

Cancer incidence and mortality in Western Australia, 2009

A report of the Western Australian Cancer Registry

Data Collection and Analysis, Statutory & Non-Admitted Branch,
Data Integrity Directorate, Performance Activity & Quality Division
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Contact regarding enquiries and additional information:

Principal Medical Officer/Manager
Western Australian Cancer Registry
Department of Health
1st Floor, C Block
189 Royal St
East Perth WA 6004
AUSTRALIA

Fax : +61 (0)8 9222 4236

Phone: +61 (0)8 9222 4022

E-mail - wacanreg@health.wa.gov.au

(No "spam" or commercial offers; cancer-related enquiries only please.)

Internet - Department of Health home page

www.health.wa.gov.au

- Western Australian Cancer Registry home page -

www.health.wa.gov.au/wacr/home

Cancer Registry Staff, 2004-2011

Timothy Threlfall	Principal medical officer/ Manager	John Langley	Analyst/programmer
Judith Thompson	Medical officer/ coding advisor	Cathy Johnston Colleen Kontor	Data quality officer Data quality officer
Kaye Garrod	Data quality officer	Nola Olsen	Research officer
Charmaine Brewster	Data quality officer		

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Summary - Cancer incidence and mortality in Western Australia, 2009

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 10805 new cases of cancer recorded in Western Australians in 2009, 6291 (58%) occurring in males and 4514 in females. Age-standardised incidence rates were 378 per 100,000 males, and 264 per 100,000 females. The estimated lifetime 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 2009 were prostate and colorectal cancers, melanoma and lung cancer, while breast cancer predominated among females, followed by colorectal cancer, melanoma and lung cancer, patterns relatively stable in recent years.

Trend analysis based on the last ten years shows a continuing significant increase in the rate of prostate cancer in males (5.4% a year) but little change in colorectal, melanoma or lung cancer. In females, while annual incidence of breast cancer has declined slightly, a significant increase in lung cancer continues at an average of over 4% a year.

Among Western Australian residents, there were 3862 deaths due to cancer in 2009, 2158 in males and 1704 in females. All-cancers mortality rates for 2009 were 117 deaths per 100,000 males (similar to 2008) and 84 per 100,000 females (slightly increased). 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 61 children under the age of 15 years diagnosed with cancer in 2009 (ASR 18 per 100,000 in males and 11 in females), as well as a small number with other cancer-like conditions. There were 3 more cases than in 2008, but cancer at this age is a rare disease and 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 in 2008, melanoma was 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 2009 data, one in 7 men would be expected to have a diagnosis of prostate cancer before the age of 75, and one in 11 women could be expected to develop breast cancer. One in 115 men could be expected to die from prostate cancer before age 75, and one in 66 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 32 males and one in 53 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 2009. 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 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 2009.

- 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 2009 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.

Readers seeking detailed information for particular cancers not shown in tables, should contact the Registry for further information.

Information from this report, and other WACR information, is 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 2008 were quoted at 10408 in our previous report,¹ the total currently recorded for 2008 is 10536, an increase of about 1.2%. 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 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** 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 Lifetime 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.

Lifetime 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 lifetime risks may not be in proportion to one another because of differences in the age structures of populations.

2. Cancer in Western Australia, 2009

2.1 All cancers

2.1.1 Incidence

In 2009, there were 10805 new diagnoses of cancer in Western Australia, 4% more than in 2008, however the all-cancers age-standardized rates, indicating risk, were increased by only 1.7% in males, and 0.7% in females. There were 6291 cancers diagnosed in males (ASR 378 per 100,000) and 4514 in females (ASR 264) (Table 1) These increased rates were not statistically-significant.

The estimated lifetime 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 45% for males and 29% 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 2009 there were 3862 due to cancer (2158 in males, 1704 in females) (Table 1). Mortality ASRs were 117 deaths per 100,000 males and 84 per 100,000 females (unchanged in males, slightly increased in females). The estimated lifetime risk of death due to cancer before age 75 years was 1 in 8 for males and 1 in 11 for females. There was no significant change in the age-pattern of cancer mortality in 2009. 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 59 deaths due to non-melanocytic skin cancers, 72% of them in males. 44 (75%) of these 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 -

- 30 cancer-related deaths in persons not normally resident in Western Australia (19 Australian, 11 from overseas)

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

- 1 death due to "uncertain malignant potential" lymphohaematopoietic neoplasms

- 3 deaths due to "uncertain malignant potential" non-lymphohaematopoietic neoplasms

- 1767 deaths due to **non-tumour-related** causes among persons with a Registry tumour record (978 males, 789 females)

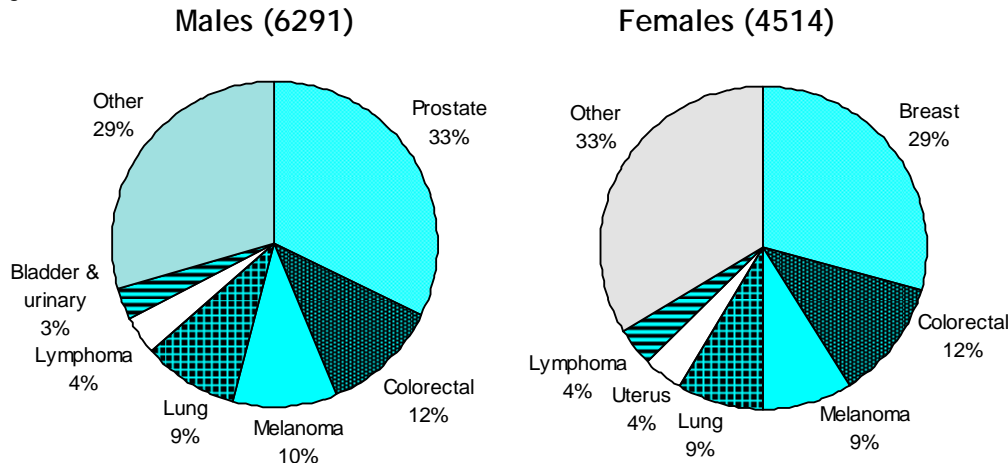
- 44 deaths of unresolved cause among persons with a tumour record (pending outcome of coronial investigations).

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 breast and prostate cancers were both slightly reduced from 2008 levels but differences were not statistically significant.

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

Figure 1. Cancer incidence, Western Australia, 2009: 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. In females, lung cancer has been the leading cause of cancer-related death in males for many years, and now appears firmly established as a more frequent cause of mortality in women than breast cancer.

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

Figure 2. Cancer mortality, Western Australia, 2009: common cancers

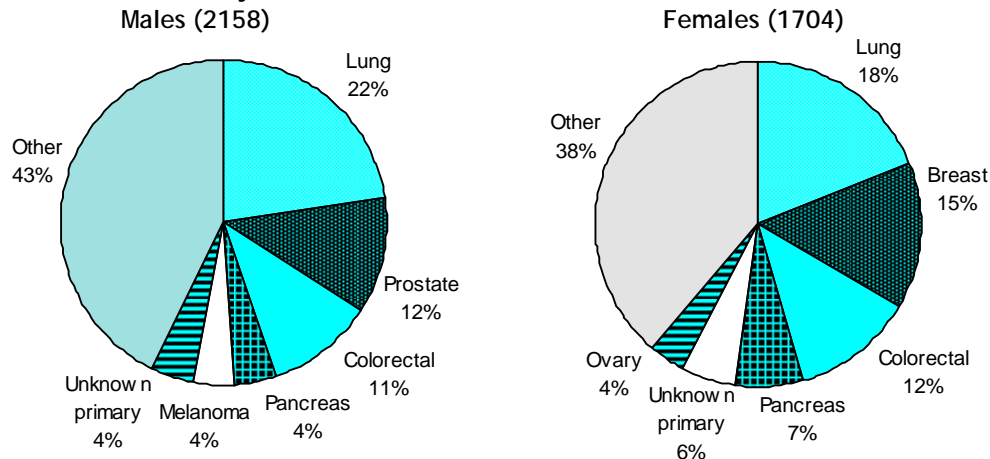


Table 1. Cancer incidence and mortality, Western Australia, 2009: leading types in males and females

Incidence

Males						Females					
	Cases	%	ASR	95%c.i.	Risk		Cases	%	ASR	95%c.i.	Risk
Prostate	2030	32.3	121.4	116-127	7	Breast	1313	29.1	81.7	77.1-86.3	11
Colorectal	739	11.7	43.2	40.0-46.4	20	Colorectal	545	12.1	28.8	26.2-31.4	30
Colon	471	7.5	26.7	24.2-29.2	32	Colon	379	8.4	19.3	17.2-21.4	44
Rectum	266	4.2	16.3	14.3-18.3	50	Rectum	165	3.7	9.5	8.0-11.0	92
Melanoma (skin)	643	10.2	39.6	36.5-42.7	21	Melanoma (skin)	400	8.9	24.8	22.3-27.4	40
Lung	583	9.3	32.9	30.1-35.6	25	Lung	393	8.7	20.5	18.3-22.7	40
Lymphoma	255	4.1	16.2	14.1-18.3	59	Uterus	176	3.9	10.5	8.9-12.1	75
Lymphoma NOS	10	0.2	0.7	0.2-1.2	1370	Lymphoma	172	3.8	9.8	8.2-11.4	95
Hodgkin lymphoma	33	0.5	2.7	1.8-3.7	501	Lymphoma NOS	4	0.1	0.1	0.0-0.2	*
NHL	212	3.4	12.8	11.0-14.5	71	Hodgkin lymphoma	20	0.4	1.7	0.9-2.5	690
Bladder & urinary tract	191	3.0	10.4	8.9-11.9	90	NHL	148	3.3	8.0	6.6-9.4	110
Kidney	183	2.9	11.4	9.7-13.2	75	Thyroid gland	159	3.5	11.6	9.7-13.4	86
Leukaemia	169	2.7	11.6	9.7-13.4	82	Pancreas	131	2.9	6.5	5.3-7.7	140
Leukaemia NOS	5	0.1	0.2	0.0-0.4	6335	Ovary	117	2.6	7.3	5.9-8.7	116
Lymphoid leukaemia	91	1.4	6.8	5.3-8.3	127	Unknown primary	115	2.5	5.0	3.9-6.0	205
Myeloid leukaemia	73	1.2	4.6	3.5-5.7	238	Leukaemia	110	2.4	7.0	5.5-8.5	160
Leukaemia, other	0					Leukaemia NOS	1	0.0	0.1	0 - 0.2	6593
Unknown primary	138	2.2	7.7	6.4-9.1	133	Lymphoid leukaemia	61	1.4	3.9	2.8-5.1	287
Pancreas	128	2.0	7.3	6.0-8.6	127	Myeloid leukaemia	48	1.1	3.0	2.0-3.9	383
Stomach	121	1.9	6.8	5.6-8.1	130	Leukaemia, other	0				
Lip, gum & mouth	102	1.6	6.5	5.2-7.7	152	Kidney	93	2.1	5.8	4.6-7.1	157
Oesophagus	88	1.4	5.1	4.0-6.2	161	Cervix	92	2.0	6.7	5.3-8.0	160
Brain	85	1.4	5.8	4.5-7.1	178	Bladder & urinary tract	77	1.7	3.5	2.6-4.3	272
Mesothelioma	81	1.3	4.7	3.6-5.7	160	Brain	72	1.6	4.8	3.6-6.1	218
Liver	76	1.2	4.7	3.6-5.8	178	Myeloma	62	1.4	3.0	2.2-3.9	306
Testis	72	1.1	5.7	4.3-7.0	226	Stomach	46	1.0	2.5	1.7-3.2	351
Myeloma	70	1.1	4.0	3.0-4.9	206	Lip, gum & mouth	43	1.0	2.6	1.8-3.5	355
Pharynx	68	1.1	4.3	3.3-5.3	199	Oesophagus	38	0.8	1.7	1.1-2.2	680
Thyroid gland	64	1.0	4.3	3.2-5.3	234	Liver	33	0.7	1.9	1.2-2.7	508
Skin (NMSC exc. SCC/BCC)	47	0.7	2.6	1.8-3.4	399	Gallbladder / bile ducts	33	0.7	1.7	1.0-2.3	512
All cancers	6291	100.0	378.2	369-388	3	All cancers	4514	100.0	264.5	256-273	4

