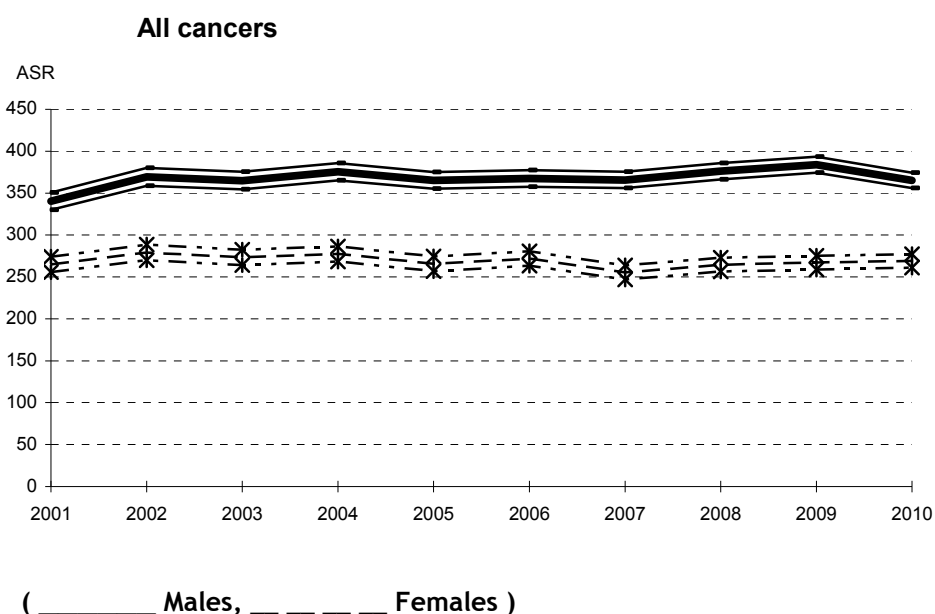
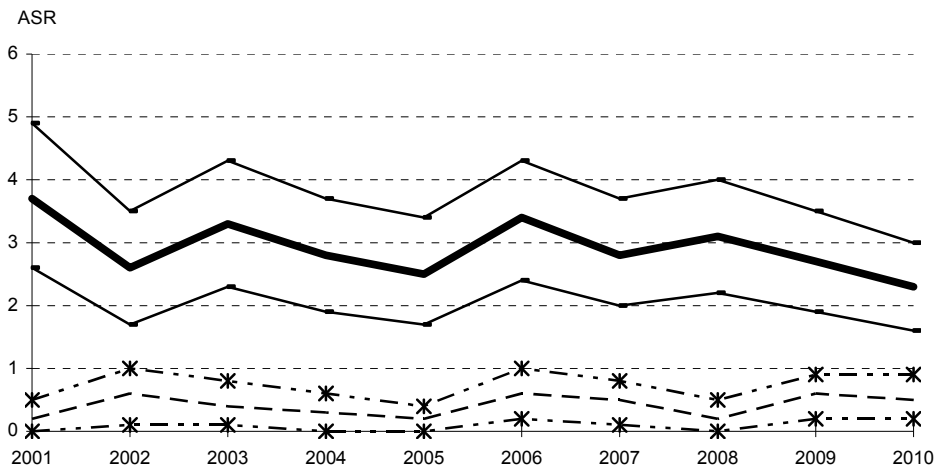
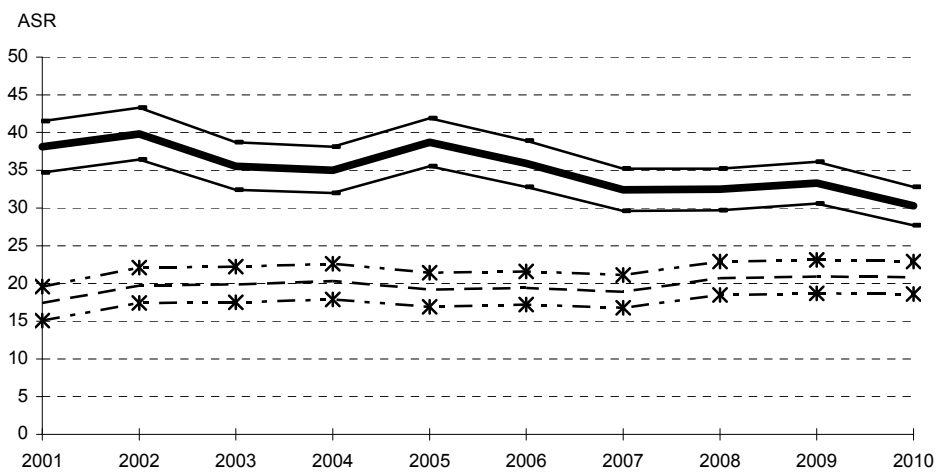


Figure 9 (cont.) Cancer incidence, WA, 2001-2010: trends for selected cancers

Laryngeal cancer



Lung cancer



Bladder & urinary tract

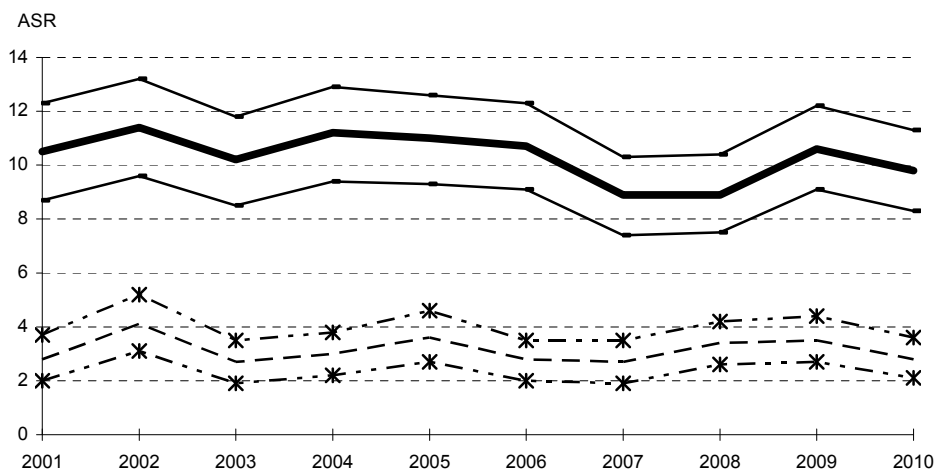
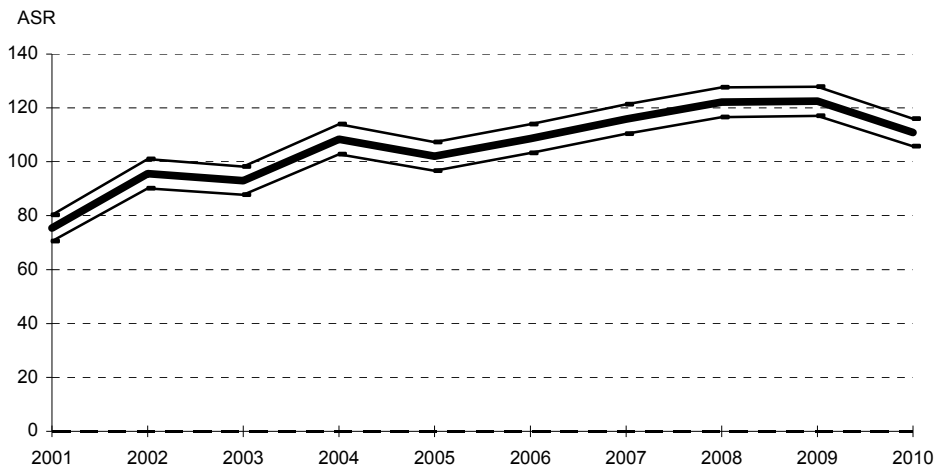
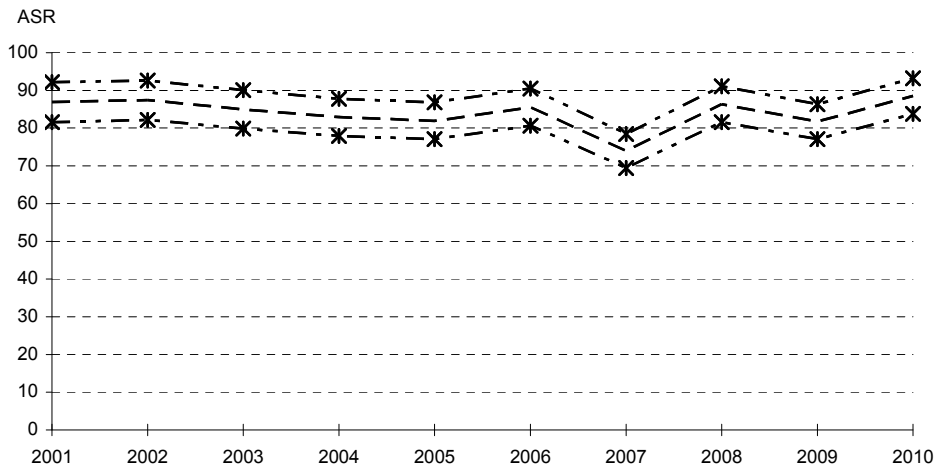


Figure 9 (cont.) Cancer incidence, WA, 2001-2010: trends for selected cancers

Prostate cancer



Breast (females)



Melanoma

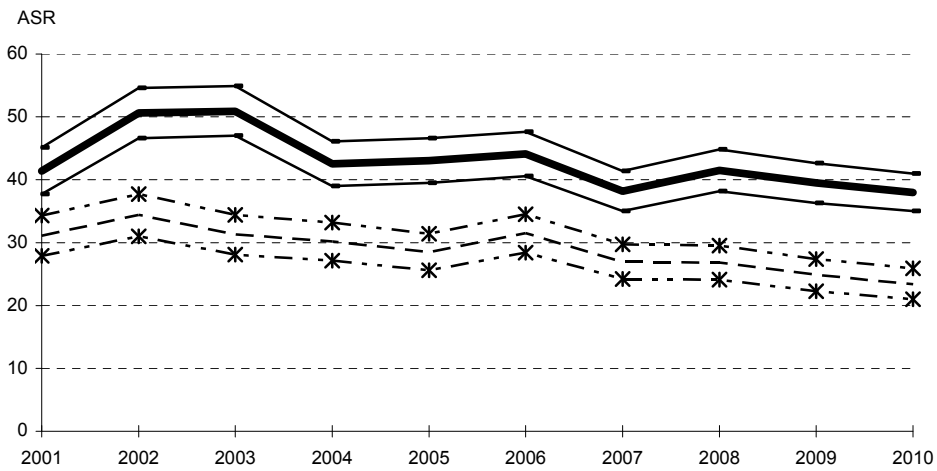


Figure 9 (cont.) Cancer incidence, WA, 2001-2010: trends for selected cancers

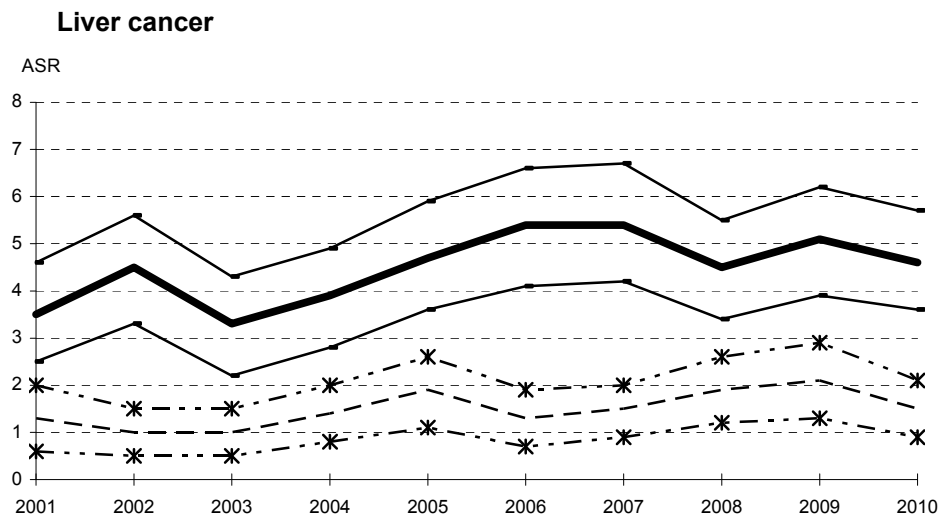
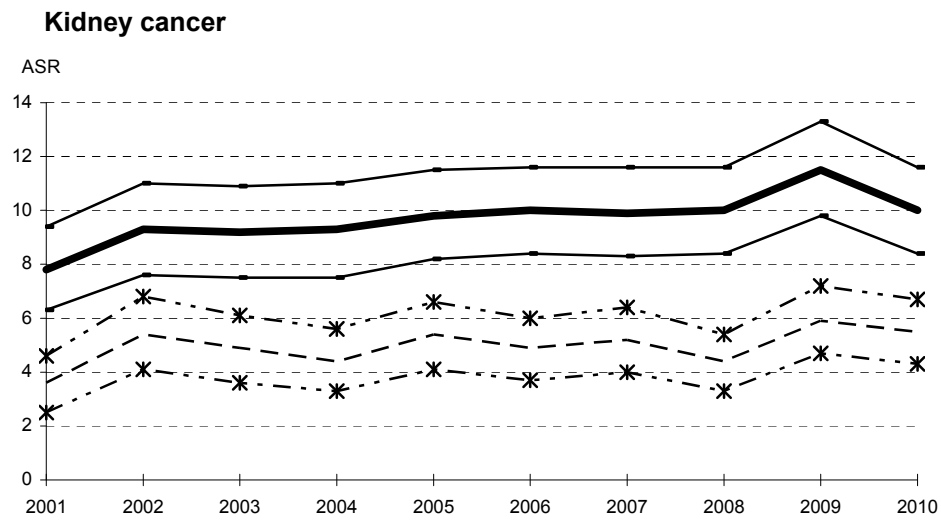
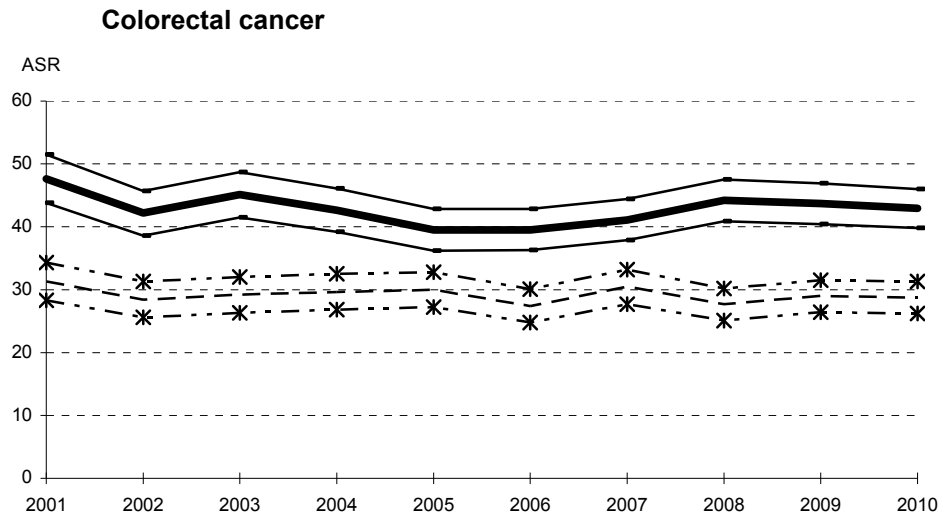


Figure 9 (cont.) Cancer incidence, WA, 2001-2010: trends for selected cancers

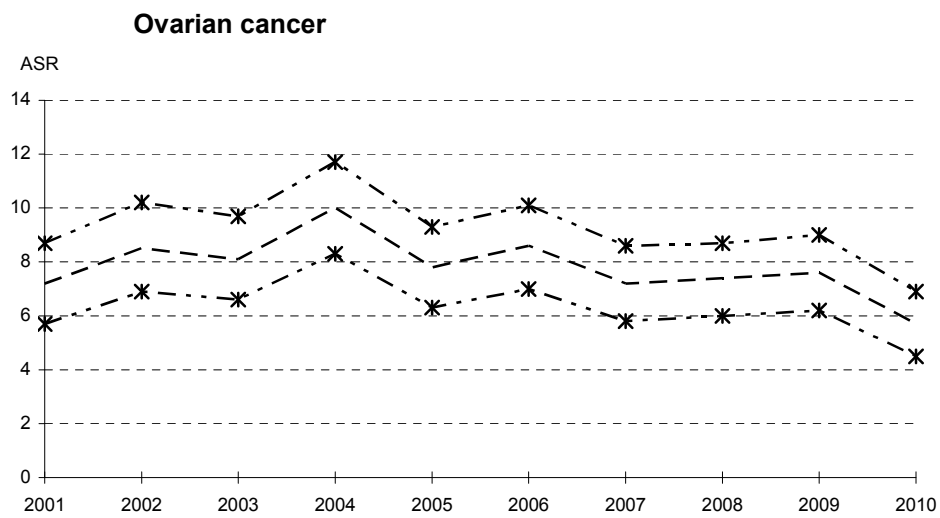
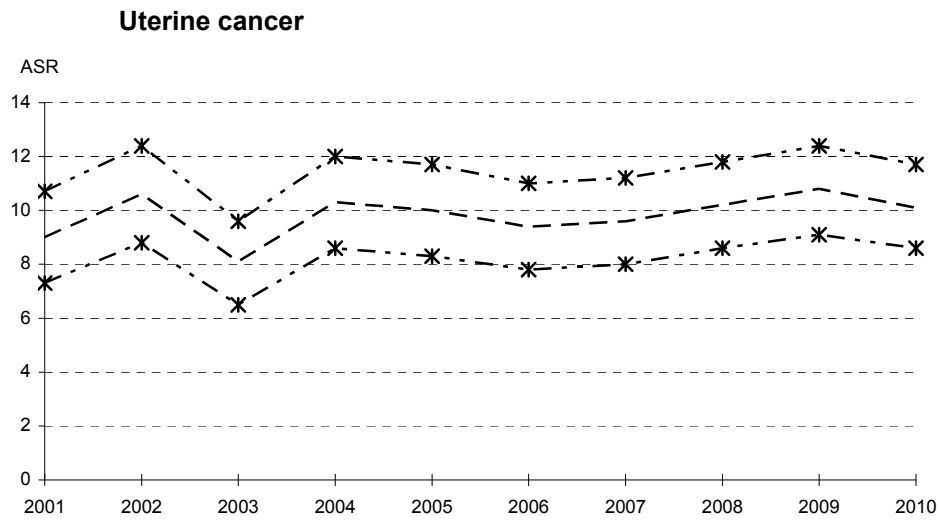
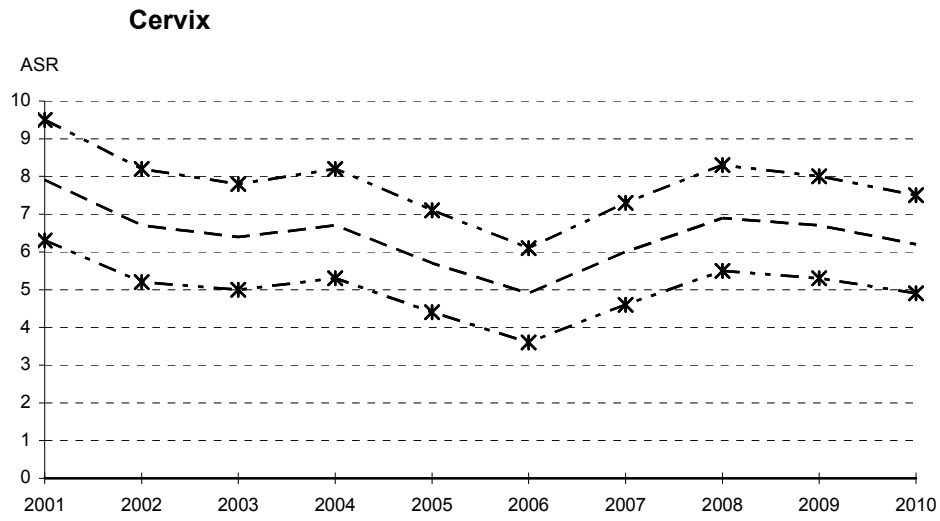
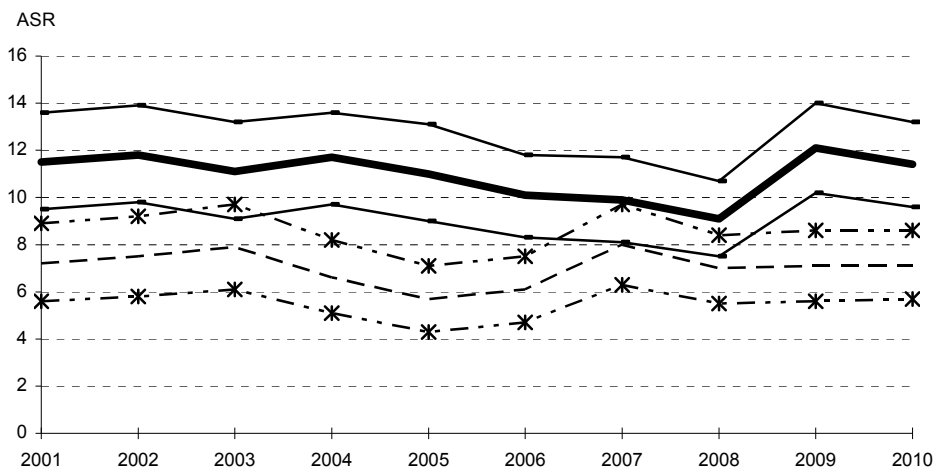
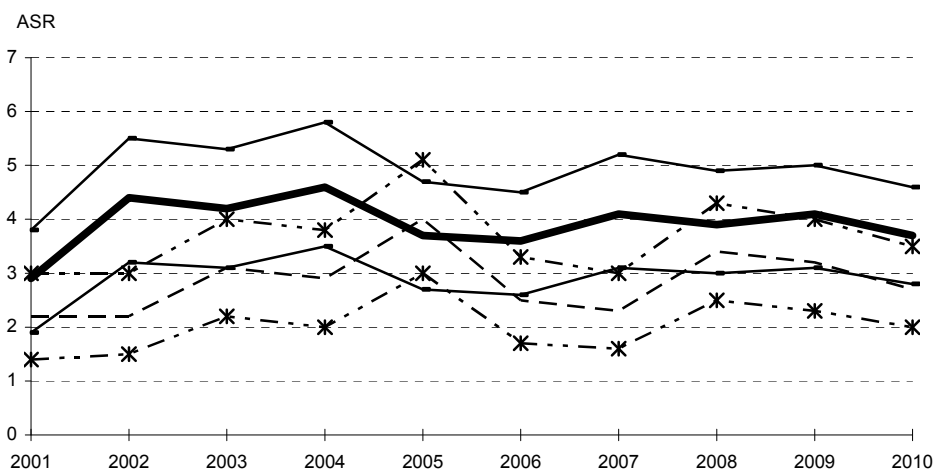


Figure 9 (cont.) Cancer incidence, WA, 2001-2010: trends for selected cancers

Leukaemias (all)



Myeloma



Lymphomas (all)

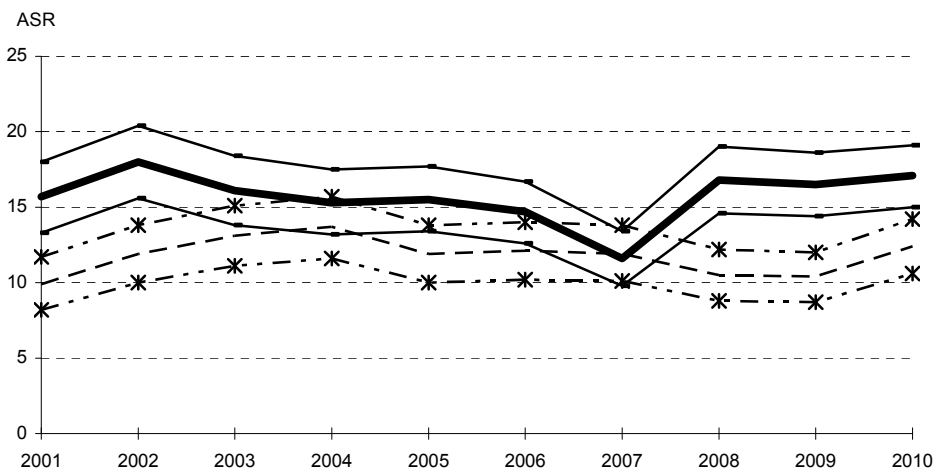


Figure 9 (cont.) Cancer incidence, WA, 2001-2010: trends for selected cancers

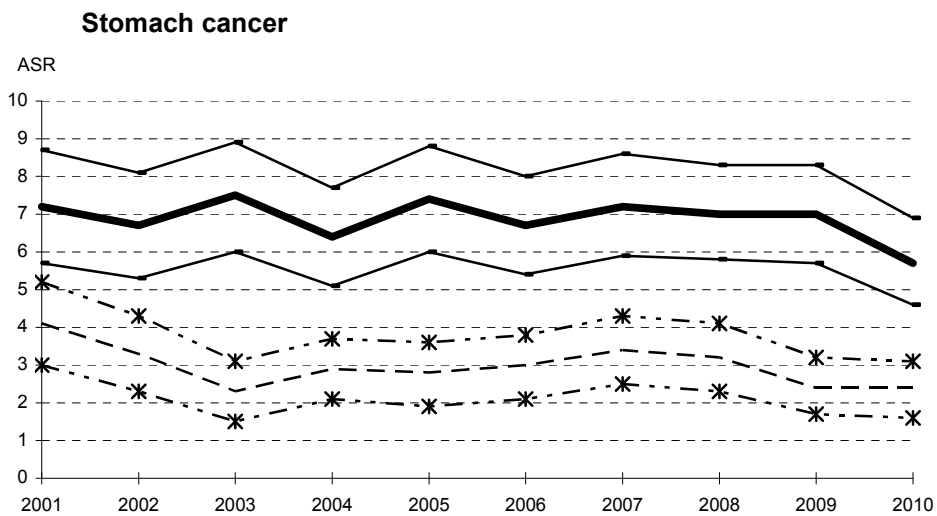
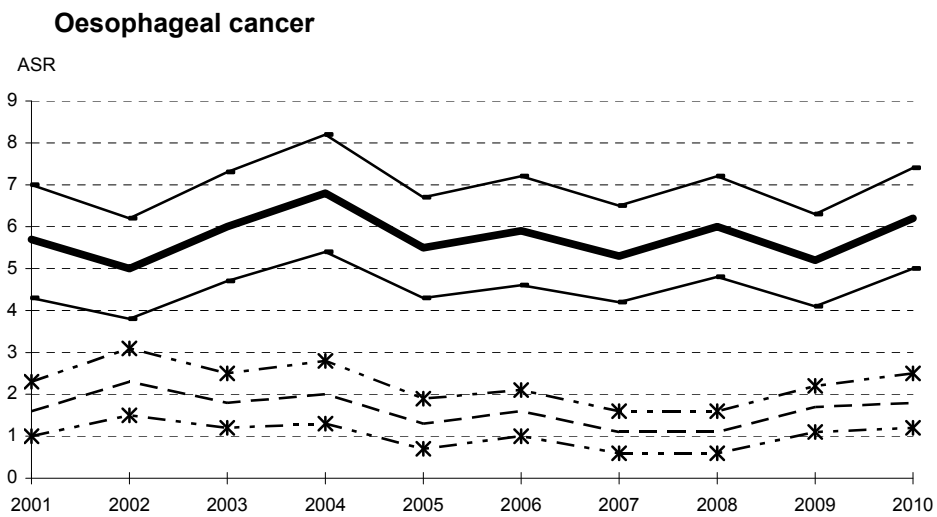
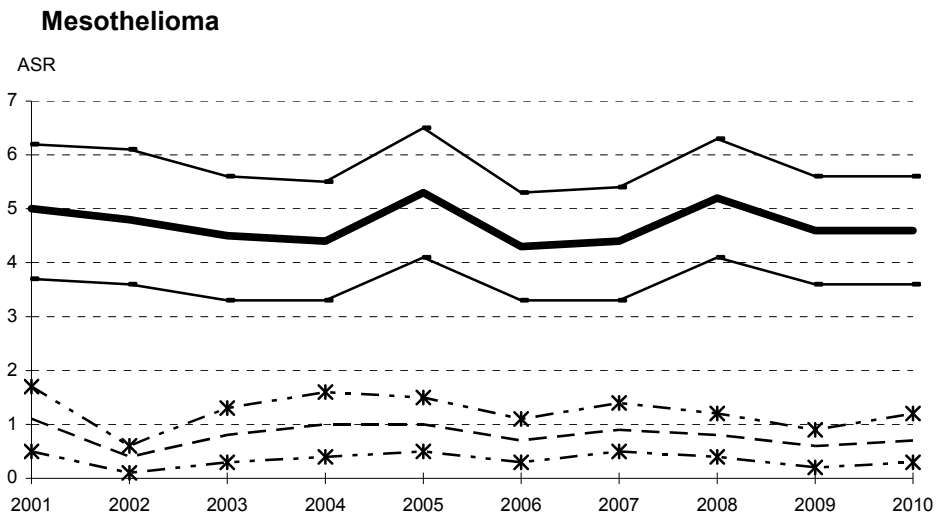
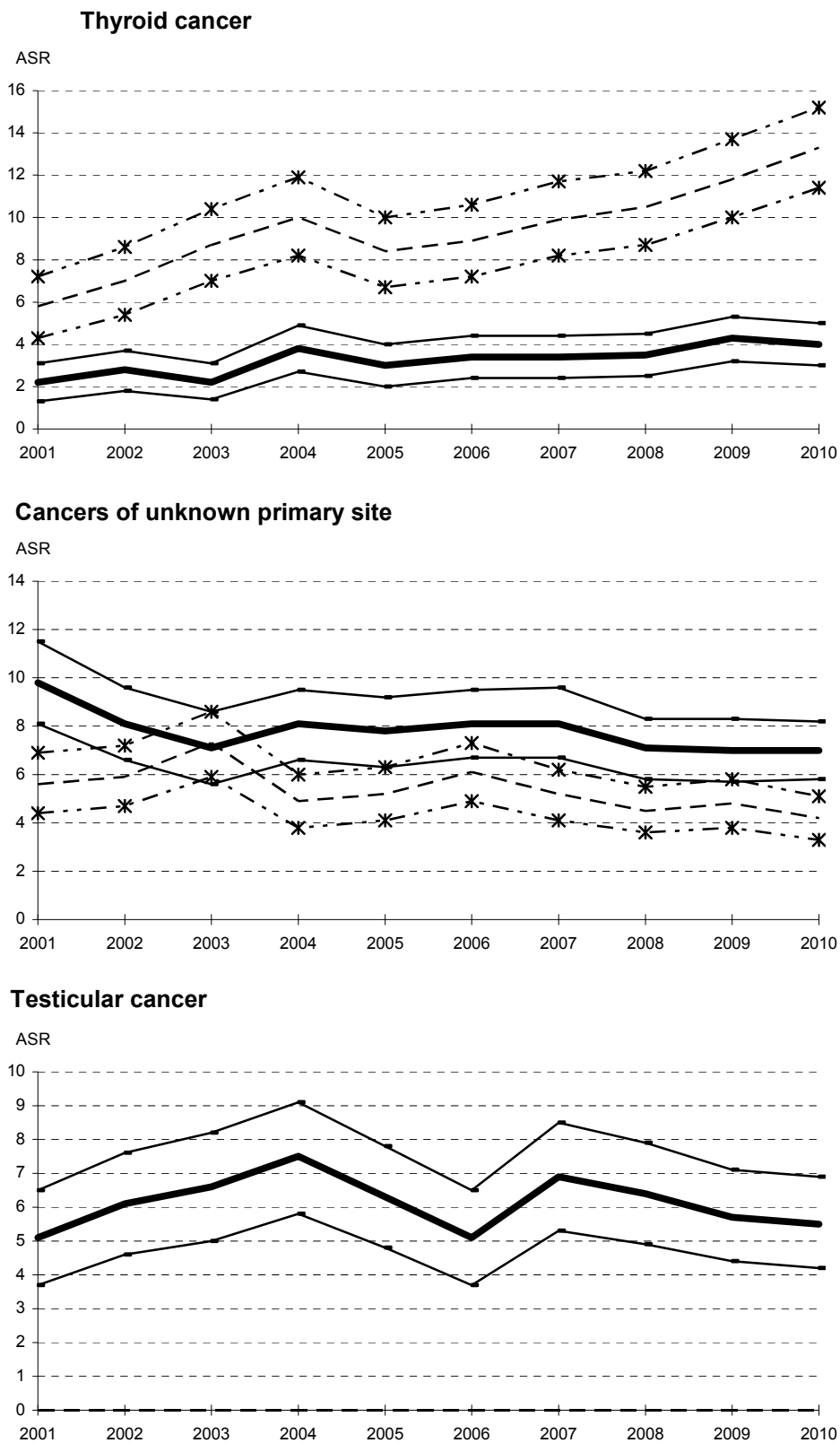


Figure 9 (cont.) Cancer incidence, WA, 2001-2010: trends for selected cancers



3. Cancer in Western Australia: Data and technical issues

3.1 Basis of diagnosis

Cancers may be diagnosed by a variety of methods, and many methods may be used in the same case. Cancer registries generally record a “best basis of diagnosis” as a guide to the specificity and reliability of the information. Generally “microscopic” methods (histology, cytology, haematology) are regarded as most reliable as compared with clinical findings or imaging. Diagnoses based only on a death certificate (“DCO”) are not generally well-regarded (see below). The Registry also uses hospital discharge statistics (“Hospital Morbidity Data System”) to reduce letter-based enquiries and case note review, if data are consistent.

The contribution of the different methods is seen in Table 5, with over 94% of cases based on a specific pathology test. The common types of diagnosis least likely to be based on microscopic examination were primary liver cancers (64%), pancreatic cancer (69%) and cancers of unknown primary site (71%).

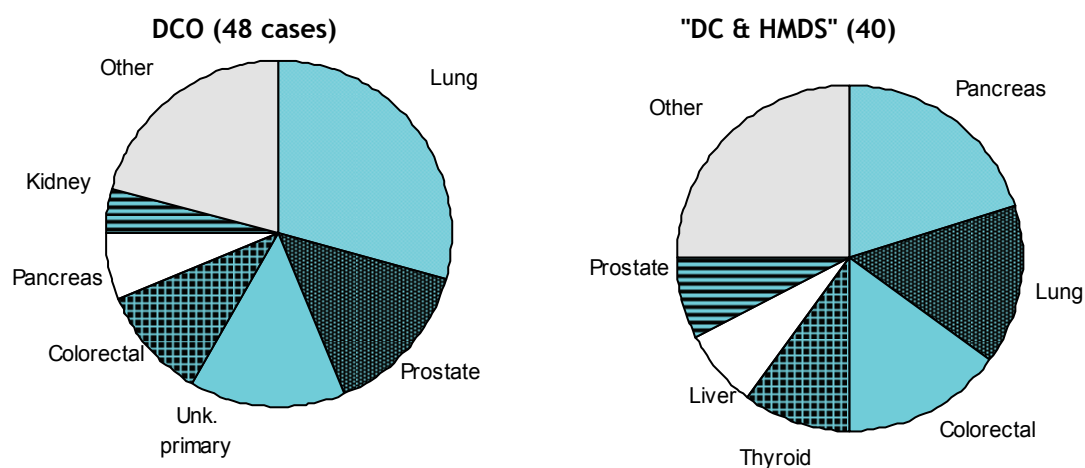
Table 4. Cancer in Western Australia, 2010: Diagnosis methods

Basis of diagnosis	Cases	%	Basis of diagnosis	Cases	%
Microscopic NOS	14	0.1	Surgery	7	0.1
Histology	9126	83.4	Necropsy	7	0.1
Cytology	1013	9.3	DCO	48	0.4
Haematology	182	1.7	DC & HMDS	40	0.4
Imaging	367	3.4	Unknown	44	0.4
Clinical	74	0.7			
Biochemical/Immunologic test	20	0.2	All "microscopic" bases	10335	94.5
			Total	10942	(100)

3.2 Death Certificate and Hospital Morbidity Data System cases

“Death certificate only” (DCO) cancer records are those based solely on a death notification’s “cause of death” text. In Western Australia, there were 48 DCO cancers recorded for 2010 (0.4% of all cases, similar to 2009). There were 40 “DC and HMDS” cases recorded for 2010 (Figure 10).

Figure 10. Death Certificate Only (DCO) and “DC & HMDS” cancers 2010: common types



Having a low proportion of DCO cases is widely regarded as an important index of data quality in a Cancer Registry. Although reliability and specificity concerns limit the reliance placed on the “DC & HMDS” records they are preferred over DCOs. The combined total of these two types of records - 0.8% - is an indicator of good quality in the Registry’s data collection by international standards.

3.3 “Non-counted” cancers

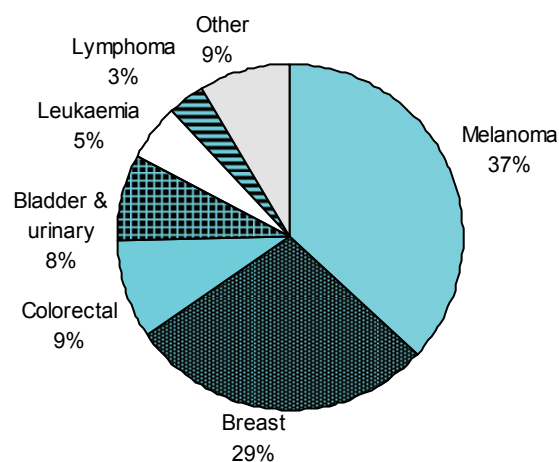
International standards for the reporting of cancer incidence dictate that new tumours should not be “counted” or reported in such statistics, if they represent a type that has previously been diagnosed in the same person, and this reduces the numbers of new cases that are reported. The “type” of cancer depends on a combination of its anatomical site and/or cell type and follows a set of rules incorporated into the Registry’s statistical reporting system; the source reference is available at the Internet URL http://www.iacr.com.fr/MPrules_july2004.pdf. As examples, a lung squamous cell carcinoma and a lung adenocarcinoma would both be counted; of two breast ductal carcinomas, only the first would be reported; but one would only count a non-Hodgkin lymphoma once in a person irrespective of location in the body.

What follows in practice is that the Registry reports incidence using these standard rules, but can supply data including all known separate tumour occurrences, as an estimate of disease burden and workforce requirement, rather than disease risk.

The cancers that most commonly occur more than once in a person are the skin cancers, breast cancer, bladder and other urinary tract transitional cell carcinomas, and those occurring in colorectal polyps; the most common types are shown in Figure 11. Distinct from these site-specific cancer types, the leukaemias shown are most usually excluded because of a prior diagnosis of a myelodysplastic syndrome, rather than because of a prior “leukaemia”.

The impact on incidence statistics if these additional tumours were counted, would be an increase of nearly 5% - so effective data linkage and de-duplication is required to ensure the comparability of Cancer Registry statistics worldwide.

Figure 11. “Non-counted” cancers, 2010: common types (500 cases)



3.4 Non-invasive neoplasms recorded

The Registry receives and records many reports of benign neoplasms, *in situ* neoplasms (neoplasms diagnosed at an early “pre-invasive” stage), and others of types whose malignant potential or behaviour is uncertain such as “borderline” ovarian tumours or carcinoid tumours.

Benign central nervous system (CNS) neoplasms and all *in situ* neoplasms except for SCC and BCC of the skin, have been notifiable conditions since 1996 however the “uncertain malignant potential” tumours have been made notifiable since 2011.

In situ breast tumours are low in number compared with invasive ones. However, for some *in situ* tumours, the number of cases rivals or exceeds (melanoma and cervix) the number of invasive cases defined as “cancers” and recorded elsewhere in this report (Table 5). Of the 44 “uncertain behaviour” large bowel tumours shown, 41 were carcinoid tumours; there were another 13 carcinoid tumours diagnosed in sites including lung, small bowel and stomach. (There were a further 55 malignant invasive carcinoid tumours reported, which are included under specific sites in the “Cancers” tables elsewhere.)

Table 5. Non-invasive neoplasms recorded in WA Cancer Registry, 2010

Type	Males	Females	All
Benign CNS neoplasms	29	79	108
"Uncertain behaviour" or borderline neoplasms			
Ovary	0	43	43
CNS	25	17	42
Large bowel	21	23	44
<i>In situ</i> neoplasms			
Melanoma (skin)	836	504	1340
Cervix	0	857	857
Bladder & urinary tract	440	130	570
Breast	<5	NR	259
Colorectal	33	24	57
In situ SCC or BCC skin	25	22	47
Non-melanoma (skin)	<5	<5	<5
Other	108	68	176

4. References

- 1 Threlfall TJ, Thompson JR (2011). *Cancer incidence and mortality in Western Australia, 2009*. Department of Health, Western Australia, Perth. Statistical series number 91.
- 2 Segi M (1960) *Cancer mortality for selected sites in 24 countries (1950-1957)*. Sendai, Japan, Tohoku University Press.
- 3 Population by age and sex. 2001 Census Edition - Final. Australian Bureau of Statistics, Canberra, cat. 3201.0
- 4 Kilfoy BA, Zheng T, Holford TR, Han X, Ward MH, et al. (2009) International patterns and trends in thyroid cancer incidence, 1973-2002. *Cancer Causes & Control* 20: 525-531.

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Note: Appendix 3A now contains an incidence data summary for the most common cancers on page A3-10.

Privacy: Application of a Divisional policy has led to the suppression of case counts between 1 and 4 inclusive (shown as “<5”) and associated percentages and age-specific rates (shown as “NR” for “not released”). Where NR is used in a case count cell, a number ≥ 5 has been suppressed to prevent calculation. Enquiries about the process and about access to the underlying specific information should be directed to the Registry for advice.

Appendix 1. About The Western Australian Cancer Registry

Appendix 1A. Overview and technical issues

History and role

The Western Australian Cancer Registry is a population-based cancer registry established in 1981. The Health (Notification of Cancer) Regulations 1981 require the reporting of cancers diagnosed by pathologists, haematologists and radiation oncologists; the current version can be found in **Appendix 2E**. The Registry was established in recognition of the potential importance of reliable population-based cancer data in the planning of services and in the prevention and treatment of cancer.

Surveillance of cancer extends beyond State and national boundaries and this Registry cooperates with other State registries and the Australian Institute of Health and Welfare (AIHW) who collate State information and manage the Australian Cancer Database in Canberra. Data are also provided to the International Agency for Research on Cancer in Lyon, France, for inclusion in Australian statistics published nationally and world-wide.

The Registry is a member of the Australasian Association of Cancer Registries (AACR) which includes all Territory and State cancer registries, and the International Association of Cancer Registries (IACR). The AACR meets regularly to discuss matters such as common coding systems, comparability of data between areas in Australia and involvement in Australia-wide cancer research projects.

Registry scope

The Western Australian Cancer Registry reports on cancers and other neoplasms diagnosed in persons while resident in Western Australia. A separate register is maintained for recording asbestos exposure and other history for all cases of mesothelioma. In practice, the Registry records available information about cancers diagnosed elsewhere, in Western Australians, as this is often vital to the interpretation of new reports or mortality information.

As in other Australian cancer registries, information concerning tumours diagnosed in Western Australia in persons ordinarily resident elsewhere in Australia, is sent to the relevant State or Territory cancer registry, and is not included in Western Australian incidence statistics.

Cancer deaths in current or former Western Australian residents are recorded when possible, regardless of place of death or address at diagnosis, to facilitate survival analysis. However, in routine tables of mortality, geographic location is based on place of residence at time of death rather than on the place of death. Accordingly, the Registry's mortality statistics routinely include only deaths, in Western Australia, of persons resident in Western Australia at the time. In contrast to incidence, mortality reports include deaths due to all non-melanoma skin cancers including BCC and SCC.

Legislative basis

The Registry acted with the delegated authority of the Executive Director of Public Health with respect to the Health (Notification of Cancer) Regulations 1981, until June 2011 when the new HEALTH (WESTERN AUSTRALIAN CANCER REGISTER) REGULATIONS 2011 took effect.

The Regulations require the notification of *in situ* neoplasms and all non-melanoma skin cancers other than basal cell and squamous cell carcinomas, as well as all invasive malignancies and a variety of other neoplasms (see **Appendix 2E**).

Sources of data

Most notifications are received from pathology laboratories, which supply pathology reports on paper or computer data files. The electronic notification system relies on the tumour codes or "notify Registry" flags generated by pathologists to select the reports which reach the Registry, and it is believed that this has enhanced the completeness of reporting from the larger hospital laboratories. Radiation oncologists also notify the Registry of patients treated for cancer.

In-house linkage routines are used to link pathology and mortality data files to the Registry to permit creation of new records, or the updating of date, place and cause of death information. Additional cancer registrations are obtained from the remaining (unmatched) mortality records after electronically scanning the written cause of death and other fields on a data file. Data are now obtained from the WA Registrar-General's Office via the Data Linkage Branch of the Population Health Division. Records are created on the Cancer Registry for persons with these previously unrecorded tumours, and efforts are then made to obtain independent verification of tumour details. Those for which no supporting information can be obtained after research are treated in subsequent reports as "death certificate only" (DCO) tumours.

Additional information including country of birth and Aboriginality or indigenous status, can often be obtained, from extracts of the W.A. Hospital Morbidity Data System (HMDS) files, or via on-line access to a Patient Master Index maintained in Perth Metropolitan Area government hospitals.

Data handling and maintenance

Since 2008 when a new SQL Server database was commissioned, Registry staff have converted all paper records into image files that are stored within the database; the process for historical information is now completed. This permits a limited number of users with limited access from remote sites to find all information without making enquiries of other staff, and frees Registry staff from the task of locating paper records for coding or review.

New registrations and updates are made on the new custom-designed database, which also manages and stores the case lists and correspondence associated with the "further enquiry" process. In general, cancer cases are recorded with one demographic record for each person with a separate, linked record for each tumour, each of which may have from one to many associated "notifications". Incomplete records, or those found to be inaccurate in the light of new information, are progressively updated, and the data continually enhanced until the time of any final update (such as when adding mortality information). Registry records that are duplicates of existing cases are now handled by cross-referencing to the "valid" case, rather than deletion, minimising the repetition of "detective" work if more information later comes to hand.

Statistics are produced from database extracts using the Registry's own incidence and mortality rates calculation system and a variety of other statistical and graphics software packages. Software for routine statistical reports is constantly being developed and upgraded to reflect changes in coding systems, geographical area boundaries and the types of information requests received. The vast majority of tables in this report are created directly from this in-house software.

Where resources permit, customised tabulations using similar area and age group subdivisions are available to anyone who makes a request.

Coding practices

General

The coding of tumour data is based on the International Classification of Diseases for Oncology (ICD-O) which originated as an extension of Chapter II (Neoplasms) of the Ninth Revision of the International Classification of Diseases (ICD-9); which is superseded by ICD-10.

ICD-O permits separate coding of topography (“site”), morphology (“tissue”) and behaviour, and thus allows a more comprehensive characterisation of some tumours than the single-code ICD-9 and ICD-10 classification system. Topography and morphology codes in this report are from ICD-O third edition (2000) (ICD-O-3),^a following the successful conversion of software, and translation of historical data in 2003.

In general, for incidence reporting, leukaemias, lymphomas and other lymphohaematopoietic malignancies are grouped on the basis of morphology codes, as for cutaneous melanoma, Kaposi sarcoma and mesothelioma, while others are tabulated on the basis of topography, or location. This Registry uses behaviour code “6” to indicate tumours of unknown primary site.

For the sake of consistency in reporting of incidence and mortality data, causes of death are coded to morphology (lymphohaematopoietic malignancies, Kaposi sarcoma and mesothelioma) and topography (others). Melanoma deaths are coded to the ICD-10 code, C43x, to distinguish them from deaths due to non-melanoma skin cancers (C44x). In accordance with IACR guidelines adopted by AACR, melanomas of unknown primary site are treated as primary skin melanoma for tabulation purposes.

Diagnoses in non-Western Australian residents are excluded from incidence reporting routines but are recorded for reference. A system of ‘aliasing’ duplicate or otherwise invalid records allows ongoing reconciliation of old and current data, necessary for follow-up studies.

Cancer Registry mortality reporting has been based on death certificate coding performed within the Registry since 1990. Reconciliation with coding by the Australian Bureau of Statistics was once a useful monthly process but ABS has failed to support this since 2005. This exchange was extremely important, as annual ABS-coded mortality files are normally not released until well into the year following death, which is, in some cases, a delay of almost 2 years.

Multiple tumours

Two or more discrete tumours of different (3-character) sites in any individual are counted separately for the purposes of incidence statistics. However, in accordance with international practice, similar tumours arising in sites coded with the same first three characters are counted as one.

This, in effect, means that a person who has two similar tumours diagnosed, even many years apart, is reported only once in incidence statistics. This applies even when tumours arise in paired organs, e.g. lung or breast and are regarded as truly separate, unless the tumour types are different enough to permit both to be counted. Groups of types considered to be different, for the purposes of allowing the counting of more than one tumour of the same “site”, are based on an ICD-O-3-based table as promulgated by the International Association of Cancer Registries (refer to http://www.iacr.com.fr/MPrules_july2004.pdf). Using these rules, for example, a squamous cell carcinoma of the lung and an adenocarcinoma of the lung arising at any time will both be counted in incidence statistics. Lymphohaematopoietic malignancies are treated

^a World Health Organization (2000) *ICD-O: International classification of diseases for oncology* (Third Edition). WHO, Geneva.

differently, being tabulated by morphology, and their discovery in a particular site does not preclude the counting of different types of neoplasms in the same site. The urinary tract is treated as a special case of an “extended site”, whereby multiple transitional cell carcinomas of sites C65x to C68x , **including** bladder (C67x), are counted only once in a person.

While these practices govern the reporting of cancers for incidence statistics in accordance with international practice, it is an inescapable conclusion that multiple tumours have separate effects on health, and the best illustration of this is in relation to survival. Cases occur in which a person has a breast carcinoma, and is treated and considered cured, only to die from a second primary breast carcinoma arising many years later. Measuring survival time from the first tumour diagnosis (the “incident” tumour) and ignoring the presence of the second, can lead to a simplistic analysis which falsely overestimates cure rates. To allow better analysis, the Registry now separately records all tumours, so that statistics counting tumours, rather than cases, can be provided if required.

This Report uses the “multiple-primary” rules based on the ICD-O-3 classification and tumour groupings will differ slightly from those used in some previous publications (see Appendix 2F).

“Death certificate only” cancers

Death certificate only (DCO) cancers are those for which no information other than a death certificate is available. From mortality data, records of previously unknown tumours are created on the Cancer Registry, and efforts are made to obtain independent verification of details. Those for which no supporting information can be obtained after research are treated in subsequent reports as “death certificate only” (DCO) tumours. Up to 60 tumours are followed up in this way each month, and supporting information is eventually obtained for the vast majority. Very few tumour records remain in this category. Tumours of unknown primary site have been consistently more common among DCO cases than among cancers in general.

To achieve such a low proportion of DCO cases, reporting of statistics must be delayed until most follow-up is complete. Rapid access to death notifications assists the Registry to commence enquiries while information is still accessible. Due to workload issues, DCO cases are now been treated as “resolved” if a compatible hospital discharge record is found, and a special Basis of Diagnosis code of “H” is used.

Lymphomas

ICD-O codes are used for coding lymphomas, however several “in-house” morphology codes are used when the best ICD-O code is too general; these are shown in the footnote to the table in Appendix 2F(b). These codes are converted, when contributing data to others, to the relevant less-specific ICD-O code.