Mortality

Males						Females					
	Deaths	%	ASR	95%c.i.	Risk		Deaths	%	ASR	95%c.i.	Risk
Lung	483	22.4	26.5	24.0-28.9	32	Lung	320	18.8	16.2	14.3-18.1	53
Prostate	255	11.8	12.1	10.5-13.6	115	Breast	248	14.6	13.7	11.8-15.5	66
Colorectal	228	10.6	12.5	10.8-14.2	73	Colorectal	209	12.3	10.1	8.6-11.6	90
Colon	146	6.8	7.8	6.5-9.1	124	Colon	154	9.0	7.3	6.0-8.6	131
Rectum	82	3.8	4.7	3.7-5.8	178	Rectum	55	3.2	2.8	2.0-3.6	283
Pancreas	92	4.3	5.1	4.0-6.2	172	Pancreas	112	6.6	5.1	4.1-6.1	186
Melanoma (skin)	89	4.1	4.9	3.9-6.0	190	Unknown primary	94	5.5	4.0	3.1-4.9	262
Unknown primary	88	4.1	4.5	3.5-5.5	238	Ovary	63	3.7	3.5	2.6-4.4	255
Bladder & urinary tract	86	4.0	4.5	3.5-5.5	233	Lymphoma	63	3.7	2.7	1.9-3.4	435
Stomach	81	3.8	4.4	3.4-5.4	232	Lymphoma NOS	3	0.2	0.1	0 - 0.2	*
Mesothelioma	79	3.7	4.6	3.5-5.6	176	Hodgkin lymphoma	4	0.2	0.3	0 - 0.6	2976
Oesophagus	73	3.4	3.9	3.0-4.8	237	NHL	56	3.3	2.3	1.6-3.0	509
Lymphoma	70	3.2	3.8	2.9-4.8	231	Brain	62	3.6	3.5	2.6-4.5	224
Lymphoma NOS	1	0.0	0.1	0 - 0.2	*	Melanoma (skin)	48	2.8	2.6	1.8-3.4	356
Hodgkin lymphoma	2	0.1	0.1	0 - 0.3	4622	Leukaemia	48	2.8	2.5	1.7-3.3	433
NHL	67	3.1	3.6	2.7-4.6	248	Leukaemia NOS	2	0.1	0.1	0 - 0.2	6593
Leukaemia	65	3.0	3.7	2.7-4.6	255	Lymphoid leukaemia	13	0.8	0.4	0.2-0.7	6401
Leukaemia NOS	2	0.1	0.1	0 - 0.2	6335	Myeloid leukaemia	33	1.9	2.0	1.2-2.7	499
Lymphoid leukaemia	17	0.8	1.0	0.5-1.5	799	Leukaemia, other	0				
Myeloid leukaemia	46	2.1	2.6	1.8-3.4	397	Bladder & urinary tract	38	2.2	1.6	1.0-2.1	641
Leukaemia, other	0					Stomach	36	2.1	1.6	1.0-2.2	647
Liver	59	2.7	3.5	2.5-4.4	252	Myeloma	36	2.1	1.8	1.1-2.4	534
Brain	56	2.6	3.6	2.6-4.5	236	Gallbladder / bile ducts	34	2.0	1.6	1.0-2.2	639
Kidney	54	2.5	2.8	2.1-3.6	386	Uterus	32	1.9	1.7	1.1-2.3	463
Myeloma	45	2.1	2.5	1.8-3.3	317	Cervix	30	1.8	1.8	1.1-2.5	502
Skin (NMSC inc. SCC/BCC)	44	2.0	2.4	1.6-3.1	426	Kidney	30	1.8	1.5	0.9-2.1	586
Gallbladder / bile ducts	37	1.7	2.0	1.4-2.7	384	Oesophagus	29	1.7	1.3	0.8-1.8	786
Pharynx	22	1.0	1.4	0.8-2.0	488	Liver	24	1.4	1.1	0.6-1.6	797
Larynx	22	1.0	1.3	0.8-1.9	656	Myelodysplastic diseases	20	1.2	0.6	0.3-0.9	8264
Myelodysplastic diseases	22	1.0	0.9	0.5-1.3	1688	Skin (NMSC inc. SCC/BCC)	19	1.1	0.6	0.3-1.0	2555
All cancer deaths	2158	100.0	117.1	112-122	8	All cancer deaths	1704	100.0	84.3	80.0-88.7	11.0

(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 61 cases of cancer diagnosed in 2009, 38 males and 23 females. The most common types were leukaemias (22 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. Note this table includes 71 cases, as the classification includes some additional conditions (non-malignant brain neoplasms) that are not tabulated elsewhere as "cancers".

2.3.2 Cancer in the 15-39 years age range

Incidence: In the 15 to 39 years age range, there were 614 cancer diagnoses in 2009, more than in 2007 or 2008. There were 62 cancer-related deaths in this age group in 2009, slightly fewer than in 2008.

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, 2009: common cancers in the 15 to 39 years age group

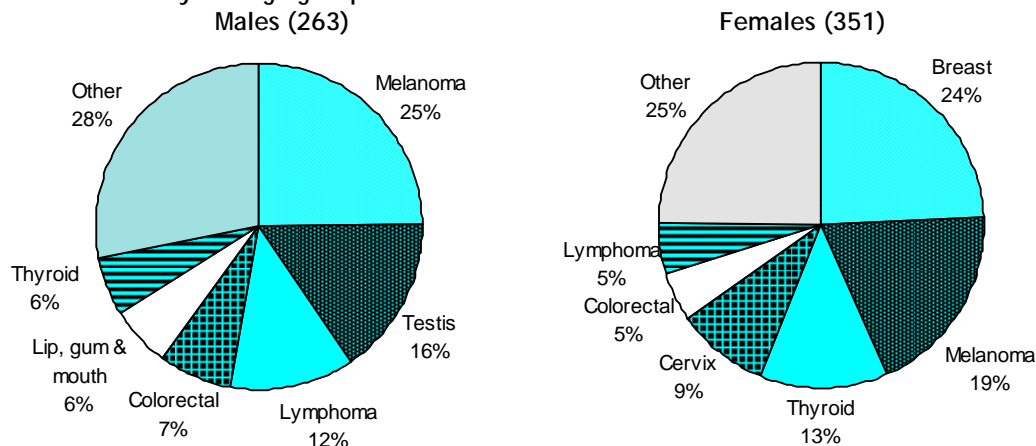
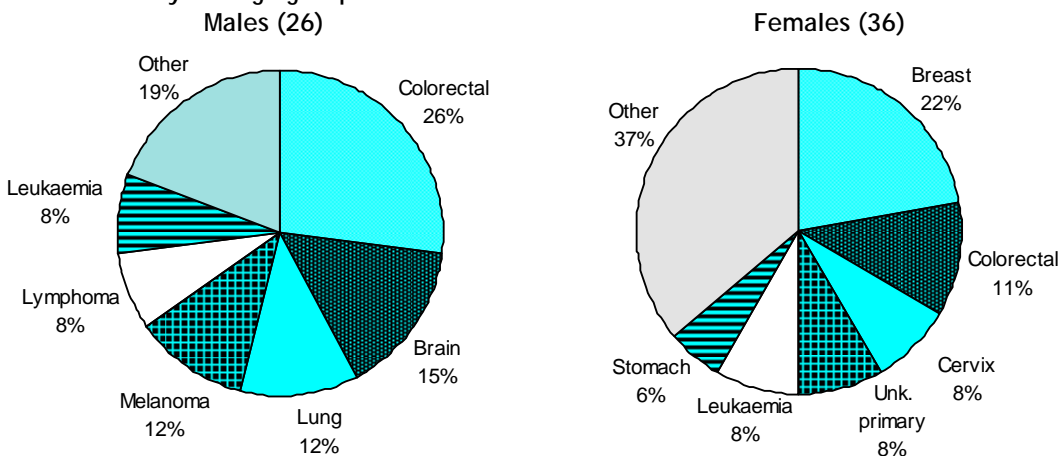


Figure 4. Cancer mortality, Western Australia, 2009: common cancers in the 15 to 39 years age group



2.3.3 Cancer in the 40-64 years age range

There were 4389 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. There were 1021 cancer-related deaths in this age range, with mortality rates slightly higher than in 2008 for both males and females.

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, 2009: common cancers in the 40 to 64 years age group

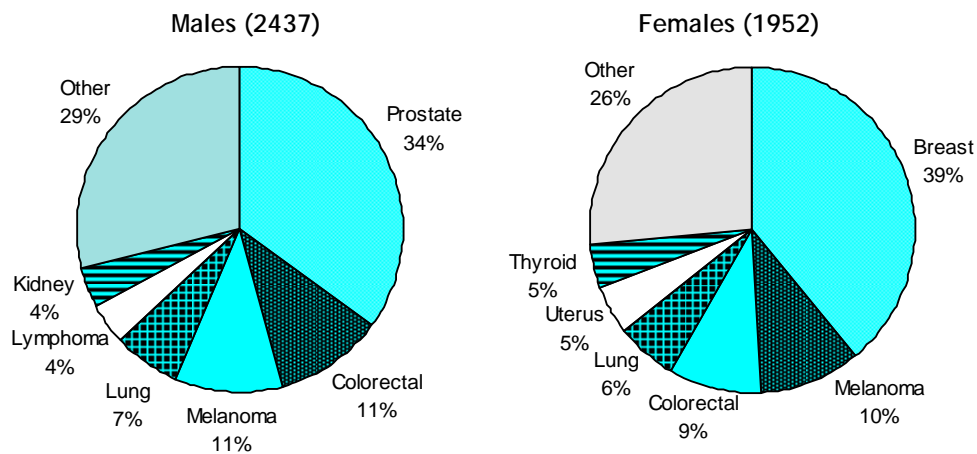
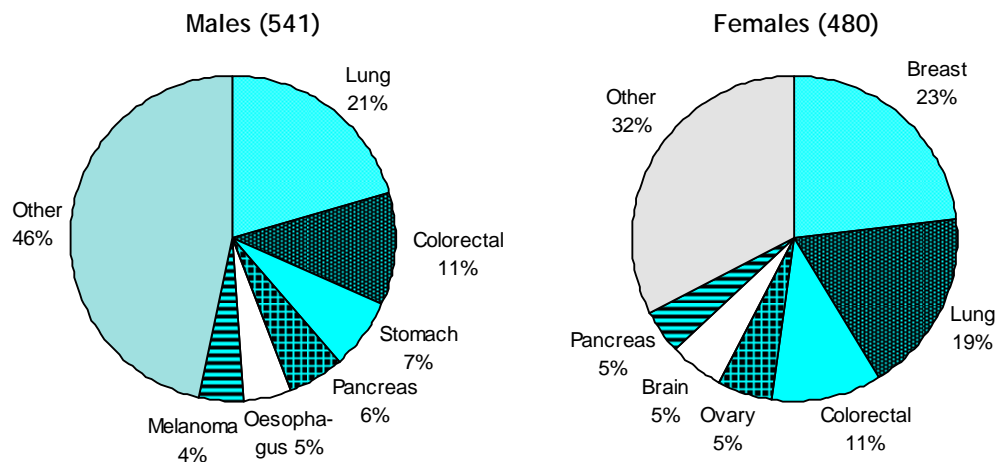


Figure 6. Cancer mortality, Western Australia, 2009: common cancers in the 40 to 64 years age group



2.3.4 Cancer in persons aged 65 and over

There were 5741 new cancer diagnoses in persons over the age of 65 years in 2009. In this age range, prostate cancer (1178 cases) outnumbered any other specific cancer type in either sex (Table 2) and accounted for 33% of diagnoses in males. Rates continue to rise in recent years, after major changes and unstable rates in the 1990s. Among females, breast cancer predominated (464 cases, 21%).

There were 2771 cancer-related deaths in this age range in 2009. Over the age of 65 years, lung cancer was the most common cause of cancer-related death, causing 598 deaths, almost 10% more than in 2008.