Basis of diagnosis

Most notifications result from diagnoses made on the basis of tissue examination (histology, cytology, haematology), and these are generally regarded as the most reliable. Their percentage of the total cases is shown in the “TissDx” column of some tables in this report.

Additional data for specific tumour types

A number of additional data items are collected for some tumours. For primary invasive breast cancer, the Registry records maximum tumour diameter, number of axillary lymph nodes biopsied and the number affected by cancer, whether a tumour is multi-centric, and whether there is associated ductal carcinoma in situ (DCIS) outside the margins of the invasive tumour. For primary skin melanoma, the maximum thickness of the tumour and Clark’s level

are recorded (Breslow 1970^a; Clark *et al* 1975^b), and are used in many of this Registry's reports.

Quality assurance

Data quality is assessed in various ways, both continuous and occasional. On a continuous basis, all coding on pathology reports, and the details entered on the database, are checked by a second member of the Registry staff, and queries are referred to a Registry medical officer. In addition, the Registry database system incorporates various "unusual case" warnings, based on dates, sex, and age. A case-flagging system, based on site and tissue combinations and the rules encapsulated in a modified version of IARC's "Check" routine, warns of unusual records. A verification code is assigned to records which do not fit the "rules" but which are believed to be correctly coded.

Available external indicators of Registry completeness are all potentially biased in favour of cancers which are more often serious, causing hospitalisation or death. Reports from radiation oncologists serve as a useful avenue for checking receipt of reports based on previous pathology specimens, and enables recording of a small number of cancers which were not diagnosed histologically. The Hospital Morbidity Data System, which records details of all hospitalisations in Western Australia, is another potential source of information regarding Registry completeness.

If trends in incidence, mortality and migration are constant, then the ratio of the number of new cancer diagnoses registered to the number of cancer deaths (mortality to incidence ratio) serves as a crude indicator of completeness.

Uses of Cancer Registry data

Non-identifying data are available for release to interested parties, subject to time constraints, as data files or as finished tables and figures. Only data which do not identify any patient, care provider or institution can be treated in this manner. Release of named information is strictly controlled (see "Confidentiality guidelines") and data can only be released to persons other than the original providers (or other clinicians involved in ongoing care of the individual) with personal consent, or a formal approval from the Department of Health (WA)'s Human Research Ethics Committee.

Data are used in a wide variety of research projects, including the recruitment of subjects for descriptive and case-control studies. Specific requests have included data on incidence in specific areas, cancer deaths by location and institution type, melanoma levels and depths, mesothelioma deaths and occupation, teenage cancers, myeloma survival and ocular melanoma. Registry data have been used in a number of studies of cancer incidence, and in a number of national projects, most notably those commissioned by the National Breast Cancer Centre (now part of Cancer Australia).

In addition to technical and statistical enquiries, the Registry receives general and personal enquiries regarding cancer services and medical problems; these are referred when appropriate to other agencies and treating physicians.

The Registry provides support for four hospital-based cancer registries (HBCRs). In the hospital setting, with clinical and pathological staging and treatment data, the availability of mortality data facilitates the assessment of outcomes using survival analysis.

^a Breslow A (1970) Thickness, cross-sectional area and depth of invasion in the prognosis of cutaneous melanoma. *Ann Surg* **172**, 902-908

^b Clark WH *et al* (1975) The developmental biology of primary cutaneous malignant melanoma. *Seminars in Oncology* **2**, 83.

Appendix 1B. Current issues

Registry staffing and workload

In 2003, a long process resulted in reclassification of "Clerical Officers" to a higher level, redesignated "Data Quality Officers". In 2011, one position was converted to a Data Quality Coordinator role. A clerical officer has been temporarily attached to the Registry and the resources now available to service the needs of a population of 2 million people now include -

Principal Medical Officer/Manager	1.0 fte
Medical Officer/coding adviser	0.2 fte
Data Quality Coordinator	1.0 fte
Data Quality Officers	2.5 fte
Clerical officer (data handling)	1.0 fte
Mesothelioma research officer	0.25 fte
Analyst/programmer	1.0 fte

Additional resources used include financial/ Human Resources services and Epidemiology Branch advice on some statistical issues. However all reports such as this are produced primarily within the Registry itself.

Workload is not adequately represented by reported "cancer" totals. In 2010, there were 10942 invasive cancer cases as mentioned earlier in this report. However, in the same year there were 42288 "notifications" handled (pathology reports, letters, case notes and other records), 16827 tumour records created, and 15298 other tumour records were edited in some way by staff.

Increases in these workload estimates exceed population growth rates, and underscore the need to properly resource disease registries and ensure a continued capacity to deal with the demands of health service planners, researchers, students and the public.

Assessment of current notification system and Regulations

Until 2011, Western Australia was the only Australian State with no legal requirement for the direct notification of cancer diagnoses by hospitals; there is consequently some incompleteness in WA statistics for some cancer types. As a result of two successful "Graduate Officer" placement requests made under a new Department of Health program in 2004, a review and update of a previous assessment of the opportunities for more complete notification based on hospital data for non-pathologically diagnosed cancers, was completed and is summarised in *Cancer incidence and mortality in Western Australia, 2005*.^a

These findings were published in support of a process of seeking changes to the Health (Notification of Cancer) Regulations 1981 so as to require hospital notification, among other things. Current data systems cannot be used satisfactorily for this purpose as there are 3 key data items - basis of diagnosis, date of diagnosis and place of residence at diagnosis - that are not included. The Registry has participated in consultations concerning a replacement of the (public) hospital Patient Administration System (PAS), and a cancer notification module from the currently-favoured replacement system has been demonstrated. New Regulations are now in place, but effective changes in some aspects of notification must await changes in hospital information systems.

^aThrelfall TJ, Thompson JR (2007). Cancer incidence and mortality in Western Australia, 2005. Department of Health, Western Australia, Perth. Statistical Series Number 81.

Appendix 2. Technical and miscellaneous information

Appendix 2A. Glossary

General

AAR	Age-adjusted rate - rate resulting from age-standardisation using only a subset of the entire age range for cases and population, e.g. 0 - 15 years.
ABS	Australian Bureau of Statistics
ASR	Age-standardised rate per 100,000 persons ("World standard" population) (Segi 1960) ^a
ASPR	Age-specific rate per 100,000 persons in a specified age range
BCC	Basal cell carcinoma
CNS	Central Nervous system (meninges, brain, spinal cord, cranial nerves and pituitary gland)
DCO	Death certificate only
d/o	disorder
ICD-O	International Classification of Diseases for Oncology
LHN	Lymphohaematopoietic neoplasms (mainly lymphomas, leukaemias and myeloma)
LR	Lifetime (cumulative) risk (to a particular age, usually 75 years)
NMSC	Non-melanoma skin cancer
NOS	Not otherwise specified
PYLL	Person-years of life lost (before a particular age, usually 75 years)
SCC	Squamous cell carcinoma
SD	Standard deviation
U/S	Unspecified

Additional terms used in headings or cells of incidence and mortality tables:

95%c.i.	Statistical 95% confidence interval
Crude	Crude rate per 100,000 persons
Cum inc	Cumulative incidence (%)(before a particular age, usually 75 years)
Risk	Lifetime risk (usually to age 75; 1 in n). In some tables, "-" indicates no data, "*" indicates a risk of less than 1 in 1,000.
TD%	Percentage of diagnoses made on basis of tissue examination (histology, haematology or cytology).
<5	Case count between 1 and 4 inclusive
NR	Not Reported - an ASPR or a percentage based on a cell "<5"; or a case count suppressed so as to prevent calculation.

^a Segi M (1960) *Cancer mortality for selected sites in 24 countries (1950-1957)*. Sendai, Japan, Tohoku University Press.

Appendix 2B. Statistical methods and formulae

Age groups

The basis for most statistics is a summation of cases by five-year age groups. Age groups are expressed in whole years, i.e. “10-14” means 10.0 to 14.99... years.

Rates

Rates in this report are calculated separately for males and females and are expressed as cases per 100,000 person-years. (If one year's data are being analysed, this is equivalent to n cases per 100,000 population for that year.)

Age-specific rates are based on five-year age intervals and are calculated by dividing the numbers of cases by the population of the same sex and age group, over the relevant period.

Crude rates are calculated simply as the total cases divided by the total population over a wide age range; they are not suitable as a basis for comparison of rates in different areas if the age-structures of the populations differ.

Age-standardised rates (ASR in Tables) are calculated by the direct method^a and represent a summation of weighted age-specific rates (weighting being determined by the relative proportion of the population in each age group compared with the proportion in the World Standard Population^b). Weightings by other population standards can be used if requested.

The **standard deviation**, or Estimated Standard Error (ESE) is used as a measure of variability for rates in tables; an approximate 95% confidence interval for a rate is (rate \pm 1.96 ESE).

Formulae:

$$\text{ASR} = 10^5 \times \sum_i r_i \times w_i; \quad \text{ESE} = 10^5 / W \times [\sum_i \{ r_i \times (1 - r_i) \times w_i^2 / n_i \}]^{1/2},$$

where w_i is the World Standard Population^b for the i th age group, $W = \sum_i w_i$ and \sum_i denotes summation over all (relevant) age groups.

Subsets of the full age range: where a subset of age groups is considered, the term **age-adjusted rate** is used instead of ASR, to indicate that standardisation has taken only the age groups of interest into account for both cases and population.

Comparison of rates between different areas may be done using indirect standardisation. In this process, for example, the State population and age-specific rates are used to calculate an expected number of cases in different areas, based on their populations; the observed and expected numbers are compared using the Standardised Incidence (or Mortality) Ratio and a 95% confidence interval.

^a Rothman KJ (1986) *Modern epidemiology*. Little, Brown & Company, Boston.

^b Segi M (1960) *Cancer mortality for selected sites in 24 countries (1950-1957)*. Sendai, Japan, Tohoku University Press.

Cumulative Incidence and Cumulative Risk

The **cumulative incidence** of a condition (at a given age) is a measure of the proportion of all persons who have, by that age, been affected by the condition; the Registry calculates this for cancer incidence, and death due to cancer. Cumulative rates are calculated by summing the age-specific rates for specified five year age groups, and are expressed as percentages unless otherwise noted.

In general, a **risk** is derived from the cumulative rate and is interpreted as a “1 in *n*” chance of developing the disease, whereas cumulative rates are commonly presented as percentages affected. In Registry reports, risk is usually presented as cumulative risk derived from the cumulative risk for age groups 0-4 to 70-74. However, in tables restricted to age subgroups, risk is derived from the cumulative rate calculated for the age groups listed - e.g. 15-39 years, 40-64 years and 65 years and older.

The method for risk calculations assumes that the risks at the time of estimation remain the same throughout life, and does not account for the effects of death from other causes or interventions which may reduce the chances of a cancer diagnosis.

Formulae:

The formulae for *CI* and *risk* are:

$$CI = \sum_i r_i \times 5 ; \quad Risk = 1 / (1 - e^{-CI}) .$$

Person years of life lost

Person-years of life lost (PYLL) is an estimate of the number of years of life lost due to specific causes of death, and is calculated up to age 75 years, as an index of premature death. The calculations rely on the use of all-causes mortality data for the whole of Western Australia using the methods of Hakulinen and Teppo as presented in Holman *et al.* ^a

In this report the PYLL is calculated for age 0 to 74 years as a measure of premature death.

Formulae:

For each cause of death, the PYLL lost for the *i*th five-year age group is given by:

$$S_i = 5 \times \{ \sum_{j=0, \dots, i-1} \{ d_j \times p_j^{1/2} \times P_{j+1,i} \times [a_i \times (1 - p_i) + p_i] + d_i \times (1 - a_i) \times (1 + p_i^{1/2}) / 2 \} \}$$

where a_i is the proportion of the *i*th five-year interval that a person dying during that interval lives, on average. The values used are 0.09, 0.46, 0.54, 0.57, 0.49, 0.50, 0.52, 0.54, 0.54, 0.54, 0.53, 0.52, 0.52, 0.52, 0.51, 0.51, 0.48, 0.45 for age groups 0-4, 5-9, ... ,85+, d_i is the number of deaths from the cause of death of interest in the *i*th age group, p_i is the probability of surviving the *i*th age interval after eliminating the cause of death of interest, and

$$P_{j+1,i} = \prod_{k=j+1, \dots, i-1} p_k \quad \text{for } j+1 < i, \quad \text{or } 1 \quad \text{for } j+1 = i .$$

The quantity p_i is calculated as -

$$p_i = \{ (1 - 5 \times a_i \times r_i) / (1 + 5 \times (1 - a_i) \times r_i) \}^{(D_i - d_i) / D_i}$$

where r_i is the death rate and D_i is the total number of deaths for the *i*th age group.

^a Holman CDJ, Hatton WM, Armstrong BK, English DR (1987) *Cancer mortality trends in Australia, volume II, 1910 - 1984*. Health Department of Western Australia, Perth, Occasional Paper number 18.

Appendix 2C. Populations and geographic areas

The following WA population data were used for calculation of 2010 rates in this report

Age	Males	(%)	Females	(%)	Total	(%)
0-4	79071	6.8	75309	6.7	154380	6.7
5-9	73516	6.3	69045	6.1	142561	6.2
10-14	76992	6.6	71885	6.4	148877	6.5
15-19	81385	7.0	75897	6.7	157282	6.9
20-24	90412	7.8	82027	7.3	172439	7.5
25-29	91635	7.9	82309	7.3	173944	7.6
30-34	81323	7.0	77823	6.9	159146	6.9
35-39	85113	7.3	82740	7.3	167853	7.3
40-44	84241	7.2	81419	7.2	165660	7.2
45-49	83232	7.2	81816	7.2	165048	7.2
50-54	76817	6.6	76026	6.7	152843	6.7
55-59	68570	5.9	67844	6.0	136414	5.9
60-64	61410	5.3	58930	5.2	120340	5.2
65-69	43960	3.8	43122	3.8	87082	3.8
70-74	32855	2.8	34125	3.0	66980	2.9
75-79	23672	2.0	26666	2.4	50338	2.2
80-84	16771	1.4	21586	1.9	38357	1.7
85 +	12038	1.0	21928	1.9	33966	1.5
TOTAL	1163013	(100)	1130497	(100)	2293510	(100)

(Data from Australian Bureau of Statistics as collated by Performance Activity & Quality Division, Department of Health, and used for calculation of rates in this Report.)

The Department of Health's area of responsibility is administered through two Area Health Services (AHS) (metropolitan) and the WA Country Health Service (WACHS), comprising seven Regions. Overall, the area is divided into 34 Health Districts (HD), each lying entirely within an Area Health Service (AHS) or Health Region (HR). Areas may not match "current" arrangements at any given point in time however data files and population files are synchronised to ensure accurate calculation of incidence and mortality rates in this report.

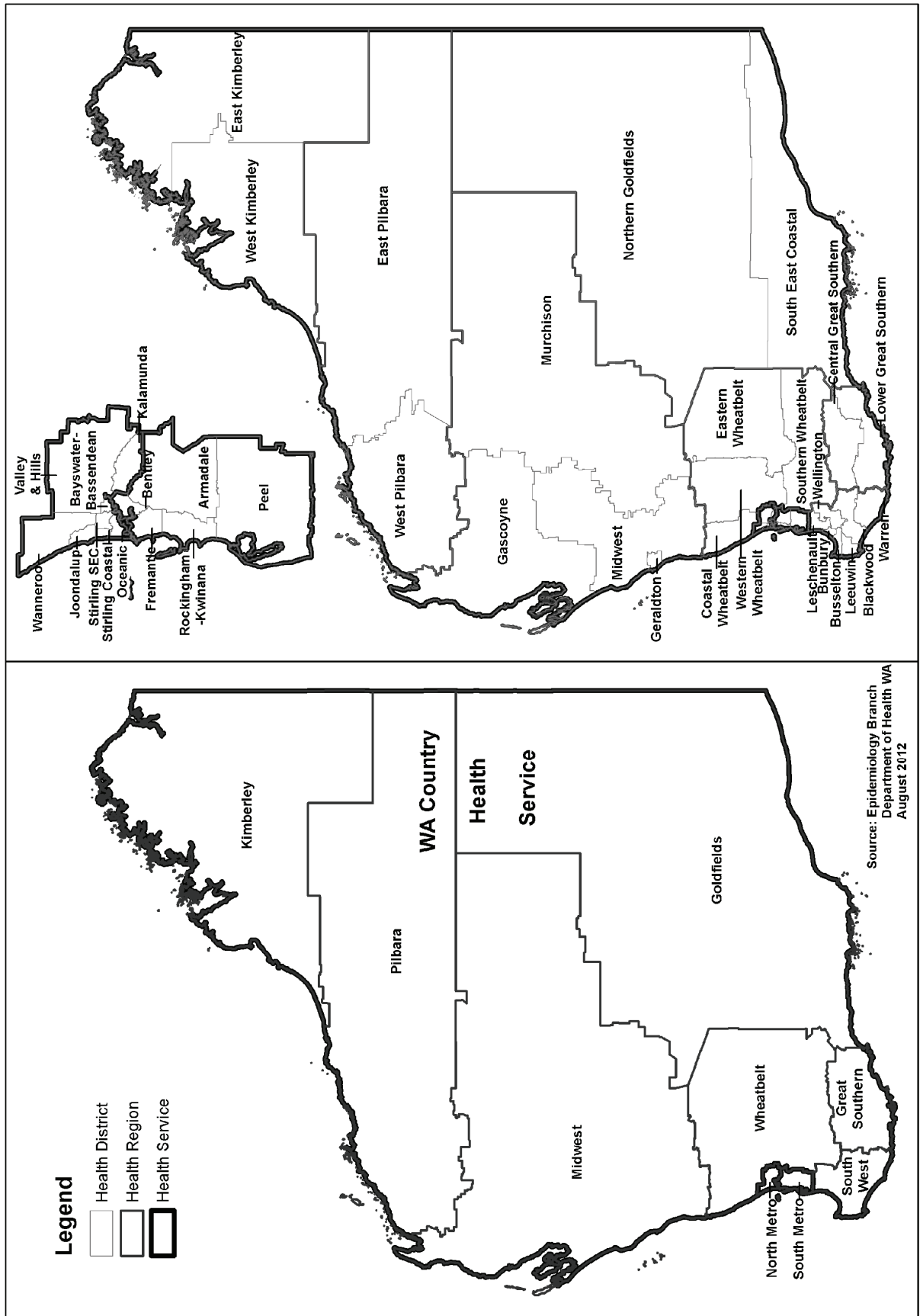
The table and maps below should assist comparison of boundaries and area names with those used in previous reports.

Health District composition of Area Health Services and Regions as used for this Report

CHS Kimberley HR	CHS Goldfields HR	North Metro AHS
East Kimberley HD	Northern Goldfields HD	NMAHS Bayswater-Bassendean HD
West Kimberley HD	South East Coastal HD	NMAHS Kalamunda HD
CHS Pilbara HR	CHS Great Southern HR	NMAHS Oceanic HD
East Pilbara HD	Central Great Southern HD	NMAHS Stirling Coastal HD
West Pilbara HD	Lower Great Southern HD	NMAHS Stirling SE Coastal HD
CHS Midwest HR	CHS South West HR	NMAHS Valley and Hills HD
Gascoyne HD	Blackwood HD	NMAHS Wanneroo HD
Geraldton HD	Bunbury HD	
Midwest HD	Busselton HD	South Metro AHS
Murchison HD	Leeuwin HD	SMAHS Armadale HD
CHS Wheatbelt HR	Leschenault HD	SMAHS Bentley HD
Coastal Wheatbelt HD	Warren HD	SMAHS Fremantle HD
Eastern Wheatbelt HD	Wellington HD	SMAHS Peel HD
Southern Wheatbelt HD		SMAHS Rockingham-Kwinana HD
Western Wheatbelt HD		

* CHS - Country Health Service; AHS - Area Health Service

WA Area Health Service, Region and Health District boundaries



Appendix 2D. Access to Registry information

Release of data may occur at a number of levels:

Summarised statistical information containing no means of identifying any individual patient, doctor, laboratory or hospital will be available for the purposes of general information and education.

More detailed statistical information, which may include “unit record” data files for analysis, but containing no means of identifying any individual patient, doctor, laboratory or hospital, may be released by the Principal Medical Officer.

Identified information will normally be made available to relevant Australian State or Territory Cancer Registries and to the Australian Institute of Health and Welfare, for the purposes of improving data quality and consistency. Data are released to the AIHW subject to a provision that any use of such identified data for other purposes is to be referred to this Registry for approval.

Special information pertaining to identified patients of a particular hospital or doctor may be released by the Principal Medical Officer to the Medical Superintendent of the hospital, or to the doctor, in response to a written request; such requests may be referred to the Department of Health (Western Australia)'s Human Research Ethics Committee (HREC) if there is concern regarding the identification of individual service providers.

Applications for further information required for specific areas of research will be referred to the HREC which, subject to formal application, may approve the release of identified information to researchers.

The objectives and functions of the HREC include the following key points -

Objectives -

- Promote the ethical use of health information.
- Promote ethical standards of human research.
- Protect the welfare, rights and dignity of individuals.
- Facilitate ethical research through efficient and effective review processes.

Functions -

- To provide independent, competent and timely ethical review of projects involving the use and disclosure of personal health information and other research projects with respect to their ethical acceptability.
- To review projects involving personal health information and other research projects in accordance with the National Statement on Ethical Conduct in Human Research (National Statement) and the DOH Practice Code for the Use of Personal Health Information.
- To review projects requiring the use and disclosure of personal health information without consent.

The Committee's details and relevant documentation may be found at <http://www.health.wa.gov.au/healthdata/HREC/index.cfm>.

Appendix 2F. Cancer codes

(a) ICD-O Site codes

Codes(1)	Site/Topography	Codes	Site/Topography
C00 - C06	Lip, gum & mouth (excludes C01-C02)	C49	Connective, subcutaneous & other soft tissues
C01 - C02	Tongue	C50	Breast
C07	Parotid gland	C51	Vulva
C08	Salivary glands	C52	Vagina
C09 - C14	Pharynx (excludes C11)	C53	Cervix uteri
C11	Nasopharynx	C54	Corpus uteri (Uterus)
C15	Oesophagus	C55	Uterus, NOS (rarely used)
C16	Stomach	C56	Ovary
C17	Small intestine	C57	Uterine adnexa & other fem. genital
C18	Colon	C58	Placenta
C19 - C20	Rectosigmoid junction & rectum	C60	Penis
C21	Anus	C61	Prostate gland
C22	Liver & intrahepatic bile ducts	C62	Testis
C23 - C24	Gallbladder & bile ducts	C63	Male genital, other
C25	Pancreas	C64	Kidney (excludes renal pelvis C65)
C30 - C31	Nasal cavity & sinuses, middle & inner ear	C65 - C68	Bladder & urinary tract
C32	Larynx	C69	Eye & lacrimal gland
C33 - C34	Lung, bronchus & trachea	C70	Meninges (cerebral & spinal)
C37	Thymus	C71	Brain
C38	Pleura, heart & mediastinum	C72	Spinal cord & cranial nerves
C40 - C41	Bones, joints & articular cartilages	C73	Thyroid gland
C44	Skin	C74	Adrenal gland
C47	Nervous system, peripheral & autonomic	C75	Endocrine glands, other
C48	Retroperitoneum and peritoneum	C80	Unknown primary site

Notes: (1) Only 1st 3 characters shown. Groupings based on IARC rules governing the reporting of incident cancers for ICDO-3. Using these same rules, non-lymphohaematopoietic neoplasms of primary sites reported as C26 (Intestinal tract NOS), C39 (respiratory tract ill-defined / NOS), C42 (haematopoietic system), C76 (large body regions NOS) and C77 (lymph nodes) are tabulated as cancers of unknown primary site.

(b) Morphology code groups for lymphohaematopoietic malignancies

The tabulation scheme for lymphohaematopoietic neoplasms (LHNs) used in previous WACR reports was based on a combination of groupings used in ICD-O, ICD9 and ICD10, which reflected, to varying degrees, previous well-accepted classification schemes such as the REAL and the Working Formulation. Increasingly, classification of such tumours as used by pathologists and clinicians has changed, and older headings have become somewhat irrelevant to modern medical practice.

The tabulation groupings used in this report are based on those used in the ICD-O-3 classification, which has been influenced by the WHO Classification of Haematopoietic and Lymphoid Neoplasms (2001). In the current report, group headings still retain terms such as lymphoma and leukaemia, for the sake of familiarity. While these names remain in the WHO scheme for individual conditions, group headings have in many cases been replaced by less-specific terms such as "B-Cell neoplasms" and "T-cell neoplasms" which may be unfamiliar to some users of Cancer Registry data. Depending on developments in this area (and on decisions made by other Registries, and by others who are concerned that cancer classification should be compatible with non-cancer disease classifications using ICD10), future reports may eventually follow the WHO classification scheme.

Since 2003, some conditions previously not regarded as malignant (e.g. polycythaemia and myelodysplastic diseases) are now included as "cancers".

Revised multi-level tabulation scheme for reporting of malignant lymphohaematopoietic neoplasms (WACR 2003, updated 2011)

	WACR code	ICD-O-3 M codes
1 All lymphomas	Y**	
1a Lymphomas, NOS/unclassifiable	YUC	9590
1b Hodgkin lymphoma	YHO	9650-9667
1c All NHL	YN*	
1c1 NHL, mature B Cell	YNB	9670-9671, 9673, 9675, 9678-9680, 9684, 9687, 9689-9691, 9695, 9698-9699, 9766
1c2 NHL, mature T / NK cell	YNT	9700-9702, 9705, 9708-9709, 9714, 9716, 9717-9719
1c3 NHL, precursor cell lymphoblastic	YNP	9727-9729
1c4 NHL, other / unclassifiable	YNO	9591, 9596-9599*
1c1x NHL, Burkitt (<i>subset of 1c1</i>)	YNBB	9687
2 Myeloma/Plasma Cell tumours	P*	9731-9734
3 All leukaemias	L**	
3a Leukaemias, NOS/unclassifiable	LUC	9800-9801, 9805
3b Leukaemias, lymphoid, all	LL*	
3b1 Leukaemias, lymphoid, acute	LLA	9836-9837
3b2 Leukaemias, lymphoid, chronic	LLC	9823
3b3 Leukaemias, lymphoid, other/NOS	LLO	9820, 9826, 9827, 9831-9834
3c Leukaemias, myeloid, all	LM*	
3c1 Leukaemias, myeloid, acute	LMA	9840, 9861, 9866-9867, 9870-9874, 9891, 9895-9897, 9910, 9920, 9930-9931
3c2 Leukaemias, myeloid, chronic	LMC	9863, 9875-9876
3c3 Leukaemias, myeloid, other/NOS	LMO	9860
3d Other leukaemias	LOT	9940, 9945-9946, 9948
4 Other lymphohaematopoietic malignancies		
4a Myelodysplastic diseases, all	HM*	
4a1 Refractory anaemias/cytopaenias	HMR	9980-9985
4a2 Myelodysplastic syndromes	HMS	9986-9989
4b Chronic myeloproliferative diseases, all	HC*	
4b1 Chronic MPD, NOS	HCX	9960
4b2 Polycythaemia rubra vera	HCP	9950
4b3 Myelofibrosis/sclerosis	HCS	9961
4b4 Other chronic MPDs	HCO	9962-9964
4c Other immunoproliferative malignancies	HI*	
4c1 Mast cell tumours	HIM	9740-9742
4c2 Malignant histiocytic/dendritic cell neoplasms	HIH	9750, 9754-9758
4c3 Other & unspecified immunoproliferative neoplasms	HII	9760-9764

*9597, *9598 and *9599 are WACR codes for "NOS" NHL which are able to be grouped as low, intermediate or high grade respectively but which could only be otherwise placed in the ICD-O classification as code 9591.

Appendix 2G. WACR publications

Note: It is strongly recommended that retrospective studies utilise time-series that have been produced using updated versions of historical data, available from the Registry; and that figures from old reports not be used for such purposes. However, various topics of interest may be found in previous publications listed here.

FitzGerald P, Thomson N and Thompson J (1994) *Cancer incidence and mortality in Western Australia 1991*. Health Department of Western Australia, Perth, Statistical Series number 39.

Thompson J, FitzGerald P (1995) *Childhood cancer incidence, mortality and survival in Western Australia 1982-1991*. Health Statistics Branch, Health Department of Western Australia, Perth.

Threlfall TJ, Whitfort MJ, Thompson JR (1996) *Cancer incidence and mortality in Western Australia, 1992-1994*. Health Department of Western Australia, Perth, Statistical Series number 45.

Threlfall T, Morgan A (1996) *Malignant mesothelioma in Western Australia, 1960 to 1994*. Health Department of Western Australia, Perth, Statistical Series number 46.

Threlfall TJ (1997) *Cancer incidence and mortality projections for Western Australia, 1996-2001*. Health Department of Western Australia, Perth, Statistical Series number 50.

Threlfall TJ, Thompson JR (1997) *Cancer incidence and mortality in Western Australia, 1995*. Health Department of Western Australia, Perth, Statistical Series number 51.

Threlfall TJ, Thompson JR (1998) *Cancer incidence and mortality in Western Australia, 1996*. Health Department of Western Australia, Perth, Statistical Series number 55.

Threlfall TJ, Thompson JR (1999) *Cancer incidence and mortality in Western Australia, 1997*. Health Department of Western Australia, Perth, Statistical Series number 57.

Threlfall TJ, Brameld K (2000) *Cancer survival in Western Australian residents, 1982-1997*. Health Department of Western Australia, Perth, Statistical Series number 60.

Threlfall TJ, Thompson JR (2000) *Cancer incidence and mortality in Western Australia, 1998*. Health Department of Western Australia, Perth, Statistical Series number 61.

Threlfall TJ, Thompson JR (2002) *Cancer incidence and mortality in Western Australia, 1999 and 2000*. Health Department of Western Australia, Perth, Statistical Series number 65.

Threlfall TJ, Thompson JR (2003) *Cancer incidence and mortality in Western Australia, 2001*. Health Department of Western Australia, Perth, Statistical Series number 68.

Threlfall TJ, Thompson JR (2004) *Cancer incidence and mortality in Western Australia, 2002*. Department of Health, Western Australia, Perth. Statistical series number 71.

Threlfall TJ, Thompson JR, Olsen N (2005). *Cancer in Western Australia: Incidence and mortality 2003 and Mesothelioma 1960-2003*. Department of Health, Western Australia, Perth. Statistical series number 74.

Threlfall TJ, Thompson JR (2006). *Cancer incidence and mortality in Western Australia, 2004*. Department of Health, Western Australia, Perth. Statistical series number 76.

Threlfall TJ, Thompson JR (2007). *Cancer incidence and mortality in Western Australia, 2005*. Department of Health, Western Australia, Perth. Statistical Series Number 81.

Threlfall TJ, Thompson JR (2007). *Cancer incidence and mortality in Western Australia, 2006*. Department of Health, Western Australia, Perth. Statistical Series Number 82.

Threlfall TJ, Thompson JR (2009). *Cancer incidence and mortality in Western Australia, 2007*. Department of Health, Western Australia, Perth. Statistical series number 86.

Threlfall TJ, Thompson JR (2010). *Cancer incidence and mortality in Western Australia, 2008*. Department of Health, Western Australia, Perth. Statistical series number 87.

Threlfall TJ, Thompson JR (2011). *Cancer incidence and mortality in Western Australia, 2009*. Department of Health, Western Australia, Perth. Statistical series number 91.

Appendix 2H. Guide to tables in Appendix 3

Note: The order of cancer types in the tables in Appendix 2F is the basis for the wide-format incidence and mortality tables in Appendix 3.

Terms and formatting

Terms used in table headings are explained under “Statistical methods” (Section 1.4) and abbreviations repeated in Appendix 2A.

Age groups are expressed in whole years, i.e. “10-14” means 10.0 to 14.99.... years.

For most cancers in the wide-format tables which follow, there are 2 rows for each sex. The upper one contains total cases, ASR, 95% confidence interval, risk and other summary statistics.

Under the headings for individual age groups, the upper rows also contain counts (cases or deaths) in whole numbers.

The numbers (1 decimal place) shown in the lower rows for each sex are age-specific rates per 100,000 for the relevant age group.

The larger, wide-format tables e.g. Appendices 3A, B and C, contain some sections which are summaries of others within the tables (e.g. “All Lymphomas”), hence the summation of case numbers or rates over all rows of the tables will not match the totals at the end of each table, which were calculated separately.

Order of cancer types within tables

In general, tables follow the order of cancer types as listed in **Appendix 2F**, with site-specific cancers listed first, then lymphohaematopoietic malignancies - lymphomas, myeloma, mast cell tumours, miscellaneous immunoproliferative tumours, then leukaemias - followed by the Unknown Primary Site and Total Cancers groups.

Note: The **mortality** appendix table includes deaths due to **all** non-melanoma skin cancers (NMSC), some of which are **not** listed in the Incidence tables. Some NMSC, such as Merkel cell or sweat gland carcinomas, are included in incidence statistics in this report, but these do **NOT** include basal cell carcinoma or squamous cell carcinoma (ICD-O-3 morphology codes 8050 - 8110).

- Notes -

Appendix 3A now contains an incidence data summary for the most common cancer types on page A3-10.

In **Appendix 3B**, the Total deaths due to cancer appears on page A3-19. The "Total deaths (cancer and non-cancer) of Cancer Registry cases" on page A3-20 includes non-cancer and all other deaths in persons with a valid WA tumour record.

Appendix 3A. Cancer incidence, Western Australia, 2010

Age	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85+ w/k	Total	ASR	95% c.i.	TD% CumInc	Risk	ASR2	
Lip, gum & mouth (C000-C069) (not C01 C02)																									
M																									
F																									
Tongue (C010-C029)																									
M																									
F																									
Parotid gland (C070-C079)																									
M																									
F																									
Major salivary glands (not parotid) (C080-C089)																									
M																									
F																									
Pharynx (C090-C149) (not C11)																									
M																									
F																									
Nasopharynx (C110-C119)																									
M																									
F																									
Oesophagus (C150-C159)																									
M																									
F																									
Stomach (C160-C169)																									
M																									
F																									
Small intestine (C170-C179)																									
M																									
F																									

Appendix 3A. Cancer incidence, Western Australia, 2010

Age	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85+ u/k	Total	ASR	95% c.i.	TD% CumInc	Risk	ASR2		
Colorectal cancer (C18-C20, C218)																										
M					<5	NR	<5	NR	7	11	24	64	77	101	116	116	98	90	54	765	42.9	39.8-46.0	96.0	5.2	20	69.80 (64.8-74.8)
F			<5	NR	<5	NR	<5	NR	7	12	22	43	55	68	64	67	70	67	83	565	28.7	26.2-31.3	96.0	3.3	31	46.40 (42.5-50.2)
Colon (C180-C189)																										
M			<5	NR	<5	NR	<5	NR	5	6	14	41	38	65	75	74	63	63	40	488	27.1	24.6-29.5	95.0	3.2	32	44.90 (40.9-48.9)
F			<5	NR	<5	NR	<5	NR	5	9	12	32	41	46	45	53	58	49	69	423	21.0	18.9-23.2	95.0	2.4	42	34.70 (31.4-38.1)
Rectosigmoid junction & rectum (C190-C209)																										
M			<5	NR	<5	NR	<5	NR	5	10	23	38	36	41	42	35	27	14	14	276	15.8	13.9-17.7	99.0	1.9	52	24.80 (21.9-27.8)
F			<5	NR	<5	NR	<5	NR	<5	10	11	14	21	18	14	12	18	14	14	140	7.6	6.2-8.9	97.0	0.9	114	11.50 (9.5-13.4)
Anus (C210-C219)																										
M			<5	NR	<5	NR	<5	NR	<5	NR	<5	NR	<5	NR	<5	NR	<5	NR	NR	8	0.5	0.2-0.9	100.0	0.1	1076	0.70 (0.2-1.2)
F			<5	NR	<5	NR	<5	NR	<5	NR	7.4	NR	NR	NR	NR	NR	NR	NR	NR	18	1.1	0.6-1.6	94.0	0.1	764	1.50 (0.8-2.2)
Liver & intrahepatic bile ducts (C220-C229)																										
M			<5	NR	<5	NR	<5	NR	<5	NR	12	10	10	10	<5	13	11	6	<5	80	4.6	3.6-5.7	66.0	0.5	187	7.30 (5.7-8.9)
F			<5	NR	<5	NR	<5	NR	<5	NR	15.6	14.6	16.3	NR	39.6	46.5	35.8	NR	NR	29	1.5	0.9-2.1	62.0	0.2	529	2.40 (1.5-3.3)
Gallbladder & bile ducts (C230-C249)																										
M			<5	NR	<5	NR	<5	NR	<5	NR	<5	NR	8.1	NR	36.5	NR	NR	NR	NR	37	2.2	1.5-2.9	76.0	0.3	312	3.40 (2.3-4.6)
F			<5	NR	<5	NR	<5	NR	<5	NR	<5	NR	6	<5	7	10	<5	10	<5	43	2.0	1.3-2.6	88.0	0.2	454	3.50 (2.5-4.6)
Pancreas (C250-C259)																										
M			<5	NR	<5	NR	<5	NR	<5	NR	6	5	6	17	28	21	10	13	13	133	7.6	6.3-8.9	74.0	0.9	109	12.30 (10.2-14.4)
F			<5	NR	<5	NR	<5	NR	7.2	6.5	8.8	8.8	27.7	63.7	63.9	88.7	59.6	108.0	108.0	96	4.6	3.6-5.6	61.0	0.6	160	7.80 (6.2-9.4)
Nasal cavity/sinuses, middle & inner ear (C300-C319)																										
M			<5	NR	<5	NR	<5	NR	<5	NR	<5	NR	<5	NR	<5	NR	<5	NR	<5	9	0.6	0.2-1.1	89.0	0.1	1326	0.80 (0.3-1.3)
F			<5	NR	<5	NR	<5	NR	<5	NR	<5	NR	<5	NR	<5	NR	<5	NR	NR	5	0.3	0.0-0.5	100.0	0.0	3727	0.40 (0.1-0.8)
Larynx (C320-C329)																										
M			<5	NR	<5	NR	<5	NR	<5	NR	9	<5	9	<5	8	<5	5	5	<5	42	2.3	1.6-3.0	96.0	0.3	375	3.80 (2.6-5.0)
F			<5	NR	<5	NR	<5	NR	<5	NR	13.1	NR	18.2	NR	21.1	29.8	NR	NR	NR	9	0.5	0.2-0.9	89.0	0.1	1357	0.70 (0.3-1.2)

Appendix 3A. Cancer incidence, Western Australia, 2010

Age	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85+ u/k	Total	ASR	95% c.i.	TD% CumInc	Risk	ASR2
Lung, bronchus & trachea (C330-C349)																								
M	<5	<5	<5	<5	9	20	46	81	73	89	93	93	66	577	30.3	27.7-32.8	87.0	3.4	30	54.30	(49.9-58.8)			
F	<5	<5	<5	<5	13	24	26	43	63	78	64	34	40	393	20.8	18.6-22.9	85.0	2.7	37	33.30	(30.0-36.6)			
Thymus (C370-C379)																								
M	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	0.2	0-0.5	75.0	0.0	3238	0.30	(0.0-0.7)			
F	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	0.2	0-0.5	75.0	0.0	4459	0.30	(0.0-0.7)			
Pleura, heart & mediastinum (C380-C389)																								
M	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	0.2	0-0.5	100.0	0.0	4031	0.20	(0-0.5)			
F	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	5	0.5	0.0-1.0	80.0	0.0	2335	0.40	(0.1-0.8)			
Bones, joints & articular cartilages (C400-C419)																								
M	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	10	0.9	0.3-1.5	100.0	0.1	1743	0.90	(0.3-1.4)			
F	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	9	0.8	0.3-1.4	100.0	0.1	1649	0.80	(0.3-1.3)			
Skin (melanoma only) (C440-C449; M-8720 - 8790)																								
M	<5	<5	10	11	16	35	32	62	79	83	73	65	64	39	648	38.0	35.0-41.0	99.0	4.2	24	58.10	(53.6-62.6)		
F	<5	<5	14	12	25	27	34	38	43	33	43	31	28	32	385	23.4	21.0-25.9	99.0	2.5	40	32.50	(29.2-35.7)		
Skin (not melanoma/SCC/BCC) (C440-C449)																								
M	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	55	3.0	2.2-3.9	96.0	0.3	356	5.30	(3.9-6.8)			
F	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	30	1.3	0.8-1.9	90.0	0.1	804	2.40	(1.5-3.3)			
Mesothelioma (M905; ICD10 C45)																								
M	<5	<5	<5	<5	<5	6	11	21	21	11	15	9	8	84	4.6	3.6-5.6	93.0	0.6	180	7.80	(6.1-9.5)			
F	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	13	0.7	0.3-1.2	100.0	0.1	946	1.10	(0.5-1.7)			
Kaposi sarcoma (M914; ICD10 C46)																								
M	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	0.1	0-0.3	100.0	0.0	*	0.30	(0-0.7)			
F	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	0.2	0-0.3	100.0	0.0	3810	0.30	(0-0.5)			
Nervous system, peripheral/autonomic (C470-C479)																								
M	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	0.1	0-0.2	100.0	0.0	6572	0.10	(0-0.3)			
F	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	0									

Appendix 3A. Cancer incidence, Western Australia, 2010

Age	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85+ u/k	Total	ASR	95% c.i.	TD% CumInc	Risk	ASR2		
Retropitoneum and peritoneum (C480-C489)																										
M									<5	NR	NR	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	0.0	0.0	0.40 (0.0-0.8)		
F									<5	NR	NR	<5	<5	<5	<5	<5	<5	<5	<5	8	0.5	0.2-0.9	100.0	0.1	1504	0.60 (0.2-1.1)
Connective, subcutaneous & other soft tissues (C490-C499)																										
M		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	5	<5	<5	<5	<5	<5	<5	34	2.2	1.4-3.0	100.0	0.2	480	3.00 (2.0-4.1)
F		NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	8.1	NR	NR	NR	NR	NR	NR	21	1.6	0.9-2.4	95.0	0.1	726	1.80 (1.0-2.5)
Breast (C500-C509)																										
M									<5	NR	NR	<5	<5	<5	<5	<5	<5	<5	<5	12	0.7	0.3-1.2	100.0	0.1	1043	1.00 (0.4-1.6)
F		NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	1444	88.5	83.8-93.2	100.0	10.1	10	120.60 (114-127)
Vulva (C510-C519)																										
F		<5	<5	<5	<5	<5	<5	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	25	1.4	0.8-1.9	100.0	0.1	719	2.10 (1.3-3.0)
Vagina (C520-C529)																										
F									<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	11	0.6	0.2-1.0	82.0	0.1	1264	0.90 (0.4-1.5)
Cervix uteri (C530-C539)																										
F		6	6	<5	17	10	10	7	7	7	7	6	<5	<5	<5	<5	<5	5	5	90	6.2	4.9-7.5	98.0	0.6	178	7.70 (6.1-9.3)
		7.3	7.3	NR	20.5	12.3	12.2	9.2	10.3	10.2	10.2	10.2	NR	NR	NR	NR	NR	NR	22.8							
Corpus uteri (C540-C549)																										
F		<5	NR	<5	NR	NR	<5	7	17	32	31	24	24	16	23	10	13			180	10.1	8.6-11.7	98.0	1.2	83	14.80 (12.6-17.0)
		NR	NR	NR	NR	NR	NR	8.6	22.4	47.2	52.6	55.7	46.9	86.3	46.3	59.3										
Uterus, nos (C550-C559)																										
F																				0						
Ovary (C560-C569)																										
F		<5	<5	<5	<5	<5	<5	8	11	13	15	14	10	7						99	5.7	4.5-6.9	91.0	0.6	175	8.30 (6.6-9.9)
		NR	NR	NR	NR	NR	NR	6.1	10.5	16.2	22.1	34.8	52.5	46.3	31.9											
Uterine adnexa & oth. fem gen. (C570-C579)																										
F									<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	11	0.7	0.3-1.1	100.0	0.1	994	0.90 (0.4-1.4)
		NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR							
Placenta (C580-C589)																										
F																				0						
Penis (C600-C609)																										
M													<5	<5	<5	<5	<5	<5	<5	9	0.5	0.1-0.8	100.0	0.0	2600	0.90 (0.3-1.5)
													NR	NR	NR	NR	NR	NR	NR							
Prostate gland (C610-C619)																										
M		<5	NR	<5	NR	50	119	274	380	377	278	204	115	78						1887	110.9	106-116	98.0	14.8	7	164.20 (157-172)
		NR	NR	NR	NR	60.1	154.9	399.6	618.8	857.6	846.1	861.8	685.7	647.9												
Testis (C620-C629)																										
M		<5	10	10	13	7	11	6	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	70	5.5	4.2-6.9	99.0	0.4	236	6.00 (4.6-7.4)
		NR	11.1	10.9	16.0	8.2	13.1	7.2	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR							

Appendix 3A. Cancer incidence, Western Australia, 2010

Age	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85 + u/k	Total	ASR	95% c.i.	TD% CumInc	Risk	ASR2	
Other male genital (C630-C639)																									
M				<5	NR															<5	0.1	0-0.3	100.0	0.0	0.10 (0-0.3)
Kidney (C640-C649)																									
M		<5	<5	<5	<5	<5	7	8	9	17	24	20	21	21	15	13	9	<5	157	10.0	8.4-11.6	95.0	1.1	89	13.60 (11.5-15.8)
F		<5	NR	NR	NR	NR	8.2	9.5	10.8	22.1	35.0	32.6	47.8	45.7	54.9	53.7	NR	NR	93	5.5	4.3-6.7	95.0	0.6	168	7.90 (6.3-9.6)
Bladder & urinary tract (C650-C689)																									
M				<5	<5	<5	<5	<5	5	9	12	20	20	20	39	30	28	19	185	9.8	8.3-11.3	95.0	1.2	85	17.70 (15.1-20.2)
F				NR	NR	NR	NR	NR	6.0	11.7	17.5	32.6	45.5	118.7	126.7	167.0	157.8	NR	63	2.8	2.1-3.6	90.0	0.3	309	5.10 (3.8-6.4)
Eye & lacrimal gland (C690-C699)																									
M		<5	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	8	0.6	0.1-1.0	88.0	0.1	1931	0.70 (0.2-1.2)
NR																									
F				<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	12	0.8	0.3-1.2	75.0	0.1	1157	0.90 (0.4-1.5)
Meninges (cerebral & spinal) (C700-C709)																									
M																			0						
F				<5	NR														<5	0.1	0-0.4	100.0	0.0	*	0.10 (0-0.3)
Brain (C710-C719)																									
M		<5	<5	<5	<5	<5	<5	<5	7	12	13	16	16	7	7	7	10	NR	99	6.5	5.2-7.9	86.0	0.7	153	8.60 (6.9-10.3)
F		<5	NR	NR	NR	NR	NR	NR	8.4	15.6	19.0	26.1	15.9	21.3	29.6	59.6	NR	NR	60	3.8	2.7-4.9	82.0	0.4	269	5.10 (3.8-6.4)
Spinal cord & cranial nerves (C720-C729)																									
M				<5	NR														<5	0.1	0-0.3	100.0	0.0	4728	0.20 (0-0.5)
F		<5	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	<5	0.2	0-0.5	0.0	0.0	*	0.10 (0-0.3)
Thyroid gland (C730-C739)																									
M				<5	NR														61	4.0	3.0-5.0	100.0	0.4	244	5.30 (4.0-6.7)
F				<5	NR	9	15	21	30	22	22	22	15	5	5	5	5	<5	192	13.3	11.4-15.2	99.0	1.3	76	16.40 (14.1-18.8)
Adrenal gland (C740-C749)																									
M				<5	NR														NR	0.4	0.0-0.8	100.0	0.0	3438	0.40 (0.1-0.8)
NR				NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	<5	0.1	0-0.2	100.0	0.0	*	0.10 (0-0.3)
F				<5	NR														<5	0.1	0-0.2	100.0	0.0	*	0.10 (0-0.3)
Endocrine glands (not adrenal) (C750-C759)																									
M				<5	NR														<5	0.2	0-0.4	50.0	0.0	8722	0.20 (0-0.4)
F				<5	NR														<5	0.1	0-0.2	100.0	0.0	*	0.10 (0-0.2)

Appendix 3A. Cancer incidence, Western Australia, 2010

Age		0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85 +	u/k	Total	ASR	95% c.i.	TD% CumInc	Risk	ASR2			
LEUKAEMIAS																													
Leukaemias, NOS/unclassifiable																													
M																													
F																					<5	0.1	0 - 0.3	67.0	0.0	*	0.30 (0 - 0.7)		
F																					<5	0.1	0 - 0.3	100.0	0.0	6826	0.30 (0 - 0.6)		
Leukaemias, lymphoid, all																													
M																													
M	<5	5																											
M	NR	6.8																											
F	<5	<5																											
F	NR	NR																											
Leukaemias, lymphoid, acute																													
M																													
M	<5	5																											
M	NR	6.8																											
F	<5	<5																											
F	NR	NR																											
Leukaemias, lymphoid, chronic																													
M																													
M																													
M																													
F	<5	<5																											
F	NR	NR																											
Leukaemias, lymphoid, other/NOS																													
M																													
M																													
M																													
F	<5	<5																											
F	NR	NR																											
Leukaemias, myeloid, all																													
M																													
M	<5	<5																											
M	NR	NR																											
F	<5	<5																											
F	NR	NR																											
Leukaemias, myeloid, acute																													
M																													
M	<5	<5																											
M	NR	NR																											
F	<5	<5																											
F	NR	NR																											
Leukaemias, myeloid, chronic																													
M																													
M	<5	<5																											
M	NR	NR																											
F	<5	<5																											
F	NR	NR																											
Leukaemias, myeloid, other/NOS																													
M																													
M																													
M																													
F	<5	<5																											
F	NR	NR																											

Appendix 3A. Cancer incidence, Western Australia, 2010

Age	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85+ u/k	Total	ASR	95% c.i.	TD% CumInc	Risk	ASR2												
Chronic myeloproliferative d/o, all																																				
M				<5				<5	NR	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	23	1.3	0.7-1.8	100.0	0.1	738	2.10 (1.2-2.9)										
F					<5			<5	NR	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	20	1.2	0.7-1.8	100.0	0.1	693	1.70 (1.0-2.5)										
OTHER CHRONIC IMMUNOPROLIFERATIVE DISEASES																																				
Mast cell tumours																																				
M																				0																
F								<5	NR	<5	NR									<5	0.1	0-0.3	100.0	0.0	8228	0.20 (0-0.4)										
Histiocytic/dendritic cell malignancies																																				
M										<5	NR				<5	NR				<5	0.1	0-0.2	100.0	0.0	*	0.20 (0-0.4)										
F														<5	NR					<5	0.1	0-0.2	100.0	0.0	8625	0.10 (0-0.2)										
Other & U/S immunoproliferative neoplasms																																				
M										<5	NR				<5	NR				7	0.4	0.1-0.7	100.0	0.0	2247	0.60 (0.2-1.1)										
F								<5	NR	<5	NR				<5	NR				<5	0.2	0-0.5	75.0	0.0	4547	0.30 (0.0-0.6)										
Other chronic immunoproliferative d/o, all																																				
M											<5	NR			<5	NR				9	0.5	0.2-0.8	100.0	0.1	1899	0.80 (0.3-1.3)										
F								<5	NR	<5	NR				<5	NR				NR	0.4	0.1-0.8	86.0	0.0	2187	0.60 (0.1-1.0)										
Unknown primary site (C26, C39, C76, C80; Behaviour 6/9)																																				
M				<5	<5			<5	NR	<5	11	17	16	16	9	24	23	24		137	7.0	5.8-8.2	76.0	0.6	162	13.10 (10.9-15.3)										
F				<5	NR			NR	NR	7.8	16.0	27.7	36.4	27.4	101.4	137.1	199.4			99	4.2	3.3-5.1	65.0	0.4	251	7.80 (6.2-9.4)										
All cancers																																				
M	17	NR	<5	22	42	39	51	82	159	255	474	721	905	931	828	739	594	409		6283	365.1	356-374	95.0	43.0	3	564.80 (551-579)										
	21.5	NR	27.0	46.5	42.6	62.7	96.3	188.7	306.4	617.1	1051.5	1473.7	2118	2520	3122	3542	3398			4659	269.1	261-277	95.0	30.2	4	388.90 (378-400)										
F	15	<5	NR	14	23	55	73	184	195	351	445	503	579	533	467	446	363	412		19.9	NR	18.4	28.0	66.8	93.8	222.4	239.5	429.0	585.3	741.4	982.5	1236	1369	1673	1635	1879