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, 2009: common cancers in the 65 years & over age group

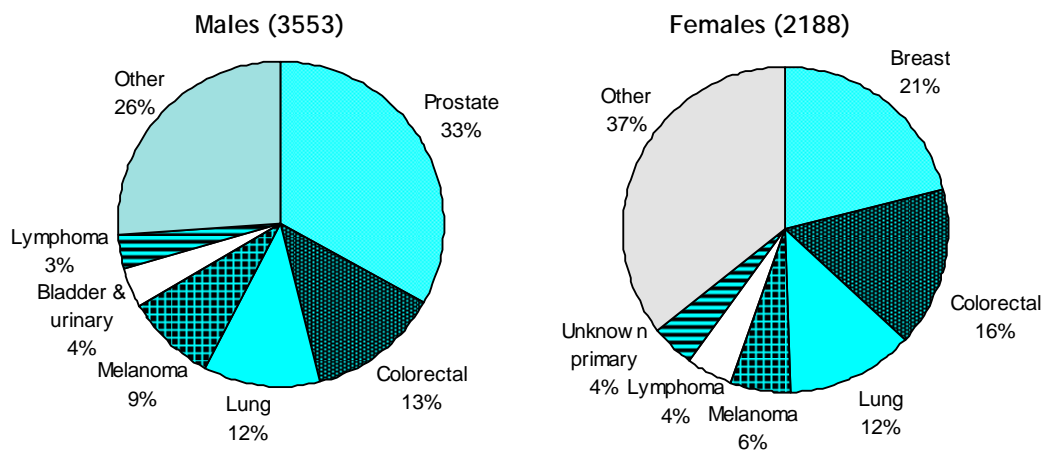


Figure 8. Cancer mortality, Western Australia, 2009: common cancers in the 65 years & over age group

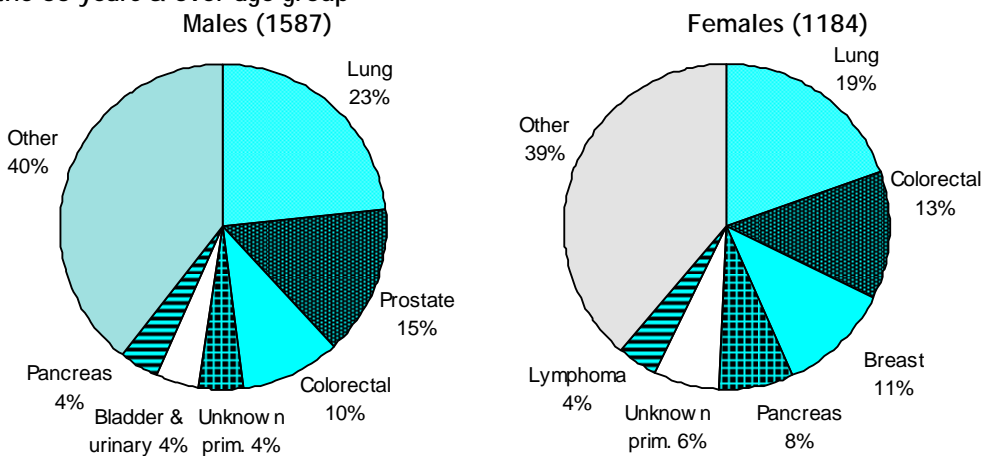


Table 2. Cancer incidence, Western Australia, 2009: leading types by sex and age group (ASR: age-adjusted rate)

15 to 39 years											
Males						Females					
	Cases	%	ASR	95%c.i.	Risk		Cases	%	ASR	95%c.i.	Risk
Melanoma (skin)	65	24.7	13.4	10.1-16.7	259	Breast	85	24.2	17.7	13.9-21.4	190
Testis	42	16.0	9.4	6.5-12.3	404	Melanoma (skin)	67	19.1	14.9	11.3-18.4	237
Lymphoma	32	12.2	7.4	4.8-10.0	524	Thyroid gland	45	12.8	10.7	7.6-13.9	352
Lymphoma NOS	0					Cervix	32	9.1	7.4	4.8-10.0	494
Hodgkin lymphoma	20	7.6	4.8	2.7-7.0	848	Colorectal	18	5.1	4.0	2.1-5.9	883
NHL	12	4.6	2.6	1.1-4.1	1366	Colon	9	2.6	2.0	0.7-3.3	1769
Colorectal	19	7.2	4.2	2.3-6.0	903	Rectum	9	2.6	2.0	0.7-3.4	1761
Colon	7	2.7	1.7	0.4-2.9	2494	Lymphoma	17	4.8	4.4	2.3-6.5	928
Rectum	12	4.6	2.5	1.1-3.9	1414	Lymphoma NOS	0				
Lip, gum & mouth	16	6.1	3.4	1.7-5.1	1058	Hodgkin lymphoma	13	3.7	3.5	1.6-5.4	1203
Thyroid gland	15	5.7	3.2	1.6-4.9	1125	NHL	4	1.1	0.9	0.0-1.9	4054
Leukaemia	14	5.3	3.4	1.6-5.2	1199	Leukaemia	13	3.7	3.2	1.4-4.9	1193
Leukaemia NOS	0					Leukaemia NOS	0				
Lymphoid leukaemia	4	1.5	0.9	0.0-1.9	4260	Lymphoid leukaemia	3	0.9	0.7	0 - 1.6	5193
Myeloid leukaemia	10	3.8	2.4	0.9-4.0	1669	Myeloid leukaemia	10	2.8	2.4	0.9-4.0	1548
Leukaemia, other	0					Leukaemia, other	0				
Brain	11	4.2	2.6	1.1-4.2	1564	Ovary	10	2.8	2.4	0.9-3.9	1596
All cancers	263	100.0	57.3	50.3-64.3	65	All cancers	351	100.0	79.3	70.9-87.7	46

40 to 64 years											
Males						Females					
	Cases	%	ASR	95%c.i.	Risk		Cases	%	ASR	95%c.i.	Risk
Prostate	851	34.9	222.3	207-237	16	Breast	764	39.1	211.4	196-226	19
Colorectal	264	10.8	70.1	61.6-78.5	52	Melanoma (skin)	196	10.0	54.0	46.4-61.5	71
Colon	149	6.1	39.3	33.0-45.6	90	Colorectal	181	9.3	49.2	42.0-56.4	74
Rectum	114	4.7	30.5	24.9-36.1	121	Colon	106	5.4	29.0	23.5-34.5	125
Melanoma (skin)	261	10.7	69.1	60.7-77.5	53	Rectum	75	3.8	20.2	15.6-24.7	180
Lung	162	6.6	42.5	35.9-49.0	81	Lung	118	6.0	31.8	26.0-37.5	109
Lymphoma	98	4.0	26.3	21.1-31.5	143	Uterus	90	4.6	24.2	19.2-29.3	141
Lymphoma NOS	5	0.2	1.3	0.2-2.5	2579	Thyroid gland	90	4.6	25.0	19.8-30.2	159
Hodgkin lymphoma	11	0.5	3.1	1.3-4.9	1330	Ovary	57	2.9	15.7	11.6-19.8	230
NHL	82	3.4	21.9	17.1-26.6	171	Lymphoma	57	2.9	15.7	11.6-19.7	230
Kidney	97	4.0	25.8	20.6-30.9	142	Lymphoma NOS	0				
Leukaemia	54	2.2	14.5	10.6-18.4	257	Hodgkin lymphoma	4	0.2	1.1	0.0-2.2	3173
Leukaemia NOS	0					NHL	53	2.7	14.6	10.6-18.5	248
Lymphoid leukaemia	32	1.3	8.6	5.6-11.5	432	Cervix	45	2.3	12.7	9.0-16.4	322
Myeloid leukaemia	22	0.9	5.9	3.5-8.4	633	Kidney	41	2.1	11.3	7.8-14.8	325
Leukaemia, other	0					Pancreas	37	1.9	9.9	6.7-13.1	344
Lip, gum & mouth	49	2.0	13.1	9.4-16.8	293	Leukaemia	33	1.7	9.0	5.9-12.1	415
All cancers	2437	100.0	644.3	619-670	6	All cancers	1952	100.0	536.6	513-560	7

65 years and over											
Males						Females					
	Cases	%	ASR	95%c.i.	Risk		Cases	%	ASR	95%c.i.	Risk
Prostate	1178	33.2	938.8	884-994	11	Breast	464	21.2	318.6	287-350	32
Colorectal	456	12.8	344.5	312-377	32	Colorectal	346	15.8	214.7	190-239	53
Colon	315	8.9	232.6	206-259	49	Colon	264	12.1	161.3	140-183	71
Rectum	140	3.9	111.3	92.2-130	90	Rectum	81	3.7	53.0	40.4-65.7	208
Lung	416	11.7	312.4	281-344	37	Lung	270	12.3	173.6	151-196	64
Melanoma (skin)	317	8.9	248.2	220-276	41	Melanoma (skin)	137	6.3	83.6	68.2-98.9	140
Bladder & urinary tract	142	4.0	101.8	84.3-119	135	Lymphoma	98	4.5	60.9	47.7-74.1	193
Lymphoma	121	3.4	90.4	73.7-107	128	Lymphoma NOS	4	0.2	1.4	0.0-2.7	*
Lymphoma NOS	4	0.1	3.1	0 - 6.3	3612	Hodgkin lymphoma	3	0.1	2.3	0 - 4.9	3297
Hodgkin lymphoma	1	0.0	0.6	0 - 1.8	*	NHL	91	4.2	57.3	44.4-70.2	205
NHL	116	3.3	86.7	70.3-103	133	Unknown primary	95	4.3	50.5	39.2-61.7	287
Unknown primary	94	2.6	65.1	51.5-78.8	239	Pancreas	92	4.2	55.0	42.6-67.4	241
Leukaemia	87	2.4	66.5	52.1-80.9	152	Uterus	80	3.7	56.5	43.1-69.8	168
Leukaemia NOS	5	0.1	3.1	0.3-5.9	6335	Bladder & urinary tract	61	2.8	33.8	24.4-43.1	398
Lymphoid leukaemia	43	1.2	36.3	25.3-47.3	221	Leukaemia	56	2.6	32.4	23.0-41.8	408
Myeloid leukaemia	39	1.1	27.2	18.3-36.0	528	Leukaemia NOS	1	0.0	0.9	0 - 2.6	6593
Leukaemia, other	0					Lymphoid leukaemia	33	1.5	19.0	11.8-26.2	674
All cancers	3553	100.0	2721.4	2630-2813	4	All cancers	2188	100.0	1393.4	1330-1457	8

Table 3. Cancer mortality, Western Australia, 2009: 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
Colorectal	7	26.9	1.6	0.4-2.8	2390	Breast	8	22.2	1.7	0.5-3.0	2019
Colon	4	15.4	1.0	0.0-2.0	4196	Colorectal	4	11.1	1.0	0.0-1.9	3952
Rectum	3	11.5	0.6	0 - 1.2	5550	Colon	3	8.3	0.7	0 - 1.5	5271
Brain	4	15.4	0.9	0.0-1.9	4237	Rectum	1	2.8	0.3	0 - 0.8	*
Lung	3	11.5	0.6	0 - 1.4	5607	Cervix	3	8.3	0.6	0 - 1.3	5348
Melanoma (skin)	3	11.5	0.6	0 - 1.4	5591	Unknown primary	3	8.3	0.7	0 - 1.4	5420
Lymphoma	2	7.7	0.4	0 - 0.9	8546	Leukaemia	3	8.3	0.8	0 - 1.6	5228
Lymphoma NOS	0				-	Leukaemia NOS	0				-
Hodgkin lymphoma	1	3.8	0.2	0 - 0.6	*	Lymphoid leukaemia	0				-
NHL	1	3.8	0.2	0 - 0.6	*	Myeloid leukaemia	3	8.3	0.8	0 - 1.6	5228
Leukaemia	2	7.7	0.6	0 - 1.4	8084	Leukaemia, other	0				-
Skin (NMSC inc. SCC/BCC)	1	3.8	0.2	0 - 0.6	*	Stomach	2	5.6	0.4	0 - 1.0	7911
Connective/ soft tissues	1	3.8	0.2	0 - 0.7	*	Lung	2	5.6	0.5	0 - 1.1	8070
Kidney	1	3.8	0.2	0 - 0.6	*	Ovary	2	5.6	0.5	0 - 1.1	8070
Unknown primary	1	3.8	0.2	0 - 0.6	*	Brain	2	5.6	0.5	0 - 1.1	8070
Larynx	1	3.8	0.2	0 - 0.6	*	Lymphoma	2	5.6	0.5	0 - 1.1	8070
All cancer deaths	26	100.0	5.8	3.5-8.1	645	All cancer deaths	36	100.0	8.1	5.4-10.8	446