Appendix 3B. Cancer mortality, Western Australia, 2010

Age	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85+	Total	ASR	95% c.i.	PYLL	CumInc	Risk	ASR2	
Lip, gum & mouth (C000-C069) (not C01 C02)																										
M			1				1.2													16	0.9	0.4-1.3	136.9	0.1	1204	1.5 (0.8-2.3)
F									<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	0.3	0.0-0.5	62.0	0.0	2729	0.3 (0.0-0.7)
Tongue (C010-C029)																										
M				<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	24	1.3	0.8-1.9	224.1	0.1	802	2.2 (1.3-3.1)
F				NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	8	0.4	0.1-0.7	78.6	0.0	2612	0.6 (0.2-1.0)
Parotid gland (C070-C079)																										
M																				<5	0.1	0-0.3	20.7	0.0	*	0.2 (0-0.5)
F																				0						-
Major salivary glands (not parotid) (C080-C089)																										
M														<5	<5					<5	0.1	0-0.2	7.0	0.0	8793	0.1 (0-0.2)
F														NR	NR					0						-
Pharynx (C090-C149) (not C11)																										
M				<5	<5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	28	1.6	1.0-2.2	275.0	0.2	530	2.4 (1.5-3.4)
F				NR	NR	7.3	8.1	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	6	0.4	0.1-0.7	88.0	0.0	2585	0.5 (0.1-0.9)
Nasopharynx (C110-C119)																										
M				<5	NR									<5	NR	<5	<5	<5	<5	<5	0.2	0-0.4	27.8	0.0	4712	0.3 (0-0.6)
F																				<5	0.0	0-0.1	0.0	0.0	*	0.1 (0-0.2)
Oesophagus (C150-C159)																										
M				<5	NR	7	5	7	7	7	7	7	7	7	7	7	7	7	7	67	3.5	2.6-4.3	462.8	0.3	290	6.4 (4.9-8.0)
F				NR	NR	9.1	7.3	11.4	NR	27.4	NR	NR	NR	NR	NR	NR	NR	NR	NR	35	1.6	1.0-2.2	200.1	0.2	544	2.8 (1.8-3.7)
Stomach (C160-C169)																										
M				<5	NR	5	5	5	5	5	5	5	5	5	5	5	5	5	5	87	4.4	3.4-5.4	479.6	0.4	227	8.4 (6.6-10.2)
F				NR	NR	6.5	NR	16.3	18.2	36.5	54.9	107.3	108.0	NR	NR	NR	NR	NR	NR	21	1.0	0.5-1.4	151.0	0.1	1127	1.7 (0.9-2.4)
Small intestine (C170-C179)																										
M																				13	0.8	0.4-1.2	128.0	0.1	817	1.2 (0.5-1.8)
F				<5	NR															9	0.4	0.1-0.6	57.2	0.0	2380	0.7 (0.2-1.2)

Appendix 3B. Cancer mortality, Western Australia, 2010

Age	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85+	Total	ASR	95% c.i.	PYLL	CumInc	Risk	ASR2
Colorectal cancer (C18-C20, C218)																									
M							<5	<5	<5	6	11	16	34	35	28	45	38	43	260	13.5	11.8-15.2	1482.5	1.3	75	24.8 (21.7-27.9)
F							<5	<5	8	<5	11	14	7	7	14	20	26	54	160	6.5	5.4-7.6	820.8	0.6	175	12.4 (10.5-14.4)
Colon (C180-C189)																									
M							<5	<5	<5	7	9	23	19	18	30	23	33	33	169	8.7	7.3-10.1	935.0	0.8	121	16.3 (13.8-18.8)
F							<5	7	<5	7	10	<5	<5	10	13	19	42	42	114	4.5	3.6-5.4	524.4	0.4	260	8.7 (7.1-10.4)
Rectosigmoid junction & rectum (C190-C209)																									
M							<5	<5	<5	7	11	16	10	15	15	15	10	10	91	4.8	3.8-5.8	544.8	0.5	193	8.5 (6.8-10.3)
F							<5	<5	<5	<5	<5	<5	<5	7	7	7	12	12	46	2.0	1.4-2.6	295.8	0.2	533	3.7 (2.6-4.8)
Anus (C210-C219)																									
M							<5	NR	NR	<5	<5	NR	NR	NR	NR	NR	NR	NR	5	0.3	0.0-0.5	30.1	0.0	3022	0.5 (0.1-0.9)
F							<5	NR	NR	<5	NR	NR	NR	NR	NR	NR	NR	NR	8	0.4	0.1-0.8	61.9	0.1	1578	0.7 (0.2-1.1)
Liver & intrahepatic bile ducts (C220-C229)																									
M							<5	NR	<5	6	12	<5	NR	6	13	8	<5	8	65	3.6	2.7-4.5	548.9	0.4	223	6.0 (4.6-7.5)
F							<5	NR	NR	<5	NR	NR	NR	<5	5	<5	<5	<5	18	1.0	0.5-1.6	165.5	0.1	737	1.5 (0.8-2.2)
Gallbladder & bile ducts (C230-C249)																									
M							<5	NR	<5	NR	NR	11.4	NR	18.3	NR	NR	NR	NR	27	1.5	0.9-2.1	169.2	0.2	485	2.4 (1.5-3.4)
F							<5	NR	NR	<5	NR	NR	NR	<5	9	33.8	NR	27.4	30	1.3	0.8-1.8	107.3	0.1	872	2.5 (1.6-3.4)
Pancreas (C250-C259)																									
M							<5	NR	NR	5	8	6	19	18	18	12	16	16	109	5.9	4.7-7.0	670.6	0.7	149	10.4 (8.5-12.4)
F							<5	NR	NR	<5	NR	NR	NR	43.2	54.8	76.0	71.6	132.9	107	4.6	3.7-5.6	549.0	0.5	206	8.4 (6.8-10.0)
Nasal cavity/sinuses, middle & inner ear (C300-C319)																									
M							<5	NR	NR	<5	NR	NR	NR	NR	NR	NR	NR	NR	<5	0.1	0-0.2	0.0	0.0	*	0.2 (0-0.5)
F							<5	NR	NR	<5	NR	NR	NR	NR	NR	NR	NR	NR	<5	0.2	0-0.4	14.3	0.0	4323	0.3 (0.0-0.7)
Larynx (C320-C329)																									
M							<5	NR	NR	<5	NR	NR	NR	NR	7	<5	<5	<5	17	0.9	0.5-1.4	97.5	0.1	688	1.6 (0.9-2.4)
F							<5	NR	NR	<5	NR	NR	NR	NR	<5	NR	NR	NR	<5	0.2	0-0.4	14.3	0.0	4323	0.3 (0.0-0.6)

Appendix 3B. Cancer mortality, Western Australia, 2010

Age	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85+	Total	ASR	95% c.i.	PYLL	CumInc	Risk	ASR2	
Lung, bronchus & trachea (C330-C349)																										
M																										
F																										
Thymus (C370-C379)																										
M																										
F																										
Pleura, heart & mediastinum (C380-C389)																										
M																										
F																										
Bones, joints & articular cartilages (C400-C419)																										
M																										
F																										
Skin (melanoma only) (C430-C439)																										
M																										
F																										
Skin (non-melanoma; includes SCC-BCC) (C440-C449)																										
M																										
F																										
Mesothelioma (M905; ICD10 C45)																										
M																										
F																										
Kaposi sarcoma (M814; ICD10 C46)																										
M																										
F																										
Nervous system, peripheral/autonomic (C470-C479)																										
M																										
F																										

Appendix 3B. Cancer mortality, Western Australia, 2010

Age	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85+	Total	ASR	95% c.i.	PYLL	CumInc	Risk	ASR2	
Retropitoneum and peritoneum (C480-C489)																										
M										<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	0.3	0.0-0.5	55.5	0.0	2557	0.4 (0.0-0.7)
F																					0.4	0.1-0.7	62.0	0.1	1588	0.6 (0.2-1.1)
Connective, subcutaneous & other soft tissues (C490-C499)																										
M																					0.5	0.1-0.8	88.2	0.1	1640	0.7 (0.2-1.3)
F																					0.4	0-0.8	135.3	0.0	4713	0.4 (0.1-0.8)
Breast (C500-C509)																										
M																					0.1	0-0.2	2.4	0.0	6572	0.1 (0-0.3)
F																					12.4	10.7-14.1	2372.7	1.4	71	19.4 (16.9-21.9)
Vulva (C510-C519)																										
F																					0.4	0.1-0.8	43.0	0.1	1401	0.8 (0.3-1.3)
Vagina (C520-C529)																										
F																					0.2	0-0.5	72.2	0.0	7892	0.3 (0.0-0.7)
Cervix uteri (C530-C539)																										
F																					1.8	1.2-2.5	448.7	0.2	561	2.8 (1.8-3.7)
Corpus uteri (C540-C549)																										
F																					2.1	1.5-2.8	243.1	0.2	439	3.9 (2.8-5.0)
Uterus, nos (C550-C559)																										
F																					0					
Ovary (C560-C569)																										
F																					3.7	2.8-4.5	488.9	0.4	229	6.2 (4.8-7.6)
Uterine adnexa & oth. fem gen. (C570-C579)																										
F																					0.1	0-0.3	7.1	0.0	8625	0.3 (0.0-0.6)
Placenta (C580-C589)																										
F																					0					
Penis (C600-C609)																										
M																					0					
Prostate gland (C610-C619)																										
M																					12.2	10.7-13.7	505.7	0.9	110	27.8 (24.5-31.2)
Testis (C620-C629)																										
M																					0.5	0.1-0.9	206.6	0.0	2369	0.5 (0.1-0.9)

Appendix 3B. Cancer mortality, Western Australia, 2010

Age	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85+	Total	ASR	95% c.i.	PYLL	CumInc	Risk	ASR2	
Other male genital (C630-C639)																										
M																				<5	0.0	0-0.1	0.0	0.0	*	0.1 (0-0.3)
Kidney (C640-C649)																										
M	<5																									
	NR																									
F																										
Bladder & urinary tract (C650-C689)																										
M																										
F																										
Eye & lacrimal gland (C690-C699)																										
M																										
F																										
Meninges (cerebral & spinal) (C700-C709)																										
M																										
F																										
Brain (C710-C719)																										
M																										
F																										
Spinal cord & cranial nerves (C720-C729)																										
M																										
F																										
Thyroid gland (C730-C739)																										
M																										
F																										
Adrenal gland (C740-C749)																										
M																										
F																										
Endocrine glands (not adrenal) (C750-C759)																										
M																										
F																										

Appendix 3B. Cancer mortality, Western Australia, 2010

Age	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85+	Total	ASR	95% c.i.	PYLL	CumInc	Risk	ASR2	
LYMPHOMAS																										
Lymphoma, NOS / unclassifiable																										
M											<5	NR								<5	0.1	0-0.2	20.7	0.0	*	0.1 (0-0.3)
F											<5	NR								<5	0.1	0-0.3	7.1	0.0	8625	0.3 (0.0-0.6)
Hodgkin lymphoma																										
M											<5	NR								5	0.3	0.0-0.5	27.8	0.0	4712	0.5 (0.1-1.0)
F											<5	NR								<5	0.1	0-0.2	0.0	0.0	*	0.2 (0-0.5)
All NHL																										
M											<5	NR								74	3.9	3.0-4.8	415.4	0.4	227	7.1 (5.4-8.7)
F											<5	NR								54	2.3	1.6-2.9	243.1	0.2	440	4.2 (3.1-5.4)
NHL, mature B cell																										
M											<5	NR								49	2.7	1.9-3.5	274.2	0.3	298	4.6 (3.3-5.9)
F											<5	NR								37	1.6	1.0-2.2	171.6	0.2	603	3.0 (2.0-3.9)
NHL, mature T/NK cell																										
M											<5	NR								13	0.6	0.3-1.0	83.2	0.1	1736	1.3 (0.6-2.0)
F											<5	NR								5	0.2	0.0-0.4	28.6	0.0	4817	0.4 (0.0-0.7)
NHL, precursor cell lymphoblastic																										
M																				0					-	
F																				0					-	
NHL, other/unclassifiable																										
M											<5	NR								12	0.6	0.2-0.9	57.8	0.0	2061	1.2 (0.5-1.9)
F											<5	NR								12	0.4	0.2-0.7	42.9	0.0	2440	0.9 (0.4-1.4)
Lymphomas (all)																										
M											<5	NR								80	4.2	3.3-5.2	464.0	0.5	213	7.7 (6.0-9.4)
F											<5	NR								61	2.5	1.8-3.2	250.3	0.2	419	4.8 (3.6-6.0)
MYELOMA																										
Myeloma/plasma cell tumours																										
M											<5	NR								50	2.4	1.7-3.1	180.9	0.2	450	5.0 (3.6-6.4)
F											<5	NR								32	1.4	0.9-1.9	116.9	0.2	567	2.6 (1.7-3.4)

Appendix 3B. Cancer mortality, Western Australia, 2010

Age	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85+	Total	ASR	95% c.i.	PYLL	CumInc	Risk	ASR2	
LEUKAEMIAS																										
Leukaemias, NOS/unclassifiable																										
M																										
F																										
Leukaemias, lymphoid, all																										
M																										
F																										
Leukaemias, lymphoid, acute																										
M																										
F																										
Leukaemias, lymphoid, chronic																										
M																										
F																										
Leukaemias, lymphoid, other/NOS																										
M																										
F																										
Leukaemias, myeloid, all																										
M																										
F																										
Leukaemias, myeloid, acute																										
M																										
F																										
Leukaemias, myeloid, chronic																										
M																										
F																										
Leukaemias, myeloid, other/NOS																										
M																										
F																										

Appendix 3B. Cancer mortality, Western Australia, 2010

Age	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85+	Total	ASR	95% c.i.	PYLL	CumInc	Risk	ASR2		
Leukaemias, other																											
M																				0						-	
F																				0						-	
Leukaemias (all)																											
M	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	7	<5	11	6	16	14	77	4.2	3.2-5.2	760.6	0.4	261	7.4 (5.7-9.1)		
F	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	11.4	NR	33.5	25.3	95.4	116.3	48	2.3	1.6-3.0	378.3	0.2	415	3.9 (2.8-5.1)		
MYELODYSPLASTIC DISEASES																											
Refractory anaemias/cytopaenias																											
M																				10	0.4	0.2-0.7	9.4	0.0	3761	1.1 (0.4-1.7)	
F																				5	0.2	0.0-0.3	16.7	0.0	*	0.4 (0.0-0.7)	
Myelodysplastic syndromes																											
M																				17	0.7	0.4-1.1	13.9	0.0	4397	1.8 (0.9-2.7)	
F																				13	0.5	0.2-0.8	42.9	0.0	2421	1.0 (0.4-1.5)	
Myelodysplastic diseases, all																											
M																				27	1.2	0.7-1.6	23.3	0.0	2027	2.9 (1.8-4.0)	
F																				18	0.6	0.3-1.0	59.5	0.0	2055	1.3 (0.7-2.0)	
CHRONIC MYELOPROLIFERATIVE DISEASES																											
Chronic myeloproliferative disorder, NOS																											
M																				<5	0.1	0-0.2	11.5	0.0	*	0.1 (0-0.2)	
F																				0						-	
Polycythaemia rubra vera																											
M																				5	0.3	0.0-0.5	36.9	0.0	7068	0.5 (0.1-0.9)	
F																				<5	0.0	0-0.1	0.0	0.0	*	0.1 (0-0.2)	
Myelofibrosis/sclerosis																											
M																				5	0.3	0.0-0.5	34.7	0.0	3068	0.5 (0.1-0.9)	
F																				<5	0.1	0-0.2	7.1	0.0	8625	0.1 (0-0.2)	
Other chronic myeloproliferative d/o																											
M																				<5	0.1	0-0.1	0.0	0.0	*	0.2 (0-0.5)	
F																				<5	0.1	0-0.2	7.1	0.0	8625	0.1 (0-0.2)	

Appendix 3B. Cancer mortality, Western Australia, 2010

Age	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85+	Total	ASR	95% c.i.	PYLL	CumInc	Risk	ASR2
Chronic myeloproliferative d/o, all																									
M										<5	<5	<5	<5	NR	NR	<5	5	<5	13	0.6	0.3-1.0	83.2	0.1	1822	1.2 (0.5-1.9)
F						NR				NR	NR	NR	NR	NR	NR	NR	29.8	NR	<5	<5	0-0.4	14.3	0.0	4313	0.2 (0-0.5)
OTHER CHRONIC IMMUNOPROLIFERATIVE DISEASES																									
Mast cell tumours																									
M																			0						
F																			0						
Histiocytic/dendritic cell malignancies																									
M																			0						
F																			0						
Other & U/S immunoproliferative neoplasms																									
M										<5	<5	<5	<5	NR	NR	NR	NR	NR	<5	0.1	0-0.2	16.2	0.0	*	0.2 (0-0.5)
F										NR	NR	NR	NR	NR	NR	NR	NR	NR	0						
Other chronic immunoproliferative d/o, all																									
M										<5	<5	<5	<5	NR	NR	NR	NR	NR	<5	0.1	0-0.2	16.2	0.0	*	0.2 (0-0.5)
F										NR	NR	NR	NR	NR	NR	NR	NR	NR	0						
Unknown primary site (C80 or Behaviour 6/9)																									
M		<5	<5	5	10	11	11	11	16	21	21	23	16	21	21	23	16	21	99	4.9	3.9-5.9	526.9	0.4	273	9.8 (7.8-11.7)
F		NR	NR	NR	7.3	25.0	25.0	25.0	95.4	174.4	174.4	97.2	95.4	174.4	174.4	97.2	95.4	174.4	74	2.9	2.2-3.6	357.9	0.3	388	5.7 (4.4-7.1)
Total deaths due to cancer																									
M	<5	5	12	11	25	54	99	128	228	275	318	362	356	379	318	362	356	379	2260	117.2	112-122	13515.5	12.1	9	217.9 (209-227)
F	NR	NR	NR	NR	29.7	64.9	128.9	186.7	371	626	968	1529	2123	3148	968	1529	2123	3148	1540	72.0	68.1-76.0	10914.2	7.7	13	124.7 (118-131)
Mast cell tumours																									
M	<5	5	12	11	25	54	99	128	228	275	318	362	356	379	318	362	356	379	2260	117.2	112-122	13515.5	12.1	9	217.9 (209-227)
F	NR	NR	NR	NR	29.7	64.9	128.9	186.7	371	626	968	1529	2123	3148	968	1529	2123	3148	1540	72.0	68.1-76.0	10914.2	7.7	13	124.7 (118-131)
Histiocytic/dendritic cell malignancies																									
M	<5	5	12	11	25	54	99	128	228	275	318	362	356	379	318	362	356	379	2260	117.2	112-122	13515.5	12.1	9	217.9 (209-227)
F	NR	NR	NR	NR	29.7	64.9	128.9	186.7	371	626	968	1529	2123	3148	968	1529	2123	3148	1540	72.0	68.1-76.0	10914.2	7.7	13	124.7 (118-131)
Other & U/S immunoproliferative neoplasms																									
M	<5	5	12	11	25	54	99	128	228	275	318	362	356	379	318	362	356	379	2260	117.2	112-122	13515.5	12.1	9	217.9 (209-227)
F	NR	NR	NR	NR	29.7	64.9	128.9	186.7	371	626	968	1529	2123	3148	968	1529	2123	3148	1540	72.0	68.1-76.0	10914.2	7.7	13	124.7 (118-131)

Appendix 3B. Cancer mortality, Western Australia, 2010

Age	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85+	Total	ASR	95% c.i.	PYLL	CumInc	Risk	ASR2
Deaths due to benign tumours in CR cases																									
M																			<5	0.0	0-0.1	0	0.0	*	0.1 (0-0.3)
F																			<5	0.1	0.0-0.2	0	0.0	*	0.3 (0.0-0.7)
Deaths due to lymphohaematopoietic tumours of uncertain malignant potential																									
M																			<5	0.0	0-0.1	0	0.0	*	0.1 (0-0.3)
F																			<5	0.1	0-0.2	0	0.0	*	0.2 (0-0.5)
Deaths due to non-lymphohaematopoietic tumours of uncertain/unspecified nature																									
M																			<5	0.1	0-0.3	2	0.0	6572	0.3 (0-0.7)
F																			<5	0.2	0-0.5	87	0.0	8001	0.3 (0.0-0.6)
Non-cancer deaths in CR cases																									
M																			1087	47.1	44.3-50.0	1997	2.4	42	114.4 (108-121)
F																			820	25.9	23.9-27.8	1712	1.5	68	59.5 (55.4-63.6)
Deaths of undetermined cause in CR cases																									
M																			40	2.0	1.4-2.7	409	0.2	664	3.7 (2.6-4.9)
F																			34	1.8	1.1-2.4	459	0.2	607	2.7 (1.8-3.7)
All deaths (Cancer and non-cancer) of Cancer Registry cases																									
M																			3352	164.6	159-170	15655	14.5	7	332.8 (322-344)
F																			2372	98.3	93.9-103	12788	9.2	11	185.1 (178-193)

Appendix 3C. Childhood cancer, Western Australia, 2010 (WHO International Classification, version 3)

	All																	
	Males						Females											
	Age Group		Total ASR	95% <i>c.i.</i>	TD%	95% <i>c.i.</i>	Age Group		Total ASR	95% <i>c.i.</i>	TD%	95% <i>c.i.</i>						
0-14	15-19	0-14					15-19											
I. LEUKAEMIAS, MYELOPROLIFERATIVE AND MYELODYSPLASTIC DISEASES																		
All	<5	NR	10	4.6	1.8-7.5	100	<5	NR	7	3.4	0.9-6.0	100	NR	8	4.0	2.1-6.0	100	
Lymphoid leukaemia	<5	NR	7	3.2	0.8-5.5	100	<5	NR	5	2.5	0.3-4.7	100	NR	5.6	2.9	1.2-4.5	100	
Acute myeloid leukaemia	<5	NR	<5	1.4	0 - 3.1	100	<5	NR	<5	0.5	0 - 1.5	100	<5	NR	1.0	0.0-2.0	100	
Chronic MPDs	<5	NR	0	0	0 - 1.2	100	<5	NR	<5	0.4	0 - 1.2	100	<5	NR	0.2	0 - 0.6	100	
MDS & other MPDs	<5	NR	0	0			<5	NR	0				<5	NR	0			
Unspecified/other leukaemia	<5	NR	0	0			<5	NR	0				<5	NR	0			
II. LYMPHOMAS																		
All	<5	NR	<5	1.3	0 - 2.8	100	<5	NR	<5	0.4	0 - 1.2	100	<5	NR	<5	0.9	0.0-1.7	100
Hodgkin lymphoma	<5	NR	<5	0.4	0 - 1.3	100	<5	NR	<5	0.4	0 - 1.2	100	<5	NR	<5	0.4	0 - 1.0	100
Non-Hodgkin lymphoma exc Burkitt	<5	NR	<5	0.5	0 - 1.5	100	<5	NR	0				<5	NR	<5	0.3	0 - 0.8	100
Burkitt lymphoma	<5	NR	<5	0.4	0 - 1.1	100	<5	NR	0				<5	NR	<5	0.2	0 - 0.6	100
Misc. lymphoreticular neoplasms	<5	NR	0	0			<5	NR	0				<5	NR	0			
Unspecified lymphoma	<5	NR	0	0			<5	NR	0				<5	NR	0			
III. CNS AND INTRACRANIAL/SPINAL																		
All	<5	NR	11	4.8	1.9-7.6	100	<5	NR	10	4.7	1.8-7.6	80	<5	NR	21	4.7	2.7-6.8	91
Ependymoma/choroid plexus	<5	NR	<5	0.5	0 - 1.5	100	<5	NR	<5	0.4	0 - 1.2	100	<5	NR	<5	0.4	0 - 1.1	100
Astrocytoma	<5	NR	7	3.0	0.8-5.3	100	<5	NR	6	2.9	0.6-5.3	83	<5	NR	13	3.0	1.4-4.6	92
Embryonal tumours	<5	NR	<5	0.4	0 - 1.3	100	<5	NR	<5	0.5	0 - 1.4	100	<5	NR	<5	0.5	0 - 1.1	100
Other gliomas	<5	NR	<5	0.4	0 - 1.3	100	<5	NR	<5	0.9	0 - 2.1	50	<5	NR	<5	0.6	0 - 1.4	67
Other intracranial/spinal	<5	NR	<5	0.4	0 - 1.1	100	<5	NR	0				<5	NR	<5	0.2	0 - 0.6	100
Unspecified	<5	NR	0	0			<5	NR	0				<5	NR	0			

Appendix 3C. Childhood cancer, Western Australia, 2010 (WHO International Classification, version 3)