40 to 64 years											
Males						Females					
	Deaths	%	ASR	95%c.i.	Risk		Deaths	%	ASR	95%c.i.	Risk
Lung	111	20.5	29.2	23.7-34.6	119	Breast	110	22.9	30.0	24.4-35.7	124
Colorectal	60	11.1	16.0	12.0-20.1	217	Lung	89	18.5	24.2	19.2-29.2	147
Colon	33	6.1	8.7	5.7-11.7	393	Colorectal	52	10.8	14.3	10.4-18.2	258
Rectum	27	5.0	7.3	4.5-10.1	485	Colon	37	7.7	10.3	7.0-13.6	365
Stomach	38	7.0	10.1	6.9-13.3	350	Rectum	15	3.1	4.1	2.0-6.1	876
Pancreas	30	5.5	7.9	5.0-10.7	439	Ovary	26	5.4	7.1	4.4-9.9	509
Oesophagus	25	4.6	6.7	4.0-9.3	550	Brain	25	5.2	6.8	4.1-9.4	508
Melanoma (skin)	24	4.4	6.2	3.7-8.7	561	Pancreas	22	4.6	5.9	3.4-8.4	627
Mesothelioma	23	4.3	6.1	3.6-8.6	571	Melanoma (skin)	21	4.4	5.7	3.3-8.2	651
Liver	22	4.1	5.8	3.4-8.2	605	Cervix	16	3.3	4.3	2.2-6.4	856
Prostate	21	3.9	5.6	3.2-8.0	603	Unknown primary	16	3.3	4.4	2.2-6.6	824
Brain	21	3.9	5.7	3.3-8.2	657	Leukaemia	11	2.3	3.0	1.2-4.8	1161
Lymphoma	20	3.7	5.3	3.0-7.6	674	Leukaemia NOS	0				-
Lymphoma NOS	1	0.2	0.3	0 - 0.8	*	Lymphoid leukaemia	2	0.4	0.6	0 - 1.3	6401
Hodgkin lymphoma	0				-	Myeloid leukaemia	9	1.9	2.5	0.8-4.1	1418
NHL	19	3.5	5.0	2.7-7.2	706	Leukaemia, other	0				-
Bladder & urinary tract	19	3.5	5.1	2.8-7.4	693	Lymphoma	10	2.1	2.8	1.1-4.6	1326
All cancer deaths	541	100.0	143.0	131-155	25	All cancer deaths	480	100.0	131.1	119-143	28

65 years and over											
Males						Females					
	Deaths	%	ASR	95%c.i.	Risk		Deaths	%	ASR	95%c.i.	Risk
Lung	369	23.3	270.7	242-299	44	Lung	229	19.3	141.9	122-162	83
Prostate	234	14.7	152.5	132-173	143	Colorectal	153	12.9	88.3	72.8-104	142
Colorectal	161	10.1	113.3	95.1-132	115	Colon	114	9.6	64.0	51.0-76.9	212
Colon	109	6.9	75.2	60.5-89.9	189	Rectum	39	3.3	24.3	15.9-32.8	429
Rectum	52	3.3	38.1	27.3-48.9	295	Breast	130	11.0	78.5	63.5-93.5	152
Unknown primary	68	4.3	45.3	34.1-56.6	372	Pancreas	90	7.6	51.8	40.0-63.7	265
Bladder & urinary tract	67	4.2	46.5	34.9-58.2	351	Unknown primary	75	6.3	37.4	28.0-46.8	413
Pancreas	62	3.9	44.8	33.2-56.4	282	Lymphoma	51	4.3	25.5	17.8-33.1	702
Melanoma (skin)	61	3.8	42.9	31.7-54.2	309	Lymphoma NOS	3	0.3	1.0	0 - 2.2	*
Mesothelioma	56	3.5	43.4	31.6-55.2	253	Hodgkin lymphoma	3	0.3	2.4	0 - 5.3	3667
Oesophagus	48	3.0	32.1	22.5-41.6	415	NHL	45	3.8	22.0	15.0-29.0	868
Lymphoma	48	3.0	34.2	24.1-44.2	367	Ovary	35	3.0	22.4	14.2-30.5	542
Lymphoma NOS	0				-	Bladder & urinary tract	35	3.0	19.2	12.1-26.3	734
Hodgkin lymphoma	1	0.1	0.9	0 - 2.7	6335	Brain	34	2.9	21.9	13.9-29.8	434
NHL	47	3.0	33.3	23.4-43.2	390	Leukaemia	32	2.7	17.0	10.5-23.5	892
Leukaemia	48	3.0	35.2	24.8-45.6	367						
All cancer deaths	1587	100.0	1124.4	1067-1182	13	All cancer deaths	1184	100.0	686.2	643-729	19

2.4 Cancer trends and projections

2.4.1 Use and methods

Projections of cancer case numbers and rates may be somewhat unreliable, as discussed in previous reports. However, these are often requested for health service planning reasons, and are presented here as the best available basis for prediction of future need for medical services. These do not take into account unknown changes in risk factors or diagnostic practices, can be adversely affected by past events, and should be used with some caution. Reliance on any mathematical procedure (in isolation from knowledge of changes in medical practice and risk factors) is risky. Using an exponentially-weighted moving average method as described in *Cancer incidence and mortality in Western Australia 2002*,⁶ updated projections for "All cancers" and the most common cancer type in males and in females, are presented here.

2.4.2 Trends and projections - incidence

While the incidence of all cancers combined tends to increase with time, differences are observed between trends for individual cancer types subject to particular influences. In particular, decreasing lung cancer incidence in males is commonly thought to be associated with a reduction in smoking prevalence, and increased prostate cancer incidence in the 1990s was thought to be associated with increased PSA testing.⁷

All cancers: Based on data for the last 10 years, incidence in males is increasing significantly by 0.71% per year with annual new cases expected to reach 7692 by 2014, with the incidence rate (ASR) rising from 378 to 382 per 100,000 per year (Table 4). In females there has been a non-significant decrease of 0.21% per year, and projection suggests little change in the incidence ASR.

Prostate cancer: Prostate cancer incidence doubled in 2 years in the early 1990s, then halved again in 2 years, and has since been on a less extreme but consistent increasing trend. Based on data for the last 10 years, incidence in males is increasing significantly by 5.46% per year, with annual new cases expected to reach 2715 by 2014 (Table 4). The incidence ASR is expected to increase only from 121 to 134 per 100,000 but case numbers are also increased by the increasing size and longevity of the population.

Breast cancer in females: Based on data for the last 10 years, breast cancer incidence in females is decreasing slightly by 0.48% per year, though this is not statistically significant. The incidence ASR is expected to fall from 82 to 81 per 100,000 per year by 2014, though annual case numbers can be expected to rise to 1501 in the same time (Table 4).

Trends in other common cancer types:

Colorectal cancer, males - decreasing by 1.7% per year (significant, $p < .0001$)

Melanoma, males - decreasing by 1.5% per year (significant, $p = .0009$)

Lung cancer, males - decreasing by 2.2% per year (significant, $p = .0004$)

Colorectal cancer, females - decreasing by 0.9 per year (not significant, $p = .066$)

Melanoma, females - decreasing by 2.0% per year (significant, $p = .0005$)

Lung cancer, females - increasing by 1.4% per year (significant, $p = .0011$)

Table 4. Trends and projections, all cancers and two most-common cancers, Western Australia, 2000-2019

Year	All cancers (males)				All cancers (females)			
	Cases	95% c.i.	ASR	95% c.i.	Cases	95% c.i.	ASR	95% c.i.
2000	4235	-	344.3	333.6-355.0	3455	-	261.7	252.4-271.0
2001	4329	-	339.8	329.4-350.3	3664	-	264.6	255.4-273.7
2002	4857	-	368.7	358.0-379.4	3926	-	278.9	269.6-288.3
2003	4952	-	364.1	353.6-374.6	3957	-	273.4	264.2-282.5
2004	5273	-	375.7	365.2-386.2	4102	-	277.6	268.5-286.6
2005	5303	-	364.7	354.5-374.8	4059	-	265.5	256.7-274.2
2006	5546	-	366.6	356.6-376.6	4301	-	272.3	263.6-281.1
2007	5676	-	364.4	354.6-374.2	4112	-	254.8	246.5-263.2
2008	6060	-	375.3	365.5-385.0	4457	-	264.6	256.3-272.9
2009	6291	-	378.2	368.6-387.9	4514	-	264.5	256.3-272.8
2010	6519	6396-6641	370.0	360.7-379.3	4783	4703-4863	266.1	258.0-274.2
2011	6795	6668-6923	373.0	363.8-382.2	4914	4831-4997	265.5	257.6-273.5
2012	7092	6964-7221	376.0	366.9-385.1	5052	4966-5137	264.9	257.1-272.7
2013	7390	7259-7520	379.1	370.1-388.0	5189	5101-5277	264.3	256.6-272.0
2014	7692	7560-7825	382.2	373.3-391.0	5329	5239-5420	263.7	256.1-271.4
2019	9338	9189-9486	397.9	389.4-406.5	6083	5982-6185	260.9	253.7-268.0

Trend: significant (P < .0001) 0.71% per year.

Trend: not significant (P = .606) -0.21% per year.

Year	Prostate cancer (males)				Breast cancer (females)			
	Cases	95% c.i.	ASR	95% c.i.	Cases	95% c.i.	ASR	95% c.i.
2000	830	-	66.0	61.4-70.6	1026	-	82.8	77.5-88.0
2001	965	-	75.4	70.5-80.3	1106	-	87.0	81.7-92.3
2002	1254	-	95.5	90.0-100.9	1149	-	87.4	82.2-92.7
2003	1271	-	92.8	87.6-98.1	1141	-	85.0	79.9-90.1
2004	1520	-	108.6	103.0-114.2	1150	-	82.9	77.9-87.8
2005	1495	-	101.9	96.6-107.2	1165	-	81.9	77.1-86.8
2006	1649	-	108.3	102.9-113.7	1251	-	85.6	80.7-90.5
2007	1813	-	115.7	110.3-121.2	1121	-	73.8	69.3-78.3
2008	1977	-	122.1	116.6-127.6	1344	-	86.4	81.7-91.2
2009	2030	-	121.4	116.0-126.8	1313	-	81.7	77.1-86.3
2010	1990	1815-2166	111.7	106.6-116.7	1377	1334-1419	82.3	77.8-86.8
2011	2158	1975-2340	117.1	112.1-122.2	1409	1365-1452	82.0	77.6-86.5
2012	2337	2149-2526	122.6	117.5-127.7	1440	1395-1484	81.6	77.2-86.0
2013	2523	2328-2718	128.1	123.0-133.2	1470	1425-1516	81.2	76.9-85.5
2014	2715	2513-2917	133.6	128.5-138.8	1501	1454-1547	80.8	76.5-85.0
2019	3806	3571-4041	161.8	156.5-167.1	1658	1604-1711	78.8	74.8-82.8

Trend: significant (P < .0001) 5.46% per year.

Trend: not significant (P = .129) -0.48% per year.

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, and 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 more reliable than clinical findings or imaging, and diagnoses based only on a death certificate are not generally well-regarded (see below). The contribution of the different methods is seen in Table 5, with a high 94% of cases based on a specific pathology test. The common cancers least likely to be based on a microscopic test, were liver cancers (59%), cancers of unknown primary site (66%) and pancreatic cancer (69%).

Table 5. Cancer in Western Australia, 2009: Diagnosis methods

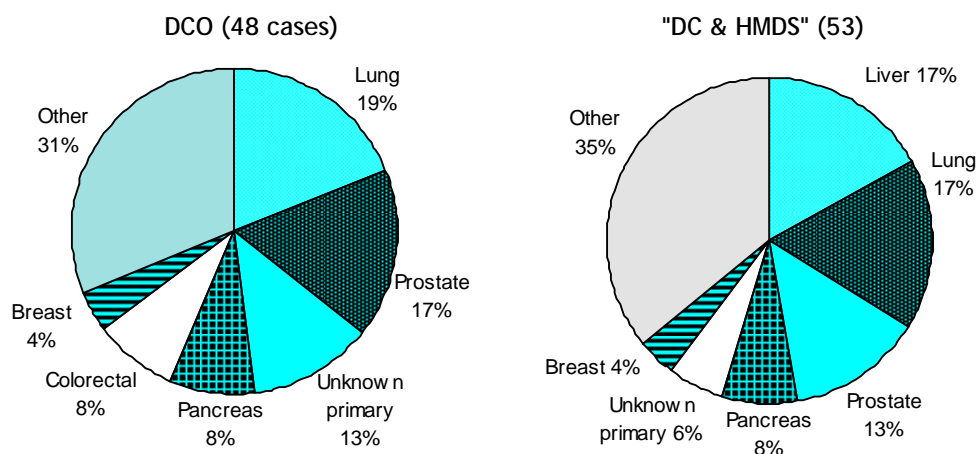
Basis of diagnosis	Cases	%	Basis of diagnosis	Cases	%
Microscopic NOS	9	0.1	Surgery	6	0.1
Histology	8932	82.7	Necropsy	13	0.1
Cytology	1104	10.2	DCO	48	0.4
Haematology	135	1.2	DC & HMDS	53	0.5
Imaging	365	3.4	Unknown	42	0.4
Clinical	81	0.7			
Biochemical/Immunologic test	17	0.2	All "microscopic" bases	10182	94.2
			Total	10805	(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 2009 (0.44% of all cases, reduced since 2007 and 2008) (Figure 9).

The Registry also uses hospital discharge statistics (“Hospital Morbidity Data System”) to reduce letter-based enquiries and case note review, if data are consistent. There were 53 such “DC and HMDS” cases recorded for 2009 (Figure 9).

Figure 9. Death Certificate Only (DCO) and “DC & HMDS” cancers 2009: common types



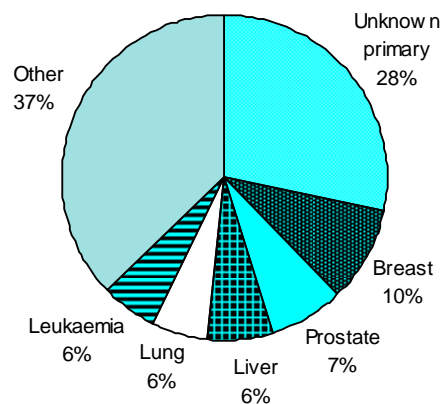
Having a low proportion of DCO cases is widely regarded as an important index of data quality in a Cancer Registry. Although thought to be better than DCOs, reliability and

specificity concerns limit the reliance placed on the “DC & HMDS” records. The combined total of these two types of records - 0.9% - is an indicator of a high standard in the Registry’s data collection.

3.3 Registry enquiries

In search of better information on existing Cancer Registry cases, during 2009 and 2010 the Registry initiated 6213 “Enquiries”, initiated via a hospital file request (3717) or a letter or call to a doctor or hospital (2487), and wrote 2435 individual letters. Not all such enquiries are successful, and not all can be resolved at the time of writing any report. In mid-2011, there were still 124 enquiries “outstanding” for 2009 cancer diagnoses, and 33 which had been abandoned. As might be expected, the related cancers were mainly unknown primaries, common cancers or those most often reported as “DCO” cases (Figure 10).

Figure 10. Unresolved case enquiries - most common cancer types, 2009 (124 cases)



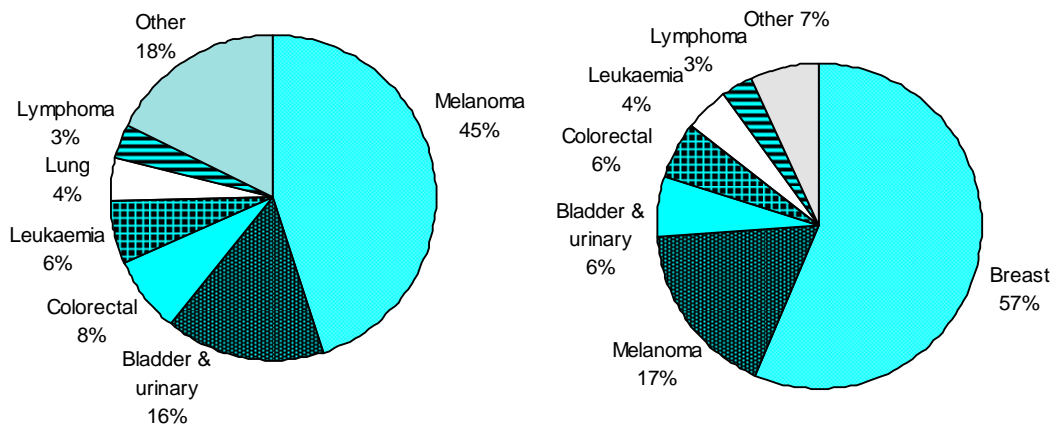
3.4 “Non-counted” cancers

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. The effect is to reduce the numbers of cases that would otherwise be 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 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 for males and females in Figure 11. The impact on incidence statistics if these were counted, would be an increase of approximately 5% - so effective data linkage and de-duplication is required to ensure the comparability of Cancer Registry statistics worldwide.

Figure 11. "Non-counted" cancers, 2009: common types
 Males (260 cases) Females (230 cases)



3.5 Non-invasive neoplasms recorded

The Registry receives and records a considerable number of reports of benign neoplasms, neoplasms diagnosed at an early "pre-invasive" stage (*in situ* neoplasms), and others of types whose malignant potential or behaviour is uncertain such as "borderline" ovarian tumours or carcinoid tumours. *In situ* breast tumours are low in number compared with invasive ones. However, for some *in situ* tumours, the number of cases matches (melanoma) or even exceeds (cervix) the number of invasive cases defined as "cancers" and recorded elsewhere in this report (Table 6).

Table 6. Non-invasive neoplasms recorded in WA Cancer Registry, 2009

Type	Males	Females	All
Benign CNS neoplasms	32	84	116
"Uncertain behaviour" or borderline neoplasms			
Ovary	0	36	36
CNS	15	19	34
Bowel	25	24	49
<i>In situ</i> neoplasms			
Breast	2	231	233
Colorectal	27	22	49
Cervix	0	945	945
Melanoma (skin)	678	451	1129
Non-melanoma (skin)	4	0	4
<i>In situ</i> SCC or BCC skin	43	22	65
Bladder	447	145	592
Urinary tract	10	4	14
Other	133	74	207

4. References

- 1 Threlfall TJ, Thompson JR (2010). *Cancer incidence and mortality in Western Australia, 2008*. Department of Health, Western Australia, Perth. Statistical series number 87.
- 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 Threlfall TJ, Thompson JR (2007). *Cancer incidence and mortality in Western Australia, 2005*. Department of Health, Western Australia, Perth. Statistical Series Number 81.
- 5 World Health Organization (2000) *ICD-O: International classification of diseases for oncology* (Third Edition). WHO, Geneva.
- 6 Threlfall TJ, Thompson JR (2004) *Cancer incidence and mortality in Western Australia, 2002*. Department of Health, Western Australia, Perth. Statistical series number 71.
- 7 Threlfall TJ, English DR, Rouse IL (1998) Prostate cancer in Western Australia: trends in incidence and mortality from 1985 to 1996. *MJA* 169, 21-24.

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

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.

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 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 W.A. 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 free 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". Records which are incomplete or which are 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 that following confirmation of death information. Registry records that are duplicates of existing cases are now handled by cross-referencing to the "valid" case, rather than deletion, minimizing 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, customized 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 characterization 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) (ICDO-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 does use 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 those in Jensen *et al* (1991).^b

WACR now uses the ICDO-3-based table as promulgated by the International Association of Cancer Registries (refer to <http://www.iacr.com.fr/>). 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.

^b Jensen OM, Parkin DM, MacLennan R *et al* (1991) *Cancer Registration: Principles and methods*. IARC Scientific Publications No. 95, Lyon, France.

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 underestimates cure rates. To allow better analysis, the Registry now separately records all tumours, and statistics counting tumours, rather than cases, can be provided if required.

This Report uses the "multiple-primary" rules based on the ICDO-3 classification and tumour groupings will differ slightly from those used 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.

^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.

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,⁵ 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 hospitalization 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 System, which records details of all hospitalizations 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.

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.

Appendix 1B. Current issues

Registry staffing and workload

In 2003, a long process seeking reclassification of "Clerical officers" to a higher level, redesignated "Data quality officers", came to a successful conclusion. 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 Officers	3.5 fte
Mesothelioma research officer	0.25 fte
Analyst/programmer	1.0 fte

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

Workload is not adequately represented by reported "cancer" totals. In 2005, there were 9151 invasive cancer cases as mentioned earlier in this report. However, in the same year there were 16275 pathology records added to the registry databases, and 20532 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, has recently been completed and was summarized 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

ABS	Australian Bureau of Statistics
Age-adjusted rate	- rate resulting from age-standardization using only a subset of the entire age range for cases and population, e.g. 0 - 15 years.
ASR	Age-standardized 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
CHIC	Confidentiality of Health Information Committee
DCO	Death certificate only
LHN	Lymphohaematopoietic Neoplasms
NMSC	Non-melanoma skin cancer
SCC	Squamous cell carcinoma
SD	Standard deviation
ICD-O	International Classification of Diseases for Oncology
LR	Lifetime risk (to a particular age, usually 75 years)
NOS	Not otherwise specified
PYLL	Person-years of life lost (before a particular age, usually 75 years)

Additional terms used in column headings 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 <i>n</i>). 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).

^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, ie "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 analyzed, 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-standardized 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 standardization 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 standardization. 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 Standardized Incidence (or Mortality) Ratio and a 95% confidence interval.

Relative survival has been calculated using Relsurv 2.5 (Hedelin^c) which produces 5-year survival for even most recent cases by mathematical modelling. Detailed methods may be found in Threlfall TJ, Brameld K (2000) *Cancer survival in Western Australian residents, 1982-1997* (see WACR Publications) - which used an earlier version of the software.

^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.

^c Hedelin G (2001) Relsurv A program for relative survival. Laboratory for Epidemiology and Public Health, Faculty of Medicine, 6700 Strasbourg Cedex, France.

Cumulative Incidence and Lifetime 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, while cumulative rates are commonly presented as percentages affected. In Registry reports, risk is usually presented as lifetime 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 W.A. population data were used for calculation of 2009 rates in this report

Age	Males	(%)	Females	(%)	Total	(%)
0- 4	76509	6.7	72760	6.6	149269	6.6
5- 9	72629	6.4	68371	6.2	141000	6.3
10-14	76854	6.8	71453	6.5	148307	6.6
15-19	80834	7.1	75572	6.8	156406	7.0
20-24	88239	7.8	80455	7.3	168694	7.5
25-29	87430	7.7	78957	7.1	166387	7.4
30-34	79141	7.0	75971	6.9	155112	6.9
35-39	85454	7.5	82505	7.5	167959	7.5
40-44	82618	7.3	80052	7.2	162670	7.2
45-49	82513	7.2	80985	7.3	163498	7.3
50-54	75089	6.6	74386	6.7	149475	6.7
55-59	67618	5.9	66340	6.0	133958	6.0
60-64	58906	5.2	56161	5.1	115067	5.1
65-69	41997	3.7	41315	3.7	83312	3.7
70-74	31672	2.8	32960	3.0	64632	2.9
75-79	23326	2.0	26416	2.4	49742	2.2
80-84	16103	1.4	21116	1.9	37219	1.7
85 +	11189	1.0	21161	1.9	32350	1.4
TOTAL	1138121	(100)	1106936	(100)	2245057	(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 2 Area Health Services (AHS) (metropolitan) and the Country Health Service (WACHS), comprising 7 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 synchronized to ensure accurate calculation of incidence and mortality rates in this report.