	Males				Females				All										
	Age Group				Age Group				Age Group										
	0	1-4	5-9	10-14	Total ASR	95% <i>c.i.</i>	TD%	0	1-4	5-9	10-14	Total ASR	95% <i>c.i.</i>	TD%					
IV. NEUROBLASTOMA & PERIPHERAL NERVOUS SYSTEM TUMOURS																			
All	<5	NR	<5	<5	<5	0.5	0 - 1.4	100	<5	<5	<5	<5	1.0	0 - 2.4	100	<5	0.7	0 - 1.6	100
Neuroblastoma/ganglioneurol.	<5	NR	<5	<5	<5	0.5	0 - 1.4	100	<5	<5	<5	<5	1.0	0 - 2.4	100	<5	0.7	0 - 1.6	100
Other					0											0			
V. RETINOBLASTOMA																			
All	<5	NR	<5	<5	<5	0.5	0 - 1.5	100	<5	<5	<5	<5	0			<5	0.3	0 - 0.8	100
VI. RENAL TUMOURS																			
All	<5	NR	<5	<5	<5	1.9	0.0-3.7	100	<5	<5	<5	<5	1.0	0 - 2.4	100	6	1.4	0.3-2.6	100
Nephroblastoma/oth non-epithel.	<5	NR	<5	<5	<5	1.9	0.0-3.7	100	<5	<5	<5	<5	1.0	0 - 2.4	100	6	1.4	0.3-2.6	100
Renal carcinoma					0											0			
Unspecified					0											0			
VII. HEPATIC TUMOURS																			
All					0											0			
Hepatoblastoma					0											0			
Hepatic carcinoma					0											0			
Unspecified					0											0			
VIII. BONE																			
All	<5	NR	<5	<5	<5	0.9	0 - 2.2	100	<5	<5	<5	<5	0.5	0 - 1.5	100	<5	0.7	0 - 1.6	100
Osteosarcoma	<5	NR	<5	<5	<5	0.4	0 - 1.3	100	<5	<5	<5	<5	0			<5	0.2	0 - 0.7	100
Chondrosarcoma					0											0			
Ewing & related sarcoma	<5	NR	<5	<5	<5	0.5	0 - 1.5	100	<5	<5	<5	<5	0.5	0 - 1.5	100	<5	0.5	0 - 1.2	100
Other specified					0											0			
Unspecified					0											0			

Appendix 3C. Childhood cancer, Western Australia, 2010 (WHO International Classification, version 3)

	All																			
	Males				Females				All											
	Age Group	5-9	10-14	Total ASR	95% <i>c.i.</i>	TD%	Age Group	0	1-4	5-9	10-14	Total ASR	95% <i>c.i.</i>	TD%						
IX. SOFT TISSUE SARCOMA																				
All	<5	<5	<5	1.9	0.0-3.8	100	<5	NR	<5	<5	<5	0.9	0 - 2.2	100	<5	<5	6	1.4	0.3-2.6	100
Rhabdomyosarcoma	<5	<5	<5	1.4	0 - 3.1	100	<5	NR	<5	<5	<5	0.5	0 - 1.5	100	<5	<5	<5	1.0	0.0-2.0	100
Fibrosarcoma/Neurofibrosarc.				0								0					0			
Kaposi sarcoma				0								0					0			
Other specified	<5	NR	<5	0.5	0 - 1.5	100	<5	NR	<5	<5	<5	0.4	0 - 1.2	100	<5	<5	<5	0.4	0 - 1.1	100
Unspecified				0								0					0			
X. GONADAL AND GERM CELL																				
All	<5	NR	<5	0.5	0 - 1.5	100	<5	NR	<5	<5	<5	1.3	0 - 2.8	67	<5	<5	<5	0.9	0.0-1.8	75
Intracranial/spinal				0								0					0			
Other/unspecified non-gonadal				0			<5	NR	<5	<5	<5	0.5	0 - 1.4	0	<5	NR	<5	0.2	0 - 0.7	0
Gonadal germ cell	<5	NR	<5	0.5	0 - 1.5	100						0					<5	0.3	0 - 0.8	100
Gonadal carcinoma				0			<5	NR	<5	<5	<5	0.4	0 - 1.2	100	<5	NR	<5	0.2	0 - 0.6	100
Other and unspecified				0			<5	NR	<5	<5	<5	0.4	0 - 1.2	100	<5	NR	<5	0.2	0 - 0.6	100
XI. OTHER EPITHELIAL / MELANOMA																				
All				0			<5	NR	<5	<5	<5	0.4	0 - 1.2	100	<5	<5	<5	0.2	0 - 0.6	100
Adrenocortical carcinoma				0								0					0			
Thyroid carcinoma				0								0					0			
Nasopharyngeal carcinoma				0								0					0			
Malignant melanoma				0								0					0			
Skin carcinomas				0								0					0			
Other/unspecified carcinoma				0			<5	NR	<5	<5	<5	0.4	0 - 1.2	100	<5	<5	<5	0.2	0 - 0.6	100

Appendix 3C. Childhood cancer, Western Australia, 2010 (WHO International Classification, version 3)

	Males				Females				All															
	Age Group				Age Group				Age Group															
	0	1-4	5-9	10-14	Total	ASR	95% <i>c.i.</i>	TD%	0	1-4	5-9	10-14	Total	ASR	95% <i>c.i.</i>	TD%								
XII. OTHER																								
All					0	0	0 - 1.4	100	<5	0.5	0 - 1.4	100	<5	0.2	0 - 0.7	100								
Other specified malignancy					0	0	0 - 1.4	100	<5	0.5	0 - 1.4	100	<5	0.2	0 - 0.7	100								
Other unspecified malignancy					0	0							0											
Total	<5	14	15	<5	37	16.9	11.4-22.4	100	6	10	6	8	30	14.2	9.1-19.2	90	10	24	21	12	67	15.6	11.8-19.3	96
	NR	22.4	20.4	NR					37.5	16.9	8.7	11.1					30.6	19.7	14.7	8.1				

Appendix 3D. Cancer incidence, Western Australia, 2010: Leading types by sex and geographic area

CHS Kimberley Region

Males						Females					
	Cases	%	ASR	95%c.i.	Risk		Cases	%	ASR	95%c.i.	Risk
Prostate	22	32.4	121.2	69.6-173	7	Breast	8	17.8	59.5	16.1-103	14
Melanoma (skin)	7	10.3	30.3	7.4-53.2	43	Melanoma (skin)	7	15.6	34.8	8.8-60.7	34
Liver	<5	NR	24.2	0.1-48.3	21	Colorectal	5	11.1	25.9	3.2-48.7	37
Bladder & urinary tract	<5	NR	18.8	0.1-37.4	49	Colon	<5	NR	20.8	0.4-41.2	44
Colorectal	<5	NR	12.7	0 - 27.2	77	Rectum	<5	NR	5.1	0 - 15.2	234
Colon	<5	NR	4.1	0 - 12.1	245	Pharynx	<5	NR	15.9	0 - 33.8	65
Rectum	<5	NR	8.7	0 - 20.7	113	Lung	<5	NR	25.2	0 - 54.3	144
Lip, gum & mouth	<5	NR	14.2	0 - 30.5	57	Uterus	<5	NR	18.9	0 - 40.8	66
Lung	<5	NR	16.1	0 - 34.6	53	Tongue	<5	NR	10.0	0 - 23.9	100
Unknown primary	<5	NR	17.5	0 - 37.5	36	Unknown primary	<5	NR	15.8	0 - 39.0	44
Leukaemia	<5	NR	16.0	0 - 35.1	78	Lymphoma	<5	NR	9.3	0 - 22.2	130
Leukaemia NOS	0					Lymphoma NOS	0				
Lymphoid leukaemia	<5	NR	8.2	0 - 19.6	117	Hodgkin lymphoma	<5	NR	4.1	0 - 12.2	291
Myeloid leukaemia	<5	NR	7.8	0 - 23.1	231	NHL	<5	NR	5.1	0 - 15.2	234
Leukaemia, other	0					Leukaemia	<5	NR	14.8	0 - 36.3	200
All cancers	68	100.0	352.7	267-438	3	All cancers	45	100.0	288.0	200-376	4

CHS Pilbara Region

Males						Females					
	Cases	%	ASR	95%c.i.	Risk		Cases	%	ASR	95%c.i.	Risk
Prostate	16	17.8	72.1	33.2-111	10	Breast	16	34.8	82.2	37.7-127	11
Melanoma (skin)	15	16.7	51.1	21.6-80.6	20	Melanoma (skin)	6	13.0	28.2	4.4-52.0	34
Colorectal	12	13.3	53.5	17.6-89.3	20	Cervix	5	10.9	28.8	0 - 59.1	91
Colon	9	10.0	36.6	9.5-63.7	24	Colorectal	<5	6.5	20.3	0 - 47.6	37
Rectum	3	3.3	16.9	0 - 40.3	146	Colon	<5	6.5	20.3	0 - 47.6	37
Lung	8	8.9	38.9	9.3-68.5	15	Rectum	0				
Lip, gum & mouth	5	5.6	21.4	0.3-42.6	38	Ovary	<5	6.5	21.9	0 - 50.7	182
Pharynx	<5	4.4	12.9	0 - 26.0	67	Uterus	<5	4.3	25.8	0 - 61.3	24
Brain	<5	4.4	14.1	0 - 28.7	64	Thyroid gland	<5	4.3	6.7	0 - 16.1	180
Tongue	<5	3.3	13.7	0 - 31.8	50	Lymphoma	<5	4.3	11.1	0 - 27.3	138
Thyroid gland	<5	3.3	8.1	0 - 17.2	149	Lymphoma NOS	0				
Lymphoma	<5	3.3	13.4	0 - 31.4	55	Hodgkin lymphoma	<5	2.2	7.2	0 - 21.4	250
Lymphoma NOS	0					NHL	<5	2.2	3.9	0 - 11.6	306
Hodgkin lymphoma	<5	1.1	2.2	0 - 6.5	544	Lip, gum & mouth	<5	2.2	3.7	0 - 11.0	322
NHL	<5	2.2	11.2	0 - 28.7	61	Stomach	<5	2.2	3.8	0 - 11.4	417
Leukaemia	<5	3.3	7.5	0 - 15.9	143	Lung	<5	2.2	3.9	0 - 11.6	306
						Vulva	<5	2.2	3.7	0 - 11.0	322
All cancers	90	100.0	367.1	281-453	3	All cancers	46	100.0	255.3	171-340	5

CHS Midwest Region

Males						Females					
	Cases	%	ASR	95%c.i.	Risk		Cases	%	ASR	95%c.i.	Risk
Prostate	52	26.5	94.4	68.3-120	8	Breast	51	38.1	116.3	83.9-149	8
Lung	24	12.2	39.4	23.2-55.6	23	Colorectal	16	11.9	30.6	14.5-46.7	35
Colorectal	21	10.7	37.1	20.7-53.5	21	Colon	12	9.0	19.7	8.0-31.4	63
Colon	13	6.6	22.9	10.0-35.7	31	Rectum	4	3.0	10.9	0 - 21.9	77
Rectum	8	4.1	14.3	4.1-24.5	64	Lung	13	9.7	24.9	11.0-38.9	29
Melanoma (skin)	17	8.7	31.5	15.9-47.1	34	Melanoma (skin)	11	8.2	24.6	9.1-40.1	49
Lip, gum & mouth	10	5.1	21.5	7.9-35.2	52	Unknown primary	5	3.7	10.1	1.0-19.2	73
Bladder & urinary tract	8	4.1	15.6	4.5-26.7	58	Leukaemia	5	3.7	13.8	0.7-26.8	98
Unknown primary	8	4.1	11.9	3.3-20.5	172	Leukaemia NOS	0				
Lymphoma	7	3.6	12.6	2.9-22.3	84	Lymphoid leukaemia	<5	1.5	3.9	0 - 9.4	248
Lymphoma NOS	0					Myeloid leukaemia	<5	2.2	9.9	0 - 21.7	161
Hodgkin lymphoma	<5	0.5	2.1	0 - 6.1	389	Leukaemia, other	0				
NHL	NR	3.1	10.5	1.8-19.3	106	Uterus	<5	3.0	7.1	0 - 14.4	136
Leukaemia	7	3.6	16.4	3.5-29.3	63	Oesophagus	<5	2.2	7.5	0 - 16.1	97
Leukaemia NOS	0					Lymphoma	<5	2.2	7.2	0 - 15.3	107
Lymphoid leukaemia	<5	2.0	8.3	0.2-16.5	86	Lymphoma NOS	0				
Myeloid leukaemia	<5	1.5	8.1	0 - 18.0	234	Hodgkin lymphoma	0				
All cancers	196	100.0	367.1	314-420	3	All cancers	134	100.0	291.0	240-342	4

Appendix 3D. Cancer incidence, Western Australia, 2010: Leading types by sex and geographic area

CHS Wheatbelt Region

Males						Females					
	Cases	%	ASR	95%c.i.	Risk		Cases	%	ASR	95%c.i.	Risk
Prostate	108	35.5	138.5	112-165	6	Breast	43	26.9	70.7	48.9-92.4	12
Colorectal	39	12.8	46.5	31.4-61.6	18	Colorectal	25	15.6	35.2	20.8-49.5	26
Colon	24	7.9	27.1	15.9-38.2	29	Colon	17	10.6	23.8	12.0-35.7	40
Rectum	15	4.9	19.4	9.3-29.6	46	Rectum	8	5.0	11.3	3.2-19.5	76
Melanoma (skin)	30	9.9	48.5	29.3-67.7	21	Lung	15	9.4	23.7	11.6-35.8	29
Lung	27	8.9	31.5	19.2-43.9	29	Melanoma (skin)	11	6.9	21.1	7.4-34.8	57
Unknown primary	10	3.3	10.7	3.9-17.5	168	Lymphoma	6	3.8	9.1	1.1-17.2	107
Lymphoma	10	3.3	15.3	5.7-25.0	54	Lymphoma NOS	0				
Lymphoma NOS	0					Hodgkin lymphoma	<5	NR	2.3	0 - 6.9	513
Hodgkin lymphoma	0					NHL	NR	NR	6.8	0.2-13.4	135
NHL	10	3.3	15.3	5.7-25.0	54	Leukaemia	6	3.8	10.3	0 - 20.6	175
Leukaemia	10	3.3	12.0	4.2-19.8	101	Leukaemia NOS	0				
Leukaemia NOS	0					Lymphoid leukaemia	<5	NR	7.0	0 - 16.6	270
Lymphoid leukaemia	NR	NR	6.2	1.0-11.4	241	Myeloid leukaemia	<5	NR	3.3	0 - 7.2	495
Myeloid leukaemia	<5	NR	5.8	0 - 11.6	174	Leukaemia, other	0				
Leukaemia, other	0					Uterus	5	3.1	6.9	0.8-13.1	135
Oesophagus	9	3.0	10.9	3.6-18.2	73						
All cancers	304	100.0	399.1	352-446	3	All cancers	160	100.0	246.1	206-287	4

CHS Goldfields Region

Males						Females					
	Cases	%	ASR	95%c.i.	Risk		Cases	%	ASR	95%c.i.	Risk
Prostate	26	19.7	77.7	47.7-108	9	Breast	21	28.8	69.0	39.0-99.0	12
Colorectal	20	15.2	56.8	31.8-81.8	17	Colorectal	7	9.6	22.7	5.2-40.2	35
Colon	10	7.6	28.4	10.7-46.1	34	Colon	7	9.6	22.7	5.2-40.2	35
Rectum	10	7.6	28.4	10.7-46.2	31	Rectum	0				
Lung	18	13.6	51.2	27.4-75.0	15	Melanoma (skin)	7	9.6	21.4	5.3-37.6	68
Melanoma (skin)	15	11.4	39.8	19.5-60.2	29	Kidney	5	6.8	14.3	1.7-26.8	84
Lip, gum & mouth	7	5.3	19.2	4.9-33.5	43	Lung	<5	NR	13.1	0.1-26.2	79
Kidney	6	4.5	17.5	3.4-31.6	37	Uterus	<5	NR	14.0	0.1-28.0	64
Bladder & urinary tract	5	3.8	14.2	1.6-26.8	55	Unknown primary	<5	NR	11.5	0.2-22.8	109
Mesothelioma	<5	NR	10.9	0.2-21.7	74	Cervix	<5	NR	10.6	0 - 22.6	84
Unknown primary	<5	NR	10.7	0.1-21.2	65	Thyroid gland	<5	NR	9.9	0 - 21.3	75
Lymphoma	<5	NR	11.6	0.2-23.1	68	Leukaemia	<5	NR	9.5	0 - 20.5	79
Pancreas	<5	NR	9.2	0 - 19.7	71	Ovary	<5	NR	6.8	0 - 16.3	112
Testis	<5	NR	7.7	0 - 16.4	146						
Leukaemia	<5	NR	8.8	0 - 18.7	67						
All cancers	132	100.0	376.0	312-440	3	All cancers	73	100.0	232.3	178-287	5

CHS Great Southern Region

Males						Females					
	Cases	%	ASR	95%c.i.	Risk		Cases	%	ASR	95%c.i.	Risk
Prostate	55	30.7	102.6	74.9-130	8	Breast	39	25.3	83.5	56.4-111	11
Melanoma (skin)	23	12.8	42.6	24.6-60.5	18	Colorectal	22	14.3	38.7	21.1-56.3	21
Colorectal	18	10.1	27.8	14.2-41.5	38	Colon	NR	NR	30.3	14.7-45.8	31
Colon	13	7.3	19.2	8.2-30.3	57	Rectum	<5	NR	8.4	0.1-16.7	69
Rectum	5	2.8	8.6	0.5-16.7	115	Melanoma (skin)	11	7.1	30.6	10.8-50.4	34
Lung	12	6.7	17.8	7.3-28.4	54	Lung	10	6.5	16.4	5.6-27.1	60
Bladder & urinary tract	9	5.0	15.2	5.0-25.5	49	Uterus	10	6.5	17.8	6.3-29.3	41
Lymphoma	7	3.9	11.1	2.5-19.8	72	Lymphoma	9	5.8	24.7	6.6-42.8	37
Lymphoma NOS	0					Lymphoma NOS	0				
Hodgkin lymphoma	0					Hodgkin lymphoma	<5	NR	13.3	0 - 28.7	112
NHL	7	3.9	11.1	2.5-19.8	72	NHL	NR	NR	11.4	1.9-20.8	55
Leukaemia	7	3.9	10.0	2.1-17.9	219	Cervix	7	4.5	16.6	3.6-29.7	63
Leukaemia NOS	<5	NR	1.1	0 - 3.2	*	Thyroid gland	6	3.9	16.3	1.8-30.7	79
Lymphoid leukaemia	<5	NR	3.5	0 - 8.5	438	Leukaemia	6	3.9	10.1	1.3-19.0	121
Myeloid leukaemia	<5	NR	5.4	0 - 11.2	438	Pancreas	<5	NR	5.9	0 - 12.1	122
Leukaemia, other	0					Unknown primary	<5	NR	4.5	0 - 9.6	350
Lip, gum & mouth	6	3.4	9.6	1.2-17.9	147						
All cancers	179	100.0	316.2	268-365	3	All cancers	154	100.0	322.8	267-379	3

Appendix 3D. Cancer incidence, Western Australia, 2010: Leading types by sex and geographic area

CHS South West Region

Males						Females					
	Cases	%	ASR	95%c.i.	Risk		Cases	%	ASR	95%c.i.	Risk
Prostate	139	27.8	105.7	87.9-124	7	Breast	102	30.4	86.5	69.0-104	11
Melanoma (skin)	67	13.4	52.8	39.8-65.9	17	Melanoma (skin)	49	14.6	42.0	29.5-54.5	25
Colorectal	59	11.8	43.1	31.8-54.4	21	Colorectal	39	11.6	28.9	19.2-38.6	31
Colon	40	8.0	28.3	19.2-37.4	32	Colon	28	8.3	20.9	12.6-29.2	42
Rectum	19	3.8	14.8	8.1-21.6	58	Rectum	11	3.3	8.0	3.0-13.0	106
Lung	43	8.6	30.6	21.2-40.1	29	Lung	23	6.8	16.1	9.2-23.1	55
Lip, gum & mouth	26	5.2	21.0	12.8-29.2	42	Uterus	14	4.2	10.7	4.9-16.6	85
Lymphoma	14	2.8	11.5	4.8-18.2	153	Lymphoma	14	4.2	9.6	4.2-15.0	101
Lymphoma NOS	0					Lymphoma NOS	<5	NR	0.8	0 - 2.3	517
Hodgkin lymphoma	NR	NR	3.8	0 - 7.8	346	Hodgkin lymphoma	<5	NR	1.8	0 - 4.4	541
NHL	10	2.0	7.7	2.2-13.1	275	NHL	11	3.3	7.0	2.5-11.5	162
Pancreas	12	2.4	8.5	3.5-13.4	94	Thyroid gland	12	3.6	12.6	5.1-20.0	83
Kidney	11	2.2	10.2	3.7-16.7	78	Unknown primary	10	3.0	6.3	2.0-10.5	198
Bladder & urinary tract	11	2.2	8.2	3.2-13.1	87	Kidney	8	2.4	5.1	1.4-8.9	225
Oesophagus	10	2.0	6.9	2.4-11.5	124	Pancreas	7	2.1	3.7	0.8-6.5	259
Unknown primary	9	1.8	5.9	1.9-9.9	171	Brain	7	2.1	6.7	0.9-12.4	181
Leukaemia	9	1.8	7.6	2.6-12.6	116	Leukaemia	7	2.1	5.0	1.2-8.8	186
Leukaemia NOS	0					Leukaemia NOS	0				
Lymphoid leukaemia	NR	NR	4.1	0.4-7.7	220	Lymphoid leukaemia	NR	NR	4.5	0.8-8.1	186
Myeloid leukaemia	<5	NR	3.5	0.1-6.9	245	Myeloid leukaemia	<5	NR	0.5	0 - 1.6	*
Leukaemia, other	0					Leukaemia, other	0				
Mesothelioma	8	1.6	5.9	1.7-10.0	136	Lip, gum & mouth	5	1.5	3.7	0.3-7.2	167
Stomach	7	1.4	5.0	1.1-8.9	170	Gallbladder / bile ducts	5	1.5	3.1	0.3-6.0	404
Thyroid gland	7	1.4	6.9	1.5-12.4	191	Cervix	<5	NR	3.4	0 - 6.8	396
Larynx	6	1.2	4.3	0.7-7.8	212	Ovary	<5	NR	3.5	0 - 7.5	410
Skin (NMSC exc. SCC/BCC)	6	1.2	4.3	0.7-7.8	235	Eye & lacrimal gland	<5	NR	2.7	0 - 5.7	341
Brain	6	1.2	5.0	0.7-9.4	163						
All cancers	500	100.0	387.9	353-423	3	All cancers	336	100.0	269.3	239-300	4

WA Country - all

Males						Females					
	Cases	%	ASR	95%c.i.	Risk		Cases	%	ASR	95%c.i.	Risk
Prostate	418	28.5	107.4	97.0-118	7	Breast	280	29.5	83.6	73.6-93.6	11
Melanoma (skin)	174	11.8	45.3	38.4-52.1	20	Colorectal	117	12.3	31.3	25.4-37.2	29
Colorectal	172	11.7	41.6	35.3-48.0	21	Colon	89	9.4	23.3	18.2-28.4	40
Colon	110	7.5	26.2	21.2-31.2	33	Rectum	28	3.0	8.0	5.0-11.1	99
Rectum	62	4.2	15.4	11.5-19.3	58	Melanoma (skin)	102	10.8	31.2	24.8-37.5	35
Lung	135	9.2	32.3	26.8-37.9	27	Lung	69	7.3	18.8	14.2-23.4	44
Lip, gum & mouth	63	4.3	16.5	12.3-20.6	58	Uterus	42	4.4	11.5	7.9-15.1	74
Lymphoma	46	3.1	12.2	8.5-15.8	84	Lymphoma	37	3.9	10.8	7.1-14.4	89
Lymphoma NOS	0					Lymphoma NOS	<5	NR	0.3	0 - 0.9	1350
Hodgkin lymphoma	6	0.4	1.7	0.3-3.1	699	Hodgkin lymphoma	NR	NR	3.2	0.9-5.4	418
NHL	40	2.7	10.5	7.1-13.8	95	NHL	28	3.0	7.3	4.5-10.1	123
Bladder & urinary tract	43	2.9	11.0	7.7-14.4	67	Leukaemia	30	3.2	8.8	5.4-12.3	140
Leukaemia	42	2.9	11.1	7.6-14.6	97	Leukaemia NOS	0				
Leukaemia NOS	<5	NR	0.2	0 - 0.6	*	Lymphoid leukaemia	16	1.7	4.7	2.2-7.1	234
Lymphoid leukaemia	23	1.6	5.8	3.4-8.2	159	Myeloid leukaemia	14	1.5	4.1	1.7-6.6	348
Myeloid leukaemia	18	1.2	5.1	2.6-7.6	247	Leukaemia, other	0				
Leukaemia, other	0					Thyroid gland	29	3.1	9.4	5.9-12.9	102
Unknown primary	36	2.5	8.2	5.4-11.0	149	Unknown primary	29	3.1	7.0	4.3-9.7	148
Oesophagus	32	2.2	7.7	5.0-10.5	101	Cervix	25	2.6	8.2	4.9-11.5	133
Kidney	32	2.2	9.2	5.9-12.4	90	Kidney	21	2.2	5.7	3.2-8.3	182
Pancreas	30	2.0	7.6	4.9-10.4	101	Ovary	18	1.9	5.4	2.7-8.1	208
Brain	23	1.6	6.9	3.9-9.9	140	Pancreas	17	1.8	4.2	2.1-6.4	184
Pharynx	20	1.4	5.1	2.8-7.4	188	Brain	15	1.6	4.9	2.1-7.7	280
Stomach	20	1.4	4.8	2.6-7.0	221	Lip, gum & mouth	11	1.2	3.0	1.2-4.9	274
Liver	20	1.4	5.2	2.9-7.5	129	Bladder & urinary tract	10	1.1	2.8	1.0-4.5	269
Mesothelioma	19	1.3	4.9	2.6-7.1	175	Vulva	8	0.8	2.5	0.7-4.2	303
Testis	16	1.1	5.7	2.8-8.5	210	Myelodysplastic diseases	8	0.8	1.9	0.5-3.3	359
Thyroid gland	14	1.0	4.1	1.9-6.3	300	Oesophagus	7	0.7	1.9	0.4-3.4	467
Myelodysplastic diseases	14	1.0	3.3	1.5-5.0	301	Gallbladder / bile ducts	7	0.7	1.5	0.4-2.7	1109
Skin (NMSC exc. SCC/BCC)	13	0.9	3.7	1.6-5.8	301						
All cancers	1469	100.0	377.0	357-397	3	All cancers	948	100.0	274.2	256-292	4