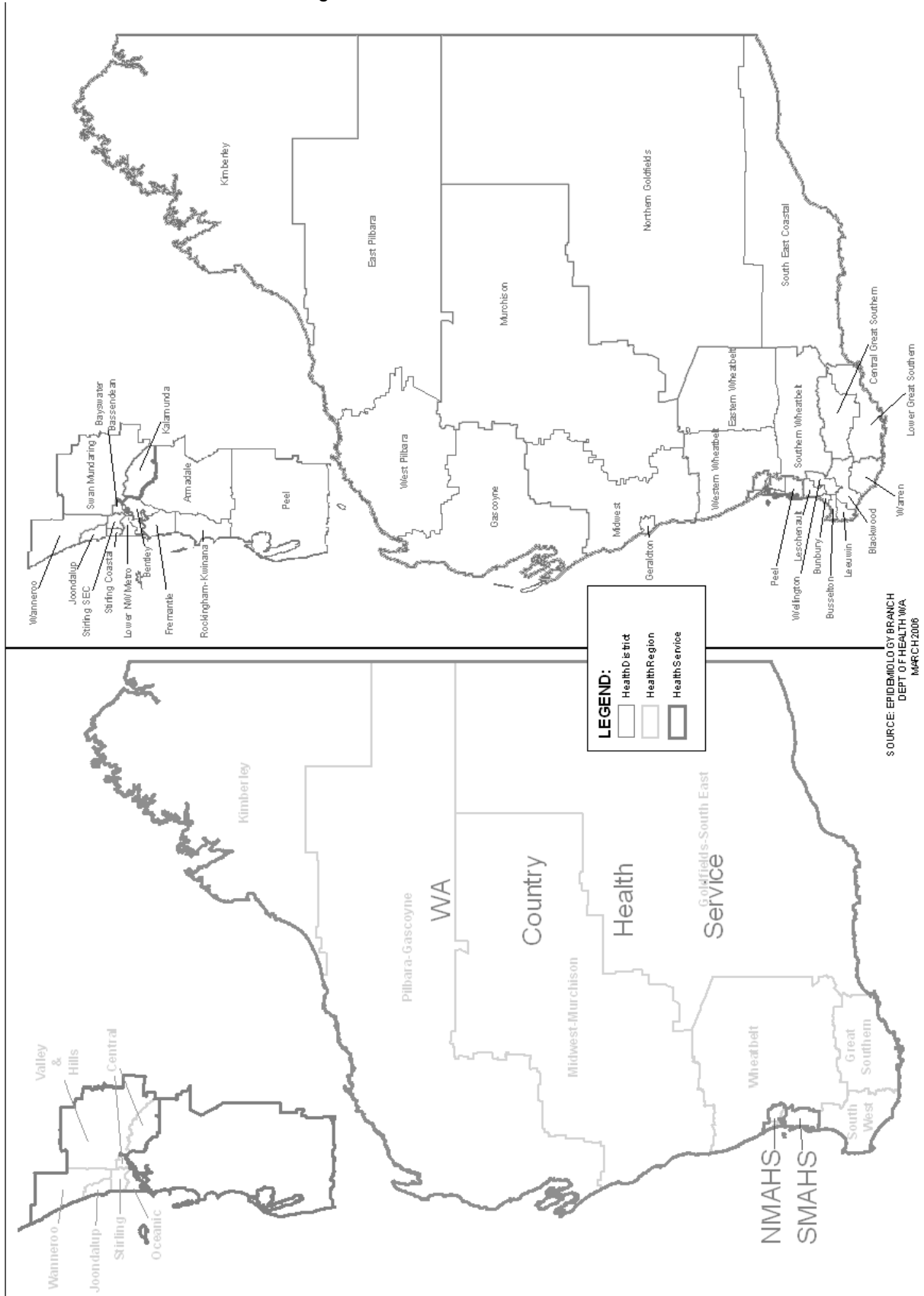
The table and maps below should assist comparison of boundaries and area names with those used in previous reports.

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

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

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

W.A. Area Health Service, Region and Health District boundaries



Appendix 2D. Confidentiality guidelines

1. Responsibility for the confidentiality of data held by the Cancer Registry will ultimately lie with the Director General of Health (hereafter referred to as the Director General).
2. All Cancer Registry staff will be instructed regarding the need for confidentiality. In addition, Cancer Registry staff will be required to sign a confidentiality declaration. The Principal Medical Officer of the Cancer Registry will be responsible to the Director General for ensuring that procedures for ensuring confidentiality are maintained.
3. Release of data may occur at a number of levels:
 - (a) Summarized 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.
 - (b) More detailed statistical information, which may include 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.
 - (c) Identified information will normally be made available to relevant Australian State or Territory Cancer Registries and to the 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.
 - (d) 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 if there is concern regarding the identification of individual service providers.
 - (e) Applications for further information required for specific areas of research will be referred to the Human Research Ethics Committee which, subject to formal application, may approve the release of identified information to researchers. Such approval will normally include directions regarding steps which may be taken by the researcher in approaching other persons or bodies for further information with respect to persons so identified.
 - (f) Approval for the release of identified information for the purposes of research (i.e. in the case of (e) above) will be subject to the **Practice Code for the Use of Personal Health Information**. This Code includes requirements for written protocols, signed confidentiality declarations, and consent. The aims of the Committee are summarized in the Terms of Reference thus:
To review projects requiring the use or disclosure of personal health information without consent to ensure:
 - *The public interest in the project outweighs the public interest in the protection of privacy;*
 - *The project cannot be conducted using non-identifiable information;*
 - *It is impracticable to seek consent from the people whose information is to be used or disclosed;*
 - *The information requested is the minimum necessary to accomplish the purpose; and*
 - *The project ensures the security of the information.*The Committee's details and relevant documentation may be found at <http://www.health.wa.gov.au/healthdata/HREC/index.cfm>

Appendix 2E. Cancer notification regulations

NOTE these Regulations, in force until June 2010, have been superseded by new Regulations – refer to the new Regulations and a summary of changes at <http://www.health.wa.gov.au/wacr/home/regulations.cfm>

HEALTH (NOTIFICATION OF CANCER) REGULATIONS 1981*

(as modified by the Health (Notification of Cancer) Amendment Regulations 1996)**

MADE by His Excellency the Governor in Executive Council.

- | | | |
|----|--|--|
| 1. | These regulations may be cited as the Health (Notification of Cancer) Regulations 1981. | Citation. |
| 2. | These regulations shall come into operation on 1 August 1981 | Commencement. |
| 3. | In these regulations, unless the contrary intention appears, the term "cancer" means any malignant growth of human tissue which if unchecked is likely to spread to adjacent tissue and beyond its site of origin and includes -
(a) all <i>in situ</i> neoplasms;
(b) all malignant neoplasms of the skin other than primary basal cell carcinoma and primary squamous cell carcinoma;
(c) all neoplasms of the brain, spinal cord and cranial nerves, and any other intracranial neoplasms, whether benign or malignant. | Interpretation. |
| 4. | Cancer is prescribed as a condition of health to which Part IXA of the Health Act 1911 applies. | Cancer prescribed as a condition of health. |
| 5. | (1) A medical practitioner who undertakes pathological or biochemical examinations of specimens of human origin, including blood, shall, within 30 days of becoming aware that any specimen indicates that the person from whom it is taken suffers from cancer, forward to the Executive Director of Public Health a copy of any report that he may make upon the examination.

(2) A report made under subregulation (1) of this regulation in respect of any person shall include -
(a) the full name and address of the person;
(aa) the sex and date of birth of the person;
(b) the name of the medical practitioner by whom the person is referred for examination; and
(c) if the person is a patient in a hospital, the name and address of the hospital. | Notification by pathologist. |
| 6. | A person who is in charge of any place in which cancer is treated by ionising radiation or accelerated atomic particles shall, within 30 days of the first occasion on which any person is so treated, furnish the Executive Director of Public Health with the following information in relation to that person, namely -
(a) full name and address of the person;
(b) sex and date of birth of the person; and
(c) the type of cancer for which that person is being treated.
(d) the name of the medical practitioner by whom the person is referred for examination; and
(e) if the person is a patient in a hospital, the name and address of the hospital. | Notification by radiation oncologist. |
| 7. | A fee of \$4 for each person in respect of whom notification is made under regulation 5 or 6 is payable to the person who makes the notification to the Executive Director of Public Health. | Fee for notification. |
| 8. | (1) Where the Executive Director of Public Health is notified of the name of a person who suffers from cancer or who is treated for cancer the Executive Director of Public Health may request any medical practitioner or person in charge of a hospital to provide him with any information of the kind set out in the Schedule to these regulations that is known to the medical practitioner in relation to that person.

(2) A person to whom a request is made pursuant to subregulation (1) of this regulation shall comply with that request within 30 days of the receipt of the request. | Executive Director of Public Health may require further particulars. |
| 9. | (1) A person who contravenes a provision of the regulations specified in the Table to this subregulation commits an offence. | |
| | Table
Regulations 5, 6 and 8(2). | |
| | (2) A person who commits an offence under subregulation (1) is liable to a penalty which is not more than \$1,000 and not less than -
(a) in the case of a first offence, \$100;
(b) in the case of a second offence, \$200; and
(c) in the case of a third or subsequent offence, \$500. | |

(* Published in the Gazette of 24 July 1981 at pp. 3056-6. For amendments to 15 January 1996 see 1994 Index to Legislation of Western Australia, Table 4, pp. 130-131.)

** Presented in good faith as an accurate representation of the content of Regulations and Schedule as amended February 1996.

HEALTH (NOTIFICATION OF CANCER) REGULATIONS 1981*
(as modified by the Health (Notification of Cancer) Amendment Regulations 1996)**

(continued)

Schedule.
NOTIFICATION OF CANCER.

NAME OF PATIENT:
ADDRESS:
SEX:
DATE OF BIRTH:
OCCUPATION:
MARITAL STATUS:
PLACE AND COUNTRY OF BIRTH:
RACE:
DATE OF DIAGNOSIS OF CANCER:
PLACE OF RESIDENCE OF PATIENT AT DIAGNOSIS OF CANCER:
DATE OF ADMISSION OR OUTPATIENT CONSULTATION:
PRIMARY SITE OF CANCER (where known):
MORPHOLOGICAL SUBTYPE OF CANCER (where known):
METHOD OF DIAGNOSIS OF CANCER:

By His Excellency's Command.

Clerk of the Council.

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 (not 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 (<i>excludes renal pelvis C65</i>)
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 ICDO-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 ICD-10), 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	ICDO-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 / N-K 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	Malig. histiocytic/dendritic cell neoplasms	HIH	9750, 9754-9758
4c3	Other & U/S immunoproliferative neoplasms	HII	9760-9764

*9597, *9598 and *9599 are W.A.C.R. 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 ICDO classification as code 9591.

Appendix 2G. WACR publications

Note: It is strongly recommended that retrospective studies utilize 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.

Appendix 2H. Guide to tables in Appendix 3

Note: The order of cancer types in the tables in Appendix 2F are 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 and squamous cell carcinoma (ICDO-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 ("all cancer deaths", "all cancers") appears on page A3-19. The "Total deaths of Cancer Registry cases" on page A3_20 includes noncancer and all other deaths in persons with a valid WA tumour record.

Appendix 3A. Cancer incidence, Western Australia, 2009

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		
Lip, gum & mouth (C000-C069) (not C01 C02)																											
M					3	3	4	6	10	8	8	14	9	8	8	11	7	3		102	6.5	5.2-7.7	100.0	0.7	152	9.3 (7.5-11.1)	
					3.4	3.4	5.1	7.0	12.1	9.7	10.7	20.7	15.3	19.0	25.3	47.2	43.5	26.8									
F					1			3	3	7	4	2	4	6	3	4	4	2		43	2.6	1.8-3.5	100.0	0.3	355	3.7 (2.6-4.9)	
					1.2			3.6	3.7	8.6	5.4	3.0	7.1	14.5	9.1	15.1	18.9	9.5									
Tongue (C010-C029)																											
M							1	1	1	3	5	4	8	8	2	5	2	1		41	2.6	1.8-3.4	95.0	0.3	341	3.6 (2.5-4.8)	
							1.3	1.2	1.2	3.6	6.7	5.9	13.6	19.0	6.3	21.4	12.4	8.9									
F			1				1		2	4	2	2	3	2	1	3	2	1		24	1.5	0.9-2.1	100.0	0.1	690	2.1 (1.2-2.9)	
			1.3				1.3		2.5	4.9	2.7	3.0	5.3	4.8	3.0	11.4	9.5	4.7									
Parotid gland (C070-C079)																											
M								1	1	1	3	3			1		1	1		12	0.7	0.3-1.2	92.0	0.1	1217	1.0 (0.4-1.6)	
								1.2	1.2	1.3	4.4	5.1			3.2		6.2	8.9									
F			1						2		1	1	2				2	2		11	0.6	0.2-1.1	100.0	0.1	1678	0.9 (0.4-1.4)	
			1.3						2.5		1.5	1.8	4.8				9.5	9.5									
Major salivary glands (not parotid) (C080-C089)																											
M						1			1	2			1	2				1		8	0.6	0.2-0.9	100.0	0.1	1743	0.7 (0.2-1.2)	
						1.1			1.2	2.7			1.7	4.8				8.9									
F							1				2									3	0.2	0 - 0.4	100.0	0.0	4732	0.2 (0 - 0.5)	
							1.2				3.0																
Pharynx (C090-C149) (not C11)																											
M								2		6	13	8	16	8	5	6	3	1		68	4.3	3.3-5.3	97.0	0.5	199	5.9 (4.5-7.4)	
								2.3		7.3	17.3	11.8	27.2	19.0	15.8	25.7	18.6	8.9									
F							1	1	2	1	2	1	2	3		1		1		12	0.8	0.3-1.2	92.0	0.1	1143	1.0 (0.4-1.6)	
							1.2	1.2	2.7	1.5	3.6	7.3				3.8		4.7									
Nasopharynx (C110-C119)																											
M						1			2	1	2	3	1							10	0.7	0.3-1.1	100.0	0.1	1474	0.8 (0.3-1.4)	
						1.1			2.4	1.2	2.7	4.4	1.7														
F											1									1	0.1	0 - 0.2	100.0	0.0	*	0.1 (0 - 0.2)	
											1.5																
Oesophagus (C150-C159)																											
M								5	4	8	10	9	12	14	10	10	6			88	5.1	4.0-6.2	95.0	0.6	161	8.3 (6.6-10.1)	
								6.1	4.8	10.7	14.8	15.3	28.6	44.2	42.9	62.1	53.6										
F									2	3	5	3	2	7	8	8				38	1.7	1.1-2.2	97.0	0.1	680	3.1 (2.1-4.1)	
									2.7	4.5	8.9	7.3	6.1	26.5	37.9	37.8											
Stomach (C160-C169)																											
M							1	1	3	5	8	15	18	12	16	10	21	11		121	6.8	5.6-8.1	95.0	0.8	130	11.4 (9.4-13.5)	
							1.3	1.2	3.6	6.1	10.7	22.2	30.6	28.6	50.5	42.9	130.4	98.3									
F							2	2		5	2	1	3	5	8	3	7	7		46	2.5	1.7-3.2	93.0	0.3	351	4.0 (2.9-5.2)	
							2.6	2.4		6.2	2.7	1.5	5.3	12.1	24.3	30.3	14.2	33.1									
Small intestine (C170-C179)																											
M					1			1	1	2	2	2	1	4	3	2		4		23	1.5	0.9-2.2	96.0	0.2	608	2.1 (1.2-3.0)	
					1.2			1.3	1.2	2.4	2.4	2.7	1.5	6.8	7.1	6.3		35.7									
F										1	2	1		1	2		1			8	0.5	0.1-0.8	100.0	0.1	1437	0.7 (0.2-1.2)	
										1.2	2.7	1.5		2.4	6.1		4.7										

Appendix 3A. Cancer incidence, Western Australia, 2009

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					1			4	4	10	22	48	78	95	102	97	71	51	583	32.9	30.1-35.6	88.0	4.0	25	56.3 (51.7-60.9)	
					1.1			4.7	4.8	12.1	29.3	71.0	132.4	226.2	322.1	415.8	440.9	455.8								
F					1	1		3	5	4	28	35	46	52	62	65	52	39	393	20.5	18.3-22.7	88.0	2.5	40	33.9 (30.5-37.3)	
					1.2	1.3		3.6	6.2	4.9	37.6	52.8	81.9	125.9	188.1	246.1	246.3	184.3								
Thymus (C370-C379)																										
M								1						1		1			3	0.2	0 - 0.4	100.0	0.0	5632	0.3 (0 - 0.6)	
								1.2						2.4		4.3										
F						1					1	1							3	0.2	0 - 0.5	67.0	0.0	4857	0.3 (0 - 0.6)	
						1.3					1.3	1.5														
Pleura, heart & mediastinum (C380-C389)																										
M	1									1			1						3	0.3	0 - 0.7	100.0	0.0	4744	0.2 (0 - 0.5)	
	1.3									1.2			1.7													
F															1				1	0.1	0 - 0.2	100.0	0.0	6593	0.1 (0 - 0.3)	
															3.0											
Bones, joints & articular cartilages (C400-C419)																										
M		1	2				1	1	1			1	1		1	2			11	0.8	0.3-1.3	91.0	0.1	1490	1.0 (0.4-1.6)	
		1.2	2.3				1.2	1.2	1.2			1.5	1.7		3.2	8.6										
F			2				2		1						1	1		1	8	0.5	0.1-0.9	100.0	0.0	2137	0.7 (0.2-1.2)	
			2.5				2.5		1.3						3.0	3.8		4.7								
Skin (melanoma only) (C440-C449; M-8720 - 8790)																										
M		1	5	7	18	34	24	36	40	77	84	85	92	53	49	38			643	39.6	36.5-42.7	99.0	4.8	21	59.2 (54.5-63.8)	
		1.2	5.7	8.0	22.7	39.8	29.0	43.6	53.3	113.9	142.6	202.4	290.5	227.2	304.3	339.6										
F			7	10	24	26	32	33	37	49	45	24	28	28	22	35			400	24.8	22.3-27.4	100.0	2.6	40	34.5 (31.1-37.9)	
			8.7	12.7	31.6	31.5	40.0	40.7	49.7	73.9	80.1	58.1	85.0	106.0	104.2	165.4										
Skin (not melanoma/SCC/BCC) (C440-C449)																										
M		1				2	1		3		2	6	4	6	7	8	7		47	2.6	1.8-3.4	100.0	0.3	399	4.7 (3.3-6.0)	
		1.3				2.5	1.2		3.6		3.0	10.2	9.5	18.9	30.0	49.7	62.6									
F			1	1	1			1		3	2	5	3	1	7	8			33	1.6	1.0-2.2	100.0	0.2	583	2.7 (1.7-3.6)	
			1.2	1.3	1.3			1.2		4.5	3.6	12.1	9.1	3.8	33.2	37.8										
Mesothelioma (M905; ICD10 C45)																										
M						1		3	3	1	9	18	18	13	11	4			81	4.7	3.6-5.7	95.0	0.6	160	7.9 (6.1-9.6)	
						1.2		3.6	4.0	1.5	15.3	42.9	56.8	55.7	68.3	35.7										
F										1	1	1	1	4	3	3			14	0.6	0.2-0.9	93.0	0.0	2288	1.2 (0.6-1.8)	
										1.5	1.8	2.4	3.0	15.1	14.2	14.2										
Kaposi sarcoma (M914; ICD10 C46)																										
M													1		1				2	0.1	0 - 0.3	100.0	0.0	8400	0.2 (0 - 0.5)	
													2.4		4.3											
F																			0							
Nervous system, peripheral/autonomic (C470-C479)																										
M		1													2				3	0.2	0 - 0.5	100.0	0.0	*	0.3 (0 - 0.7)	
		1.4													8.6											
F										1							1		2	0.1	0 - 0.2	100.0	0.0	*	0.2 (0 - 0.4)	
										1.3							4.7									

Appendix 3A. Cancer incidence, Western Australia, 2009

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																										0					
Kidney (C640-C649)																															
M	2				1			5	4	20	16	27	30	21	21	14	12	10		183	11.4	9.7-13.2	92.0	1.3	75	16.5 (14.0-18.9)					
	2.6				1.1			5.9	4.8	24.2	21.3	39.9	50.9	50.0	66.3	60.0	74.5	89.4													
F	1	2					1	4	5	7	5	10	14	13	8	14	5	4		93	5.8	4.6-7.1	90.0	0.6	157	8.1 (6.5-9.8)					
	1.4	2.9					1.3	4.8	6.2	8.6	6.7	15.1	24.9	31.5	24.3	53.0	23.7	18.9													
Bladder & urinary tract (C650-C689)																															
M					1			1	4		13	9	21	32	23	27	33	27		191	10.4	8.9-11.9	96.0	1.1	90	18.8 (16.1-21.6)					
					1.1			1.2	4.8		17.3	13.3	35.7	76.2	72.6	115.8	204.9	241.3													
F							1	1	4	4	2	4	4	7	11	12	14	17		77	3.5	2.6-4.3	97.0	0.4	272	6.5 (5.0-7.9)					
							1.2	1.2	4.9	2.7	6.0	7.1	16.9	33.4	45.4	66.3	80.3														
Eye & lacrimal gland (C690-C699)																															
M	2						1		1	2	2	1	5	3	2		2	1		22	1.6	0.9-2.3	91.0	0.2	596	1.9 (1.1-2.8)					
	2.6						1.3		1.2	2.4	2.7	1.5	8.5	7.1	6.3		12.4	8.9													
F	1										1			2	1	1				6	0.5	0.0-0.9	83.0	0.1	1888	0.6 (0.1-1.0)					
	1.4										1.3			4.8	3.0	3.8															
Meninges (cerebral & spinal) (C700-C709)																															
M												1		1						2	0.1	0 - 0.3	100.0	0.0	5182	0.2 (0 - 0.4)					
												1.5		2.4																	
F																				0											
Brain (C710-C719)																															
M	2	1	2	1	5	2	1	2	5	7	2	9	15	9	5	10	7			85	5.8	4.5-7.1	89.0	0.6	178	7.5 (5.9-9.1)					
	2.6	1.4	2.6	1.2	5.7	2.3	1.3	2.3	6.1	8.5	2.7	13.3	25.5	21.4	15.8	42.9	43.5														
F	5		1		2	2	3	2	3	3	4	5	7	5	9	11	8	2		72	4.8	3.6-6.1	81.0	0.5	218	6.4 (4.9-7.9)					
	6.9		1.4		2.5	2.5	3.9	2.4	3.7	3.7	5.4	7.5	12.5	12.1	27.3	41.6	37.9	9.5													
Spinal cord & cranial nerves (C720-C729)																															
M								1							1			1		3	0.2	0 - 0.4	100.0	0.0	4578	0.3 (0 - 0.7)					
								1.2							3.2			8.9													
F			1																	1	0.1	0 - 0.4	0.0	0.0	*	0.1 (0 - 0.3)					
			1.4																												
Thyroid gland (C730-C739)																															
M				1	1	3	3	7	2	6	8	6	13	3	3	3	3	2		64	4.3	3.2-5.3	98.0	0.4	234	5.6 (4.2-7.0)					
				1.2	1.1	3.4	3.8	8.2	2.4	7.3	10.7	8.9	22.1	7.1	9.5	12.9	18.6	17.9													
F				2	7	12	12	12	20	19	17	20	14	7	11	3	2	1		159	11.6	9.7-13.4	99.0	1.2	86	14.1 (11.9-16.3)					
				2.6	8.7	15.2	15.8	14.5	25.0	23.5	22.9	30.1	24.9	16.9	33.4	11.4	9.5	4.7													
Adrenal gland (C740-C749)																															
M	1				1									1	3					6	0.5	0.1-0.9	100.0	0.1	1400	0.6 (0.1-1.0)					
	1.3				1.1									2.4	9.5																
F		1						1					1							3	0.3	0 - 0.6	100.0	0.0	4490	0.3 (0 - 0.6)					
		1.5						1.2					1.8																		
Endocrine glands (not adrenal) (C750-C759)																															
M			1					1			1				1					4	0.3	0 - 0.6	75.0	0.0	2857	0.4 (0.0-0.7)					
			1.3					1.2			1.3				3.2																
F					1												1			2	0.1	0 - 0.3	50.0	0.0	*	0.2 (0 - 0.4)					
					1.3												4.7														