Appendix 3D. Cancer incidence, Western Australia, 2010: Leading types by sex and geographic area

North Metro AHS

	Males					Females					
	Cases	%	ASR	95%c.i.	Risk	Cases	%	ASR	95%c.i.	Risk	
Prostate	722	29.8	106.7	98.8-115	8	Breast	639	31.9	94.6	87.0-102	10
Colorectal	324	13.4	46.3	41.1-51.5	17	Colorectal	238	11.9	29.0	25.1-33.0	30
Colon	201	8.3	28.1	24.1-32.1	29	Colon	177	8.8	21.2	17.8-24.5	42
Rectum	123	5.1	18.2	14.9-21.5	39	Rectum	59	2.9	7.5	5.5-9.6	114
Melanoma (skin)	240	9.9	34.9	30.4-39.4	26	Lung	166	8.3	21.4	17.9-24.9	35
Lung	215	8.9	28.2	24.3-32.1	31	Melanoma (skin)	154	7.7	22.6	18.9-26.3	39
Lymphoma	125	5.2	19.8	16.2-23.4	46	Lymphoma	101	5.0	13.9	11.0-16.8	62
Lymphoma NOS	<5	NR	0.4	0 - 0.8	6841	Lymphoma NOS	<5	NR	0.1	0 - 0.2	*
Hodgkin lymphoma	NR	NR	3.8	2.1-5.5	332	Hodgkin lymphoma	NR	NR	2.7	1.3-4.1	447
NHL	102	4.2	15.6	12.5-18.7	54	NHL	85	4.2	11.2	8.6-13.7	71
Leukaemia	77	3.2	12.7	9.7-15.7	79	Thyroid gland	95	4.7	15.5	12.3-18.7	67
Leukaemia NOS	0					Uterus	71	3.5	9.8	7.4-12.2	82
Lymphoid leukaemia	46	1.9	8.1	5.5-10.6	129	Leukaemia	51	2.5	7.8	5.5-10.2	118
Myeloid leukaemia	31	1.3	4.6	2.9-6.3	201	Leukaemia NOS	0				
Leukaemia, other	0					Lymphoid leukaemia	24	1.2	3.9	2.2-5.7	205
Bladder & urinary tract	65	2.7	7.9	5.9-9.9	141	Myeloid leukaemia	27	1.3	3.9	2.3-5.5	275
Kidney	64	2.6	10.1	7.5-12.7	88	Leukaemia, other	0				
Pancreas	51	2.1	7.1	5.1-9.1	131	Pancreas	42	2.1	5.2	3.5-6.9	128
Lip, gum & mouth	48	2.0	7.2	5.1-9.4	131	Ovary	41	2.0	5.5	3.7-7.4	161
Stomach	47	1.9	6.3	4.4-8.2	159	Kidney	34	1.7	4.9	3.1-6.7	180
Brain	36	1.5	5.8	3.8-7.8	170	Cervix	33	1.6	5.5	3.6-7.4	182
Unknown primary	36	1.5	4.6	3.0-6.1	276	Unknown primary	33	1.6	3.1	1.9-4.2	331
Oesophagus	35	1.4	4.7	3.1-6.3	205	Bladder & urinary tract	26	1.3	2.4	1.4-3.5	469
Liver	35	1.4	4.8	3.2-6.5	198	Stomach	25	1.2	2.7	1.6-3.9	335
Myeloma	35	1.4	4.5	2.9-6.0	229	Myeloma	24	1.2	2.7	1.5-3.9	326
Mesothelioma	31	1.3	4.3	2.7-5.9	173	Lip, gum & mouth	23	1.1	3.0	1.7-4.3	341
Thyroid gland	28	1.2	4.6	2.9-6.4	195	Gallbladder / bile ducts	23	1.1	2.4	1.3-3.5	350
Pharynx	27	1.1	4.2	2.6-5.8	206	Brain	20	1.0	2.9	1.5-4.3	281
Testis	26	1.1	4.9	3.0-6.9	278	Liver	17	0.8	2.3	1.1-3.4	302
Tongue	23	0.9	3.3	1.9-4.6	313	Skin (NMSC exc. SCC/BCC)	17	0.8	2.0	1.0-3.1	478
All cancers	2423	100.0	352.9	339-367	3	All cancers	2004	100.0	278.0	265-291	4

South Metro AHS

	Males					Females					
	Cases	%	ASR	95%c.i.	Risk	Cases	%	ASR	95%c.i.	Risk	
Prostate	747	31.3	117.4	109-126	7	Breast	524	30.7	84.3	76.8-91.8	11
Colorectal	269	11.3	40.0	35.1-45.0	23	Colorectal	210	12.3	27.0	23.1-31.0	33
Colon	177	7.4	26.5	22.4-30.5	33	Colon	157	9.2	19.7	16.3-23.0	45
Rectum	91	3.8	13.4	10.5-16.2	73	Rectum	53	3.1	7.4	5.2-9.5	125
Melanoma (skin)	234	9.8	36.6	31.8-41.5	25	Lung	158	9.3	21.1	17.6-24.6	37
Lung	227	9.5	31.1	26.9-35.3	31	Melanoma (skin)	129	7.6	20.0	16.3-23.7	46
Lymphoma	106	4.4	17.1	13.8-20.4	49	Lymphoma	72	4.2	11.8	8.9-14.7	78
Lymphoma NOS	<5	NR	0.4	0 - 0.9	2701	Lymphoma NOS	6	0.4	0.8	0.1-1.5	961
Hodgkin lymphoma	NR	NR	2.0	0.8-3.1	440	Hodgkin lymphoma	9	0.5	2.2	0.7-3.6	643
NHL	93	3.9	14.8	11.7-17.8	57	NHL	57	3.3	8.8	6.4-11.2	98
Bladder & urinary tract	77	3.2	11.0	8.4-13.5	69	Thyroid gland	68	4.0	13.1	9.9-16.2	77
Unknown primary	65	2.7	8.9	6.6-11.2	118	Uterus	67	3.9	9.9	7.4-12.4	91
Kidney	61	2.6	10.5	7.7-13.2	90	Ovary	40	2.3	6.0	4.0-8.1	175
Leukaemia	57	2.4	9.9	7.0-12.7	108	Kidney	38	2.2	6.0	4.0-8.1	152
Leukaemia NOS	<5	NR	0.2	0 - 0.5	*	Pancreas	37	2.2	4.2	2.7-5.8	195
Lymphoid leukaemia	29	1.2	5.0	3.0-7.0	188	Unknown primary	37	2.2	3.9	2.5-5.3	288
Myeloid leukaemia	NR	NR	4.6	2.6-6.6	255	Leukaemia	35	2.1	5.3	3.3-7.4	172
Leukaemia, other	0					Leukaemia NOS	<5	NR	0.3	0 - 0.7	2683
Pancreas	52	2.2	8.1	5.8-10.3	97	Lymphoid leukaemia	NR	NR	2.3	0.8-3.8	392
Lip, gum & mouth	45	1.9	7.8	5.4-10.1	116	Myeloid leukaemia	19	1.1	2.7	1.3-4.0	344
Oesophagus	44	1.8	6.9	4.8-9.0	114	Leukaemia, other	0				
Stomach	43	1.8	5.7	3.9-7.5	179	Cervix	32	1.9	5.7	3.6-7.9	215
Brain	40	1.7	7.1	4.7-9.5	146	Bladder & urinary tract	27	1.6	3.3	1.9-4.6	242
Mesothelioma	34	1.4	4.7	3.1-6.3	190	Myeloma	26	1.5	3.5	2.1-4.9	224
Testis	28	1.2	6.2	3.9-8.6	214	Brain	25	1.5	4.1	2.3-5.8	253
Pharynx	27	1.1	4.4	2.7-6.2	209	Lip, gum & mouth	18	1.1	2.7	1.4-4.1	388
Skin (NMSC exc. SCC/BCC)	26	1.1	3.4	2.0-4.9	372	Stomach	16	0.9	2.4	1.1-3.8	527
Liver	25	1.0	4.0	2.4-5.6	239	Oesophagus	14	0.8	2.0	0.9-3.0	426
Myeloma	24	1.0	3.2	1.9-4.6	293	Gallbladder / bile ducts	13	0.8	1.7	0.7-2.6	462
						Vulva	11	0.6	1.4	0.5-2.3	895
All cancers	2389	100.0	369.7	354-385	3	All cancers	1706	100.0	256.4	243-269	4

Appendix 3D. Cancer incidence, Western Australia, 2010: Leading types by sex and geographic area

WA Metro - all

Males						Females					
	Cases	%	ASR	95%c.i.	Risk		Cases	%	ASR	95%c.i.	Risk
Prostate	1469	30.5	112.0	106-118	7	Breast	1163	31.3	89.7	84.4-95.1	10
Colorectal	593	12.3	43.1	39.6-46.7	19	Colorectal	448	12.1	28.0	25.2-30.8	32
Colon	378	7.9	27.3	24.4-30.1	31	Colon	334	9.0	20.4	18.0-22.8	43
Rectum	214	4.4	15.8	13.6-18.0	50	Rectum	112	3.0	7.5	6.0-8.9	119
Melanoma (skin)	474	9.9	35.7	32.4-39.0	25	Lung	324	8.7	21.2	18.8-23.7	36
Lung	442	9.2	29.6	26.7-32.4	31	Melanoma (skin)	283	7.6	21.4	18.8-24.0	42
Lymphoma	231	4.8	18.5	16.1-21.0	48	Lymphoma	173	4.7	12.8	10.8-14.9	69
Lymphoma NOS	5	0.1	0.4	0.0-0.7	3984	Lymphoma NOS	7	0.2	0.4	0.1-0.8	1997
Hodgkin lymphoma	31	0.6	3.0	1.9-4.0	373	Hodgkin lymphoma	24	0.6	2.4	1.4-3.5	522
NHL	195	4.1	15.2	13.0-17.4	55	NHL	142	3.8	10.0	8.2-11.7	83
Bladder & urinary tract	142	3.0	9.4	7.8-11.0	93	Thyroid gland	163	4.4	14.4	12.1-16.6	71
Leukaemia	134	2.8	11.3	9.3-13.4	91	Uterus	138	3.7	9.8	8.1-11.5	86
Leukaemia NOS	<5	NR	0.1	0 - 0.3	*	Leukaemia	86	2.3	6.6	5.1-8.2	138
Lymphoid leukaemia	75	1.6	6.6	5.0-8.2	152	Leukaemia NOS	<5	NR	0.2	0 - 0.4	5476
Myeloid leukaemia	NR	NR	4.6	3.3-5.9	224	Lymphoid leukaemia	NR	NR	3.1	2.0-4.3	267
Leukaemia, other	0					Myeloid leukaemia	46	1.2	3.3	2.3-4.4	302
Kidney	125	2.6	10.2	8.4-12.1	89	Leukaemia, other	0				
Pancreas	103	2.1	7.6	6.0-9.1	111	Ovary	81	2.2	5.8	4.4-7.1	168
Unknown primary	101	2.1	6.7	5.3-8.0	166	Pancreas	79	2.1	4.7	3.6-5.9	154
Lip, gum & mouth	93	1.9	7.5	5.9-9.0	123	Kidney	72	1.9	5.5	4.1-6.8	165
Stomach	90	1.9	6.0	4.7-7.3	168	Unknown primary	70	1.9	3.5	2.5-4.4	309
Oesophagus	79	1.6	5.8	4.5-7.1	148	Cervix	65	1.8	5.6	4.2-7.1	196
Brain	76	1.6	6.4	4.9-8.0	158	Bladder & urinary tract	53	1.4	2.8	2.0-3.7	321
Mesothelioma	65	1.4	4.5	3.4-5.6	181	Myeloma	50	1.3	3.1	2.2-4.0	268
Liver	60	1.2	4.4	3.3-5.6	217	Brain	45	1.2	3.5	2.3-4.6	268
Myeloma	59	1.2	3.9	2.9-4.9	256	Lip, gum & mouth	41	1.1	2.8	1.9-3.8	363
Pharynx	54	1.1	4.3	3.1-5.5	208	Stomach	41	1.1	2.6	1.7-3.4	410
Testis	54	1.1	5.6	4.0-7.1	243	Gallbladder / bile ducts	36	1.0	2.1	1.3-2.8	395
Thyroid gland	47	1.0	3.9	2.8-5.1	230	Oesophagus	28	0.8	1.8	1.1-2.5	481
Skin (NMSC exc. SCC/BCC)	42	0.9	2.8	1.9-3.8	376						
All cancers	4812	100.0	361.1	351-372	3	All cancers	3710	100.0	267.6	259-277	4

All Western Australia

Males						Females					
	Cases	%	ASR	95%c.i.	Risk		Cases	%	ASR	95%c.i.	Risk
Prostate	1887	30.0	110.9	106-116	7	Breast	1444	31.0	88.5	83.8-93.2	10
Colorectal	765	12.2	42.9	39.8-46.0	20	Colorectal	565	12.1	28.7	26.2-31.3	31
Colon	488	7.8	27.1	24.6-29.5	32	Colon	423	9.1	21.0	18.9-23.2	42
Rectum	276	4.4	15.8	13.9-17.7	52	Rectum	140	3.0	7.6	6.2-8.9	114
Melanoma (skin)	648	10.3	38.0	35.0-41.0	24	Lung	393	8.4	20.8	18.6-22.9	37
Lung	577	9.2	30.3	27.7-32.8	30	Melanoma (skin)	385	8.3	23.4	21.0-25.9	40
Lymphoma	277	4.4	17.1	15.0-19.1	53	Lymphoma	210	4.5	12.4	10.6-14.2	72
Lymphoma NOS	5	0.1	0.3	0.0-0.5	5257	Lymphoma NOS	8	0.2	0.4	0.1-0.7	1839
Hodgkin lymphoma	37	0.6	2.7	1.8-3.6	416	Hodgkin lymphoma	32	0.7	2.6	1.7-3.5	496
NHL	235	3.7	14.1	12.2-15.9	61	NHL	170	3.6	9.4	7.9-10.9	89
Bladder & urinary tract	185	2.9	9.8	8.3-11.3	85	Thyroid gland	192	4.1	13.3	11.4-15.2	76
Leukaemia	177	2.8	11.4	9.6-13.2	91	Uterus	180	3.9	10.1	8.6-11.7	83
Leukaemia NOS	<5	NR	0.1	0 - 0.3	*	Leukaemia	116	2.5	7.1	5.7-8.6	138
Lymphoid leukaemia	99	1.6	6.5	5.1-7.9	152	Leukaemia NOS	<5	NR	0.1	0 - 0.3	6826
Myeloid leukaemia	NR	NR	4.8	3.6-5.9	227	Lymphoid leukaemia	NR	NR	3.5	2.4-4.5	258
Leukaemia, other	0					Myeloid leukaemia	60	1.3	3.5	2.5-4.5	309
Kidney	157	2.5	10.0	8.4-11.6	89	Leukaemia, other	0				
Lip, gum & mouth	156	2.5	9.6	8.0-11.1	97	Ovary	99	2.1	5.7	4.5-6.9	175
Unknown primary	137	2.2	7.0	5.8-8.2	162	Unknown primary	99	2.1	4.2	3.3-5.1	251
Pancreas	133	2.1	7.6	6.3-8.9	109	Pancreas	96	2.1	4.6	3.6-5.6	160
Oesophagus	111	1.8	6.2	5.0-7.4	133	Kidney	93	2.0	5.5	4.3-6.7	168
Stomach	110	1.8	5.7	4.6-6.9	178	Cervix	90	1.9	6.2	4.9-7.5	178
Brain	99	1.6	6.5	5.2-7.9	153	Bladder & urinary tract	63	1.4	2.8	2.1-3.6	309
Mesothelioma	84	1.3	4.6	3.6-5.6	180	Brain	60	1.3	3.8	2.7-4.9	269
Liver	80	1.3	4.6	3.6-5.7	187	Myeloma	56	1.2	2.7	2.0-3.5	310
Pharynx	74	1.2	4.5	3.5-5.5	202	Lip, gum & mouth	52	1.1	2.9	2.0-3.7	341
Myeloma	71	1.1	3.7	2.8-4.6	249	Stomach	47	1.0	2.4	1.6-3.1	450
Testis	70	1.1	5.5	4.2-6.9	236	Gallbladder / bile ducts	43	0.9	2.0	1.3-2.6	454
Thyroid gland	61	1.0	4.0	3.0-5.0	244	Oesophagus	35	0.8	1.8	1.2-2.5	478
Skin (NMSC exc. SCC/BCC)	55	0.9	3.0	2.2-3.9	356	Skin (NMSC exc. SCC/BCC)	30	0.6	1.3	0.8-1.9	804
All cancers	6283	100.0	365.1	356-374	3	All cancers	4659	100.0	269.1	261-277	4

Appendix 3E. Cancer mortality, Western Australia, 2010: Leading types by sex and geographic area

CHS Kimberley Region

Males						Females					
	Cases	%	ASR	95%c.i.	Risk		Cases	%	ASR	95%c.i.	Risk
Oesophagus	<5	NR	19.3	0 - 38.6	42	Cervix	<5	NR	9.1	0 - 21.9	119
Liver	<5	NR	15.2	0 - 33.1	38	Tongue	<5	NR	5.6	0 - 16.6	144
Lip, gum & mouth	<5	NR	11.2	0 - 27.8	356	Pharynx	<5	NR	5.0	0 - 14.8	200
Lung	<5	NR	12.4	0 - 29.6	134	Vagina	<5	NR	5.5	0 - 16.2	293
Prostate	<5	NR	13.1	0 - 31.3	46	Unknown primary	<5	NR	10.8	0 - 31.8	56
Lymphoma	<5	NR	13.1	0 - 31.3	46	Myelodysplastic diseases	<5	NR	10.6	0 - 31.3	38
Lymphoma NOS	0				-						-
Hodgkin lymphoma	0				-						-
NHL	<5	NR	13.1	0 - 31.3	46						-
Tongue	<5	NR	6.0	0 - 17.8	134						-
Stomach	<5	NR	6.4	0 - 18.9	*						-
Larynx	<5	NR	7.0	0 - 20.8	57						-
Unknown primary	<5	NR	7.0	0 - 20.8	57						-
											-
											-
											-
											-
											-
All cancer deaths	19	100.0	110.9	60.1-162	7	All cancer deaths	7	100.0	46.5	9.6-83.5	15

CHS Pilbara Region

Males						Females					
	Cases	%	ASR	95%c.i.	Risk		Cases	%	ASR	95%c.i.	Risk
Lung	<5	NR	11.8	0 - 25.7	71	Lip, gum & mouth	<5	NR	3.7	0 - 11.0	322
Stomach	<5	NR	5.1	0 - 12.2	236	Liver	<5	NR	3.9	0 - 11.6	306
Colorectal	<5	NR	11.4	0 - 33.5	*	Breast	<5	NR	3.9	0 - 11.6	306
Colon	0				-	Unknown primary	<5	NR	4.1	0 - 12.0	247
Rectum	<5	NR	11.4	0 - 33.5	*						
Nasopharynx	<5	NR	2.8	0 - 8.1	436						
Mesothelioma	<5	NR	8.4	0 - 24.9	48						
Bladder & urinary tract	<5	NR	8.5	0 - 25.1	71						
All cancer deaths	9	100.0	48.0	11.8-84.1	18	All cancer deaths	<5	100.0	15.7	0.3-31.0	73

CHS Midwest Region

Males						Females					
	Cases	%	ASR	95%c.i.	Risk		Cases	%	ASR	95%c.i.	Risk
Lung	24	28.2	42.8	25.4-60.3	20	Breast	10	28.6	19.6	6.9-32.2	61
Colorectal	9	10.6	15.5	5.2-25.8	68	Lung	9	25.7	15.2	4.8-25.6	61
Colon	NR	NR	8.3	0.9-15.6	108	Colorectal	5	14.3	8.3	0.4-16.1	161
Rectum	<5	NR	7.3	0.0-14.5	180	Colon	<5	NR	5.8	0 - 11.9	322
Prostate	9	10.6	15.9	5.4-26.5	80	Rectum	<5	NR	2.5	0 - 7.4	322
Unknown primary	6	7.1	10.2	1.9-18.5	123	Melanoma (skin)	<5	NR	5.1	0 - 11.2	478
Oesophagus	<5	NR	5.2	0 - 10.6	287	Unknown primary	<5	NR	3.3	0 - 8.2	367
Pancreas	<5	NR	6.8	0.1-13.5	111	Myeloma	<5	NR	3.1	0 - 7.7	190
Pharynx	<5	NR	5.9	0 - 12.6	118	Oesophagus	<5	NR	2.4	0 - 7.2	248
Skin (NMSC inc. SCC/BCC)	<5	NR	4.2	0 - 9.3	389	Peritoneum/retro-p.	<5	NR	2.1	0 - 6.3	190
Mesothelioma	<5	NR	5.6	0 - 11.9	82	Connective/ soft tissues	<5	NR	2.5	0 - 7.4	322
Bladder & urinary tract	<5	NR	5.7	0 - 12.1	287	Kidney	<5	NR	1.0	0 - 3.0	*
Leukaemia	<5	NR	5.9	0 - 12.6	195						
All cancer deaths	85	100.0	151.5	119-184	7	All cancer deaths	35	100.0	62.6	40.8-84.5	17

Appendix 3E. Cancer mortality, Western Australia, 2010: Leading types by sex and geographic area

CHS Wheatbelt Region

Males						Females					
	Cases	%	ASR	95%c.i.	Risk		Cases	%	ASR	95%c.i.	Risk
Lung	23	22.1	27.1	15.8-38.5	35	Colorectal	10	18.2	10.8	3.6-18.0	90
Colorectal	16	15.4	19.0	9.4-28.7	47	Colon	NR	NR	10.2	3.1-17.2	90
Colon	6	5.8	5.7	0.9-10.6	276	Rectum	<5	NR	0.7	0 - 2.0	*
Rectum	10	9.6	13.3	4.9-21.7	56	Breast	7	12.7	10.4	2.3-18.5	89
Prostate	8	7.7	9.9	2.9-16.8	80	Lung	5	9.1	6.3	0.4-12.2	120
Unknown primary	7	6.7	7.8	1.8-13.8	154	Pancreas	<5	NR	5.3	0 - 10.8	172
Stomach	6	5.8	5.6	0.9-10.3	291	Uterus	<5	NR	5.2	0 - 10.5	157
Pancreas	6	5.8	8.6	1.7-15.6	73	Ovary	<5	NR	4.4	0 - 9.2	152
Brain	5	4.8	8.6	0.9-16.3	118	Gallbladder / bile ducts	<5	NR	2.1	0 - 5.2	556
Tongue	<5	NR	5.6	0.1-11.1	132	Melanoma (skin)	<5	NR	2.8	0 - 6.7	565
Leukaemia	<5	NR	4.6	0 - 9.2	241	Skin (NMSC inc. SCC/BCC)	<5	NR	1.2	0 - 2.9	*
						Brain	<5	NR	2.4	0 - 6.1	565
						Unknown primary	<5	NR	2.3	0 - 5.8	360
						Leukaemia	<5	NR	2.6	0 - 6.3	495
All cancer deaths	104	100.0	125.6	101-151	8	All cancer deaths	55	100.0	70.5	49.6-91.4	14

CHS Goldfields Region

Males						Females					
	Cases	%	ASR	95%c.i.	Risk		Cases	%	ASR	95%c.i.	Risk
Lung	8	21.6	22.9	6.9-38.9	54	Lung	5	21.7	19.2	2.3-36.1	31
Prostate	7	18.9	19.4	4.8-34.0	61	Pancreas	<5	NR	10.1	0 - 22.0	85
Colorectal	<5	NR	12.8	0.3-25.4	68	Unknown primary	<5	NR	7.3	0 - 15.8	335
Colon	<5	NR	9.5	0 - 20.3	109	Colorectal	<5	NR	4.8	0 - 11.6	274
Rectum	<5	NR	3.3	0 - 9.9	181	Colon	<5	NR	4.8	0 - 11.6	274
Leukaemia	<5	NR	8.6	0 - 18.4	73	Rectum	0				-
Leukaemia NOS	0				-	Breast	<5	NR	5.9	0 - 14.0	186
Lymphoid leukaemia	<5	NR	8.6	0 - 18.4	73	Cervix	<5	NR	5.9	0 - 14.0	137
Myeloid leukaemia	0				-	Uterus	<5	NR	7.1	0 - 17.2	123
Leukaemia, other	0				-	Leukaemia	<5	NR	7.0	0 - 16.9	79
Larynx	<5	NR	5.2	0 - 12.4	403	Stomach	<5	NR	4.1	0 - 12.1	98
Kidney	<5	NR	5.8	0 - 14.0	125	Brain	<5	NR	2.5	0 - 7.3	*
Unknown primary	<5	NR	4.9	0 - 11.7	245						
All cancer deaths	37	100.0	104.5	70.6-138	11	All cancer deaths	23	100.0	73.8	42.8-105	11

CHS Great Southern Region

Males						Females					
	Cases	%	ASR	95%c.i.	Risk		Cases	%	ASR	95%c.i.	Risk
Lung	12	19.7	18.1	7.5-28.8	50	Lung	7	14.9	11.1	1.8-20.3	125
Prostate	9	14.8	10.5	3.4-17.5	118	Pancreas	5	10.6	8.2	0.5-15.9	99
Colorectal	6	9.8	8.6	1.4-15.8	166	Ovary	5	10.6	6.4	0.3-12.5	141
Colon	NR	NR	6.4	0.6-12.2	421	Unknown primary	5	10.6	5.0	0.0-10.0	383
Rectum	<5	NR	2.2	0 - 6.5	274	Colorectal	<5	NR	6.6	0 - 13.4	183
Pancreas	5	8.2	9.7	0.8-18.6	93	Colon	<5	NR	3.4	0 - 8.3	350
Oesophagus	<5	NR	5.7	0 - 12.2	93	Rectum	<5	NR	3.2	0 - 7.8	383
Stomach	<5	NR	3.5	0 - 7.4	*	Cervix	<5	NR	3.7	0 - 8.6	266
Lymphoma	<5	NR	5.2	0 - 11.2	154	Lymphoma	<5	NR	2.5	0 - 5.5	*
Leukaemia	<5	NR	6.5	0 - 15.9	350	Breast	<5	NR	5.8	0 - 13.8	208
Liver	<5	NR	2.1	0 - 5.0	*	Leukaemia	<5	NR	6.0	0 - 14.6	187
Gallbladder / bile ducts	<5	NR	3.5	0 - 8.5	438	Myeloma	<5	NR	4.5	0 - 10.8	133
Connective/ soft tissues	<5	NR	4.0	0 - 10.4	386						
Unknown primary	<5	NR	1.8	0 - 4.2	*						
All cancer deaths	61	100.0	92.2	67.0-117	13	All cancer deaths	47	100.0	73.1	49.6-96.7	16

Appendix 3E. Cancer mortality, Western Australia, 2010: Leading types by sex and geographic area

CHS South West Region

Males

	Cases	%	ASR	95%c.i.	Risk
Lung	33	22.4	22.2	14.3-30.1	38
Colorectal	18	12.2	11.6	6.1-17.2	73
Colon	8	5.4	4.7	1.3-8.1	254
Rectum	10	6.8	6.9	2.5-11.3	102
Prostate	14	9.5	7.8	3.5-12.2	108
Pancreas	9	6.1	6.1	2.0-10.3	130
Melanoma (skin)	8	5.4	5.9	1.8-10.1	120
Unknown primary	8	5.4	4.6	1.2-8.1	290
Stomach	6	4.1	4.5	0.8-8.1	135
Mesothelioma	6	4.1	4.7	0.9-8.5	127
Lymphoma	5	3.4	3.6	0.3-6.8	137
Lymphoma NOS	0				-
Hodgkin lymphoma	<5	NR	0.8	0 - 2.3	513
NHL	<5	NR	2.8	0 - 5.7	187
Myeloma	5	3.4	2.8	0.2-5.4	257
Oesophagus	<5	NR	1.8	0 - 3.8	964
Anus	<5	NR	2.2	0 - 4.7	357
Liver	<5	NR	2.1	0 - 4.4	345
Kidney	<5	NR	2.6	0 - 5.5	298
Brain	<5	NR	2.1	0 - 4.7	341
Myelodysplastic diseases	<5	NR	2.0	0 - 4.2	682
Lip, gum & mouth	<5	NR	1.6	0 - 3.9	414
Larynx	<5	NR	1.3	0 - 3.1	513
Skin (NMSC inc. SCC/BCC)	<5	NR	0.7	0 - 1.8	*
Testis	<5	NR	2.5	0 - 6.0	573
Bladder & urinary tract	<5	NR	1.1	0 - 2.8	513

Females

	Cases	%	ASR	95%c.i.	Risk
Lung	16	15.7	10.7	5.1-16.2	68
Breast	14	13.7	11.7	5.5-17.9	67
Colorectal	12	11.8	5.1	2.1-8.1	517
Colon	9	8.8	3.9	1.2-6.6	517
Rectum	<5	NR	1.2	0 - 2.6	*
Pancreas	11	10.8	5.8	2.1-9.5	287
Unknown primary	8	7.8	5.4	1.4-9.5	167
Ovary	7	6.9	5.3	1.2-9.5	195
Brain	5	4.9	5.0	0 - 10.2	308
Lymphoma	5	4.9	3.0	0.2-5.8	387
Lymphoma NOS	0				-
Hodgkin lymphoma	0				-
NHL	5	4.9	3.0	0.2-5.8	387
Uterus	<5	NR	2.2	0 - 4.6	259
Oesophagus	<5	NR	1.2	0 - 2.9	992
Gallbladder / bile ducts	<5	NR	1.4	0 - 3.4	681
Nasal cavity & sinuses	<5	NR	1.3	0 - 3.1	517
Melanoma (skin)	<5	NR	1.2	0 - 2.9	992
Cervix	<5	NR	1.4	0 - 3.4	1150
Tongue	<5	NR	0.9	0 - 2.6	898
Stomach	<5	NR	0.5	0 - 1.6	*
Liver	<5	NR	0.9	0 - 2.6	681
Peritoneum/retro-p.	<5	NR	0.3	0 - 0.9	*
Vulva	<5	NR	0.8	0 - 2.3	517
Bladder & urinary tract	<5	NR	0.8	0 - 2.3	517
Eye & lacrimal gland	<5	NR	0.9	0 - 2.6	681
Leukaemia	<5	NR	1.0	0 - 3.0	1175
Myelodysplastic diseases	<5	NR	0.3	0 - 0.9	*
Myeloprolif. d/o (chronic)	<5	NR	0.4	0 - 1.1	*

All cancer deaths 147 100.0 98.7 82.1-115 9

All cancer deaths 102 100.0 67.4 53.1-81.7 15

WA Country - all

Males

	Cases	%	ASR	95%c.i.	Risk
Lung	105	22.7	24.9	20.0-29.7	36
Colorectal	54	11.7	12.6	9.2-16.1	76
Colon	27	5.8	5.8	3.5-8.0	224
Rectum	27	5.8	6.8	4.2-9.5	115
Prostate	49	10.6	10.7	7.6-13.7	90
Unknown primary	26	5.6	5.8	3.5-8.1	210
Pancreas	25	5.4	6.2	3.8-8.7	119
Stomach	19	4.1	4.1	2.2-6.1	272
Oesophagus	17	3.7	4.0	2.0-5.9	226
Lymphoma	15	3.2	3.6	1.8-5.5	185
Lymphoma NOS	0				-
Hodgkin lymphoma	<5	NR	0.5	0 - 1.1	1504
NHL	NR	NR	3.2	1.4-5.0	210
Leukaemia	14	3.0	3.5	1.6-5.4	323
Leukaemia NOS	<5	NR	0.4	0 - 1.0	*
Lymphoid leukaemia	7	1.5	1.9	0.4-3.4	489
Myeloid leukaemia	NR	NR	1.2	0.1-2.2	954
Leukaemia, other	0				-
Liver	13	2.8	2.9	1.3-4.6	321
Melanoma (skin)	13	2.8	3.2	1.4-4.9	245
Mesothelioma	13	2.8	3.3	1.5-5.2	183
Brain	12	2.6	3.4	1.4-5.4	262
Bladder & urinary tract	11	2.4	2.3	0.9-3.7	498
Myeloma	10	2.2	2.2	0.8-3.5	358
Tongue	9	1.9	2.4	0.8-4.0	367
Kidney	8	1.7	2.3	0.7-3.8	318
Lip, gum & mouth	6	1.3	1.6	0.3-2.9	449
Larynx	6	1.3	1.5	0.3-2.6	443

Females

	Cases	%	ASR	95%c.i.	Risk
Lung	42	15.4	10.3	7.1-13.6	78
Breast	36	13.2	10.2	6.8-13.7	91
Colorectal	33	12.1	6.5	4.1-8.8	209
Colon	26	9.5	5.1	3.0-7.2	249
Rectum	7	2.6	1.4	0.3-2.5	1323
Pancreas	23	8.4	5.3	3.0-7.5	203
Unknown primary	22	8.1	4.9	2.7-7.1	218
Ovary	16	5.9	3.8	1.8-5.8	238
Uterus	11	4.0	2.7	1.0-4.4	292
Cervix	10	3.7	2.6	0.9-4.3	397
Brain	9	3.3	2.4	0.6-4.2	720
Lymphoma	9	3.3	1.7	0.5-2.9	1040
Lymphoma NOS	0				-
Hodgkin lymphoma	<5	NR	0.1	0 - 0.4	*
NHL	NR	NR	1.6	0.4-2.8	1040
Melanoma (skin)	8	2.9	1.8	0.5-3.0	1092
Leukaemia	7	2.6	2.1	0.5-3.7	435
Leukaemia NOS	0				-
Lymphoid leukaemia	<5	NR	0.7	0 - 1.6	1450
Myeloid leukaemia	NR	NR	1.5	0.2-2.8	621
Leukaemia, other	0				-
Oesophagus	5	1.8	1.4	0.1-2.7	537
Gallbladder / bile ducts	5	1.8	1.1	0.1-2.1	1109
Myeloma	5	1.8	1.4	0.1-2.7	444
Liver	<5	NR	1.6	0 - 3.3	716
Tongue	<5	NR	0.7	0 - 1.6	1323
Nasal cavity & sinuses	<5	NR	0.8	0 - 1.8	871
Myelodysplastic diseases	<5	NR	0.7	0 - 1.6	965

All cancer deaths 462 100.0 109.2 99.0-119 9

All cancer deaths 273 100.0 66.8 58.4-75.3 15

Appendix 3E. Cancer mortality, Western Australia, 2010: Leading types by sex and geographic area

North Metro AHS

Males						Females					
	Cases	%	ASR	95%c.i.	Risk		Cases	%	ASR	95%c.i.	Risk
Lung	204	23.1	26.6	22.8-30.4	33	Lung	115	17.9	12.7	10.2-15.2	64
Prostate	116	13.1	13.0	10.6-15.5	113	Breast	110	17.2	14.4	11.5-17.2	58
Colorectal	101	11.4	12.8	10.2-15.4	84	Colorectal	65	10.1	6.8	5.0-8.7	155
Colon	71	8.0	9.1	6.9-11.3	115	Colon	45	7.0	4.6	3.1-6.1	244
Rectum	30	3.4	3.7	2.3-5.1	317	Rectum	20	3.1	2.2	1.2-3.3	426
Leukaemia	41	4.6	5.8	3.9-7.8	180	Pancreas	46	7.2	5.2	3.5-6.8	169
Leukaemia NOS	<5	NR	0.2	0 - 0.4	*	Ovary	34	5.3	4.2	2.7-5.7	186
Lymphoid leukaemia	NR	NR	2.0	0.9-3.0	471	Lymphoma	28	4.4	2.7	1.6-3.9	352
Myeloid leukaemia	25	2.8	3.7	2.1-5.3	292	Lymphoma NOS	<5	NR	0.1	0 - 0.3	*
Leukaemia, other	0				-	Hodgkin lymphoma	<5	NR	0.1	0 - 0.4	*
Pancreas	40	4.5	5.2	3.5-6.8	206	NHL	24	3.7	2.5	1.4-3.6	352
Brain	33	3.7	5.0	3.2-6.7	171	Unknown primary	24	3.7	2.2	1.2-3.2	493
Melanoma (skin)	32	3.6	4.7	3.1-6.4	158	Leukaemia	21	3.3	2.3	1.2-3.4	438
Liver	30	3.4	4.2	2.6-5.7	182	Leukaemia NOS	0				-
Unknown primary	28	3.2	3.5	2.1-4.8	411	Lymphoid leukaemia	9	1.4	0.8	0.2-1.4	1166
Stomach	26	2.9	3.5	2.1-4.9	235	Myeloid leukaemia	12	1.9	1.5	0.6-2.4	702
Oesophagus	25	2.8	3.0	1.8-4.2	449	Leukaemia, other	0				-
Mesothelioma	25	2.8	3.2	1.9-4.5	219	Cervix	16	2.5	2.1	1.0-3.3	445
Lymphoma	25	2.8	3.0	1.8-4.3	466	Uterus	16	2.5	1.6	0.8-2.5	606
Lymphoma NOS	0				-	Brain	16	2.5	2.3	1.1-3.5	476
Hodgkin lymphoma	<5	NR	0.2	0 - 0.5	6841	Gallbladder / bile ducts	15	2.3	1.4	0.6-2.1	903
NHL	NR	NR	2.9	1.7-4.1	500	Oesophagus	13	2.0	1.1	0.4-1.8	1575
Bladder & urinary tract	21	2.4	2.5	1.4-3.7	402	Bladder & urinary tract	12	1.9	1.0	0.4-1.6	1897
Skin (NMSC inc. SCC/BCC)	17	1.9	1.8	0.9-2.7	2021	Melanoma (skin)	11	1.7	1.4	0.5-2.3	815
Myeloma	16	1.8	1.9	0.9-2.9	655	Stomach	10	1.6	0.9	0.3-1.5	1178
Kidney	13	1.5	1.9	0.8-3.0	465	Myeloma	10	1.6	1.0	0.3-1.7	777
Myelodysplastic diseases	12	1.4	1.2	0.5-1.9	2556	Myelodysplastic diseases	10	1.6	0.9	0.3-1.5	1494
Pharynx	11	1.2	1.4	0.5-2.2	762	Kidney	9	1.4	0.9	0.3-1.6	1035
Gallbladder / bile ducts	11	1.2	1.6	0.6-2.6	433	Mesothelioma	7	1.1	0.7	0.2-1.3	2609
All cancer deaths	885	100.0	114.3	106-122	9	All cancer deaths	641	100.0	73.3	67.1-79.6	13

South Metro AHS

Males						Females					
	Cases	%	ASR	95%c.i.	Risk		Cases	%	ASR	95%c.i.	Risk
Lung	189	20.9	25.2	21.5-29.0	39	Lung	132	21.3	15.1	12.3-18.0	53
Colorectal	105	11.6	14.8	11.9-17.8	65	Breast	89	14.3	10.9	8.4-13.4	86
Colon	71	7.9	10.1	7.7-12.6	98	Colorectal	62	10.0	6.2	4.4-8.0	184
Rectum	34	3.8	4.7	3.1-6.4	194	Colon	43	6.9	4.1	2.7-5.5	288
Prostate	103	11.4	12.0	9.6-14.4	125	Rectum	19	3.1	2.1	1.0-3.2	506
Melanoma (skin)	45	5.0	6.7	4.6-8.7	146	Pancreas	38	6.1	3.7	2.4-5.1	274
Unknown primary	45	5.0	5.8	4.0-7.6	235	Brain	28	4.5	4.7	2.6-6.9	238
Pancreas	44	4.9	6.3	4.3-8.2	133	Unknown primary	28	4.5	2.6	1.5-3.7	483
Stomach	42	4.7	5.5	3.8-7.2	200	Ovary	25	4.0	2.9	1.7-4.2	298
Lymphoma	40	4.4	5.9	4.0-7.7	145	Lymphoma	24	3.9	2.7	1.5-3.8	374
Lymphoma NOS	<5	NR	0.2	0 - 0.5	5401	Lymphoma NOS	<5	NR	0.2	0 - 0.6	3325
Hodgkin lymphoma	<5	NR	0.2	0 - 0.5	*	Hodgkin lymphoma	0				-
NHL	37	4.1	5.5	3.6-7.3	149	NHL	NR	NR	2.4	1.3-3.5	421
Mesothelioma	32	3.5	4.1	2.6-5.6	217	Uterus	20	3.2	2.4	1.2-3.5	426
Brain	31	3.4	4.8	3.1-6.6	184	Leukaemia	20	3.2	2.2	1.1-3.2	394
Kidney	26	2.9	4.1	2.4-5.8	255	Leukaemia NOS	<5	NR	0.3	0 - 0.7	2683
Bladder & urinary tract	25	2.8	3.3	2.0-4.7	296	Lymphoid leukaemia	<5	NR	0.1	0 - 0.2	*
Myeloma	24	2.7	3.1	1.8-4.3	384	Myeloid leukaemia	16	2.6	1.8	0.8-2.8	462
Oesophagus	23	2.5	3.3	1.9-4.8	269	Leukaemia, other	0				-
Liver	22	2.4	3.5	2.0-5.0	232	Oesophagus	17	2.7	2.2	1.1-3.4	324
Leukaemia	22	2.4	2.7	1.5-4.0	410	Myeloma	17	2.7	1.8	0.8-2.8	497
Leukaemia NOS	0				-	Melanoma (skin)	14	2.3	2.0	0.9-3.1	517
Lymphoid leukaemia	<5	NR	0.5	0 - 0.9	2513	Bladder & urinary tract	11	1.8	1.1	0.3-1.8	1737
Myeloid leukaemia	NR	NR	2.3	1.2-3.4	489	Gallbladder / bile ducts	10	1.6	1.3	0.4-2.1	759
Leukaemia, other	0				-	Stomach	9	1.4	1.3	0.3-2.3	943
Skin (NMSC inc. SCC/BCC)	15	1.7	1.8	0.9-2.8	755	Skin (NMSC inc. SCC/BCC)	9	1.4	1.0	0.3-1.7	1183
Pharynx	11	1.2	1.8	0.7-2.9	414	Liver	8	1.3	0.8	0.2-1.5	1027
Gallbladder / bile ducts	11	1.2	1.6	0.6-2.6	408	Cervix	8	1.3	1.0	0.2-1.8	1199
Myelodysplastic diseases	10	1.1	1.2	0.4-1.9	1663	Kidney	8	1.3	0.9	0.2-1.6	891
Tongue	7	0.8	0.9	0.2-1.6	1150						
All cancer deaths	903	100.0	123.3	115-132	9	All cancer deaths	621	100.0	72.0	65.7-78.4	14

Appendix 3E. Cancer mortality, Western Australia, 2010: Leading types by sex and geographic area

WA Metro - all

Males

	Cases	%	ASR	95%c.i.	Risk
Lung	393	22.0	25.9	23.2-28.6	36
Prostate	219	12.2	12.5	10.8-14.3	118
Colorectal	206	11.5	13.8	11.8-15.7	74
Colon	142	7.9	9.6	7.9-11.2	106
Rectum	64	3.6	4.2	3.1-5.3	242
Pancreas	84	4.7	5.7	4.4-7.0	162
Melanoma (skin)	77	4.3	5.6	4.3-6.9	152
Unknown primary	73	4.1	4.6	3.5-5.7	300
Stomach	68	3.8	4.5	3.4-5.6	217
Lymphoma	65	3.6	4.4	3.3-5.5	223
Lymphoma NOS	<5	NR	0.1	0 - 0.3	*
Hodgkin lymphoma	<5	NR	0.2	0 - 0.4	*
NHL	61	3.4	4.1	3.0-5.2	232
Brain	64	3.6	4.9	3.7-6.2	176
Leukaemia	63	3.5	4.4	3.2-5.6	245
Leukaemia NOS	<5	NR	0.1	0 - 0.2	*
Lymphoid leukaemia	NR	NR	1.2	0.6-1.8	773
Myeloid leukaemia	43	2.4	3.1	2.1-4.1	359
Leukaemia, other	0				-
Mesothelioma	57	3.2	3.7	2.7-4.7	218
Liver	52	2.9	3.8	2.8-4.9	205
Oesophagus	48	2.7	3.2	2.2-4.1	339
Bladder & urinary tract	46	2.6	2.9	2.0-3.8	342
Myeloma	40	2.2	2.5	1.7-3.3	487
Kidney	39	2.2	3.0	2.0-3.9	333
Skin (NMSC inc. SCC/BCC)	32	1.8	1.8	1.2-2.5	1115
Pharynx	22	1.2	1.6	0.9-2.3	542
Gallbladder / bile ducts	22	1.2	1.6	0.9-2.3	420
Myelodysplastic diseases	22	1.2	1.2	0.7-1.7	2032
Tongue	15	0.8	1.0	0.5-1.5	1267
All cancer deaths	1788	100.0	118.6	113-124	9

Females

	Cases	%	ASR	95%c.i.	Risk
Lung	247	19.6	13.9	12.0-15.8	58
Breast	199	15.8	12.7	10.8-14.7	69
Colorectal	127	10.1	6.5	5.3-7.8	168
Colon	88	7.0	4.4	3.3-5.4	263
Rectum	39	3.1	2.2	1.4-2.9	462
Pancreas	84	6.7	4.5	3.4-5.6	207
Ovary	59	4.7	3.6	2.6-4.6	228
Unknown primary	52	4.1	2.4	1.7-3.1	489
Lymphoma	52	4.1	2.7	1.9-3.5	363
Lymphoma NOS	<5	NR	0.2	0 - 0.4	6820
Hodgkin lymphoma	<5	NR	0.1	0 - 0.2	*
NHL	46	3.6	2.4	1.7-3.2	383
Brain	44	3.5	3.5	2.3-4.7	322
Leukaemia	41	3.2	2.3	1.5-3.0	413
Leukaemia NOS	<5	NR	0.2	0 - 0.4	5476
Lymphoid leukaemia	NR	NR	0.5	0.1-0.8	2258
Myeloid leukaemia	28	2.2	1.7	1.0-2.3	556
Leukaemia, other	0				-
Uterus	36	2.9	2.0	1.3-2.7	505
Oesophagus	30	2.4	1.7	1.0-2.3	548
Myeloma	27	2.1	1.4	0.8-2.0	612
Gallbladder / bile ducts	25	2.0	1.3	0.8-1.9	829
Melanoma (skin)	25	2.0	1.7	1.0-2.4	635
Cervix	24	1.9	1.6	0.9-2.3	635
Bladder & urinary tract	23	1.8	1.0	0.5-1.5	1822
Stomach	19	1.5	1.1	0.5-1.7	1065
Kidney	17	1.3	0.9	0.4-1.4	958
Skin (NMSC inc. SCC/BCC)	15	1.2	0.7	0.3-1.2	1484
Myelodysplastic diseases	15	1.2	0.6	0.3-1.0	2880
Liver	14	1.1	0.8	0.4-1.3	762
All cancer deaths	1262	100.0	72.8	68.4-77.3	13

All Western Australia

Males

	Cases	%	ASR	95%c.i.	Risk
Lung	501	22.2	25.9	23.5-28.2	36
Prostate	269	11.9	12.2	10.7-13.7	110
Colorectal	260	11.5	13.5	11.8-15.2	75
Colon	169	7.5	8.7	7.3-10.1	121
Rectum	91	4.0	4.8	3.8-5.8	193
Pancreas	109	4.8	5.9	4.7-7.0	149
Unknown primary	99	4.4	4.9	3.9-5.9	273
Melanoma (skin)	90	4.0	5.1	4.0-6.2	167
Stomach	87	3.8	4.4	3.4-5.4	227
Lymphoma	80	3.5	4.2	3.3-5.2	213
Lymphoma NOS	<5	NR	0.1	0 - 0.2	*
Hodgkin lymphoma	NR	NR	0.3	0.0-0.5	4712
NHL	74	3.3	3.9	3.0-4.8	227
Brain	77	3.4	4.6	3.6-5.7	189
Leukaemia	77	3.4	4.2	3.2-5.2	261
Leukaemia NOS	<5	NR	0.2	0.0-0.3	*
Lymphoid leukaemia	NR	NR	1.4	0.8-2.0	685
Myeloid leukaemia	48	2.1	2.6	1.8-3.4	420
Leukaemia, other	0				-
Mesothelioma	71	3.1	3.7	2.8-4.6	204
Oesophagus	67	3.0	3.5	2.6-4.3	290
Liver	65	2.9	3.6	2.7-4.5	223
Bladder & urinary tract	58	2.6	2.8	2.1-3.6	349
Myeloma	50	2.2	2.4	1.7-3.1	450
Kidney	47	2.1	2.8	2.0-3.6	330
Skin (NMSC inc. SCC/BCC)	37	1.6	1.6	1.1-2.2	1300
Pharynx	28	1.2	1.6	1.0-2.2	530
Gallbladder / bile ducts	27	1.2	1.5	0.9-2.1	485
Myelodysplastic diseases	27	1.2	1.2	0.7-1.6	2027
Tongue	24	1.1	1.3	0.8-1.9	802
All cancer deaths	2260	100.0	117.2	112-122	9

Females

	Cases	%	ASR	95%c.i.	Risk
Lung	290	18.8	13.3	11.6-14.9	61
Breast	237	15.4	12.4	10.7-14.1	71
Colorectal	160	10.4	6.5	5.4-7.6	175
Colon	114	7.4	4.5	3.6-5.4	260
Rectum	46	3.0	2.0	1.4-2.6	533
Pancreas	107	6.9	4.6	3.7-5.6	206
Ovary	75	4.9	3.7	2.8-4.5	229
Unknown primary	74	4.8	2.9	2.2-3.6	388
Lymphoma	61	4.0	2.5	1.8-3.2	419
Lymphoma NOS	<5	NR	0.1	0 - 0.3	8625
Hodgkin lymphoma	<5	NR	0.1	0 - 0.2	*
NHL	54	3.5	2.3	1.6-2.9	440
Brain	53	3.4	3.2	2.2-4.2	362
Leukaemia	48	3.1	2.3	1.6-3.0	415
Leukaemia NOS	<5	NR	0.1	0 - 0.3	6826
Lymphoid leukaemia	NR	NR	0.5	0.2-0.8	2002
Myeloid leukaemia	33	2.1	1.6	1.0-2.2	566
Leukaemia, other	0				-
Uterus	47	3.1	2.1	1.5-2.8	439
Oesophagus	35	2.3	1.6	1.0-2.2	544
Cervix	34	2.2	1.8	1.2-2.5	561
Melanoma (skin)	33	2.1	1.7	1.1-2.3	694
Myeloma	32	2.1	1.4	0.9-1.9	567
Gallbladder / bile ducts	30	1.9	1.3	0.8-1.8	872
Bladder & urinary tract	25	1.6	1.0	0.5-1.4	1441
Stomach	21	1.4	1.0	0.5-1.4	1127
Liver	18	1.2	1.0	0.5-1.6	737
Kidney	18	1.2	0.8	0.4-1.1	1205
Myelodysplastic diseases	18	1.2	0.6	0.3-1.0	2055
Skin (NMSC inc. SCC/BCC)	17	1.1	0.6	0.3-1.0	1869
All cancer deaths	1540	100.0	72.0	68.1-76.0	13

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