Appendix 3A. Cancer incidence, Western Australia, 2009

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															1		2	2		5	0.2	0.0-0.4	80.0	0.0	6335	0.6 (0.1-1.1)
															3.2		12.4	17.9								
F															1.0					1	0.1	0 - 0.2	100.0	0.0	6593	0.1 (0 - 0.3)
															3.0											
Leukaemias, lymphoid, all																										
M	6	4	2			3	1		3	5	7	7	10	9	22	8	1	3		91	6.8	5.3-8.3	99.0	0.8	127	8.4 (6.7-10.2)
	7.8	5.5	2.6			3.4	1.3		3.6	6.1	9.3	10.4	17.0	21.4	69.5	34.3	6.2	26.8								
F	5	1	1	1			1	1	3		7	3	5	6	5	5	5	12		61	3.9	2.8-5.1	93.0	0.3	287	5.2 (3.9-6.5)
	6.9	1.5	1.4	1.3			1.3	1.2	3.7		9.4	4.5	8.9	14.5	15.2	18.9	23.7	56.7								
Leukaemias, lymphoid, acute																										
M	6	4	2			2	1		1	1		1			2					20	2.3	1.3-3.4	100.0	0.1	673	1.8 (1.0-2.6)
	7.8	5.5	2.6			2.3	1.3		1.2	1.2		1.5			6.3											
F	5	1	1	1			1		1		1			1						12	1.5	0.6-2.4	100.0	0.1	1151	1.1 (0.5-1.7)
	6.9	1.5	1.4	1.3			1.3		1.2		1.3			2.4												
Leukaemias, lymphoid, chronic																										
M									1	4	5	6	9	9	19	8	1	3		65	4.0	3.0-5.0	98.0	0.6	170	6.1 (4.6-7.6)
									1.2	4.8	6.7	8.9	15.3	21.4	60.0	34.3	6.2	26.8								
F									1		6	3	4	3	5	5	5	11		43	2.0	1.4-2.7	91.0	0.2	461	3.5 (2.5-4.6)
									1.2		8.1	4.5	7.1	7.3	15.2	18.9	23.7	52.0								
Leukaemias, lymphoid, other/NOS																										
M						1			1		2		1		1					6	0.4	0.1-0.8	100.0	0.0	2026	0.5 (0.1-1.0)
						1.1			1.2		2.7		1.7		3.2											
F								1	1				1	2				1		6	0.4	0.1-0.7	100.0	0.0	2202	0.5 (0.1-0.9)
								1.2	1.2				1.8	4.8				4.7								
Leukaemias, myeloid, all																										
M	1	1		3	2	1	2	2	1	6	4	4	7	4	9	10	7	9		73	4.6	3.5-5.7	99.0	0.4	238	7.1 (5.4-8.7)
	1.3	1.4		3.7	2.3	1.1	2.5	2.3	1.2	7.3	5.3	5.9	11.9	9.5	28.4	42.9	43.5	80.4								
F	1			2	2		5	1	1	5	1	5	3	3	3	7	4	5		48	3.0	2.0-3.9	98.0	0.3	383	4.2 (3.0-5.4)
	1.4			2.6	2.5		6.6	1.2	1.2	6.2	1.3	7.5	5.3	7.3	9.1	26.5	18.9	23.6								
Leukaemias, myeloid, acute																										
M	1	1		2	2		2	2	1	5	1	3	2	2	7	8	6	7		52	3.2	2.3-4.2	98.0	0.3	360	5.2 (3.7-6.6)
	1.3	1.4		2.5	2.3		2.5	2.3	1.2	6.1	1.3	4.4	3.4	4.8	22.1	34.3	37.3	62.6								
F	1			1	1		2	1	1	4		3	2	2	1	5	2	2		28	1.8	1.1-2.5	100.0	0.1	669	2.5 (1.5-3.4)
	1.4			1.3	1.2		2.6	1.2	1.2	4.9		4.5	3.6	4.8	3.0	18.9	9.5	9.5								
Leukaemias, myeloid, chronic																										
M				1		1				1	3	1			1		1			9	0.6	0.2-1.1	100.0	0.1	1637	0.8 (0.3-1.3)
				1.2		1.1				1.2	4.0	1.5			3.2		6.2									
F				1	1		3			1		2	1		2	2		1		14	0.9	0.4-1.5	100.0	0.1	1075	1.3 (0.6-1.9)
				1.3	1.2		3.9			1.2		3.0	1.8		6.1	7.6		4.7								
Leukaemias, myeloid, other/NOS																										
M													5	2	1	2		2		12	0.7	0.3-1.1	100.0	0.1	1219	1.1 (0.5-1.7)
													8.5	4.8	3.2	8.6		17.9								
F										1			1				2	2		6	0.2	0.0-0.4	83.0	0.0	5313	0.5 (0.1-0.8)
										1.3				2.4			9.5	9.5								

Appendix 3A. Cancer incidence, Western Australia, 2009

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, other																															
M																				0											
F																				0											
Leukaemias (all)																															
M	7	5	2	3	2	4	3	2	4	11	11	11	17	13	32	18	10	14	169	11.6	9.7-13.4	98.0	1.2	82	16.1 (13.6-18.5)						
	9.1	6.9	2.6	3.7	2.3	4.6	3.8	2.3	4.8	13.3	14.6	16.3	28.9	31.0	101.0	77.2	62.1	125.1													
F	6	1	1	3	2		6	2	4	5	8	8	8	9	9	12	9	17	110	7.0	5.5-8.5	95.0	0.6	160	9.4 (7.7-11.2)						
	8.2	1.5	1.4	4.0	2.5		7.9	2.4	5.0	6.2	10.8	12.1	14.2	21.8	27.3	45.4	42.6	80.3													
MYELODYSPLASTIC DISEASES																															
Refractory anaemias/cytopaenias																															
M													1	3	2	2	3	2	4	17	0.9	0.5-1.3	94.0	0.1	1134	1.7 (0.9-2.5)					
													1.5	5.1	4.8	6.3	12.9	12.4	35.7												
F											1	1	1	1	3	3															
											1.2	1.5		2.4	3	3.8	14.2	14.2													
Myelodysplastic syndromes																															
M											1	1		4	4	6	6	22	1.0	0.6-1.4	82.0	0.1	1306	2.4 (1.4-3.4)							
											1.2	1.5		12.6	17.1	37.3	53.6														
F													2	1	1	2	2	1	4	4	17	0.8	0.4-1.2	94.0	0.1	1185	1.4 (0.7-2.1)				
													2.7	1.5	1.8	4.8	6.1	3.8	18.9	18.9											
Myelodysplastic diseases, all																															
M											1	2	3	2	6	7	8	10	39	1.9	1.3-2.5	87.0	0.2	607	4.1 (2.8-5.4)						
											1.2	3.0	5.1	4.8	18.9	30.0	49.7	89.4													
F													1	2	2	1	3	3	2	7	7	28	1.2	0.7-1.7	93.0	0.1	798	2.3 (1.4-3.1)			
													1.2	2.7	3.0	1.8	7.3	9.1	7.6	33.2	33.1										
CHRONIC MYELOPROLIFERATIVE DISEASES																															
Chronic myeloproliferative disorder, NOS																															
M																2.0									2	0.1	0 - 0.2	100.0	0.0	*	0.2 (0 - 0.5)
																8.6															
F																				0											
Polycythaemia rubra vera																															
M													1	3	2	1		1	2	10	0.6	0.2-1.0	100.0	0.1	1381	0.9 (0.3-1.5)					
													1.5	5.1	4.8	3.2		6.2	17.9												
F													3	1																	
													4.5	1.8																	
Myelofibrosis/sclerosis																															
M											1	1	1		1		2	6	0.3	0.1-0.6	83.0	0.0	2651	0.5 (0.1-1.0)							
											1.2	1.5	1.7		3.2		12.4														
F													1	1		1	1														
													1.5	1.8		3.0	3.8														
Other chronic myeloproliferative d/o																															
M											1	1				1	3	0.2	0 - 0.4	100.0	0.0	7707	0.3 (0 - 0.6)								
											1.3	1.3																			
F													1	2		1	3	1	1	9	0.6	0.2-1.0	89.0	0.1	1251	0.8 (0.3-1.3)					
													1.2	2.7		1.8	7.3	3.0	3.8												

Appendix 3A. Cancer incidence, Western Australia, 2009

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							1			1	1	2	4	2	2	2	4	2		21	1.2	0.7-1.7	95.0	0.1	812	2.0 (1.1-2.8)	
							1.3			1.2	1.3	3.0	6.8	4.8	6.3	8.6	24.8	17.9									
F										1	2	4	3	3	2	2				17	1.1	0.6-1.6	82.0	0.1	699	1.5 (0.8-2.2)	
										1.2	2.7	6.0	5.3	7.3	6.1	7.6											
OTHER CHRONIC IMMUNOPROLIFERATIVE DISEASES																											
Mast cell tumours																											
M																				0							
F																				0							
Histiocytic/dendritic cell malignancies																											
M										1										1	0.1	0 - 0.2	100.0	0.0	*	0.1 (0 - 0.3)	
										1.2																	
F																				0							
Other & U/S immunoproliferative neoplasms																											
M												1		1	3					5	0.3	0.0-0.5	80.0	0.0	4120	0.5 (0.1-1.0)	
												1.7		3.2	12.9												
F												1		3				1		5	0.3	0.0-0.5	100.0	0.1	1838	0.4 (0.0-0.8)	
												1.8		9.1				4.7									
Other chronic immunoproliferative d/o, all																											
M										1			1		3					6	0.3	0.1-0.6	83.0	0.0	3297	0.6 (0.1-1.1)	
										1.2			1.7		3.2	12.9											
F												1		3				1		5	0.3	0.0-0.5	100.0	0.1	1838	0.4 (0.0-0.8)	
												1.8		9.1				4.7									
Unknown primary site (C26, C39, C76, C80; Behaviour 6/9)																											
M	2	1								4	5	10	21	14	16	13	21	30		138	7.7	6.4-9.1	70.0	0.8	133	13.6 (11.3-15.9)	
	2.6	1.4								4.8	6.7	14.8	35.7	33.3	50.5	55.7	130.4	268.1									
F							1		2	2	4	4	4	3	10	15	17	23	30	115	5.0	3.9-6.0	63.0	0.5	205	9.6 (7.8-11.3)	
							1.3		2.4	2.5	4.9	5.4	6.0	5.3	24.2	45.5	64.4	108.9	141.8								
All cancers																											
M	21	8	9	14	40	47	62	100	143	263	413	663	955	925	895	731	602	400		6291	378.2	369-388	95.0	45.2	3	585.0 (571-599)	
	27.4	11.0	11.7	17.3	45.3	53.8	78.3	117.0	173.1	318.7	550.0	980.5	1621.2	2203	2826	3134	3738	3575									
F	14	4	5	16	34	55	95	151	223	350	382	475	522	457	463	441	414	413		4514	264.5	256-273	94.0	29.3	4	387.2 (376-399)	
	19.2	5.9	7.0	21.2	42.3	69.7	125.0	183.0	278.6	432.2	513.5	716.0	929.5	1106	1405	1669	1961	1952									

Appendix 3B. Cancer mortality, Western Australia, 2009

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	1	4	2	5		3	2	19	1.1	0.6-1.6	134.0	0.2	638	1.8 (1.0-2.6)	
										1.2	1.3	1.5	6.8	4.8	15.8		18.6	17.9								
F														1	1	1	2	3	8	0.3	0.1-0.5	9.5	0.0	3667	0.6 (0.2-1.1)	
														2.4	3.0	3.8	9.5	14.2								
Tongue (C010-C029)																										
M										1	1	2	1	6		3	2	1	17	1.0	0.5-1.5	131.5	0.1	931	1.6 (0.8-2.3)	
										1.2	1.3	3.0	1.7	14.3		12.9	12.4	8.9								
F													1		2	1	1		5	0.3	0.0-0.5	16.7	0.0	2549	0.5 (0.1-0.9)	
													1.8		6.1	3.8	4.7									
Parotid gland (C070-C079)																										
M																1			1	0.0	0 - 0.1	0.0	0.0	*	0.1 (0 - 0.3)	
																4.3										
F																1	2		5	0.2	0.0-0.4	33.1	0.0	6401	0.4 (0.0-0.7)	
																1.3	1.8	3.8	9.5							
Major salivary glands (not parotid) (C080-C089)																										
M																			0						-	
F																			0						-	
Pharynx (C090-C149) (not C11)																										
M										1	1	1	4	4	5	4	1	1	22	1.4	0.8-2.0	230.9	0.2	488	1.9 (1.1-2.7)	
										1.2	1.2	1.3	5.9	6.8	11.9	12.6	4.3	6.2								
F													1	1					2	0.1	0 - 0.3	19.0	0.0	4761	0.2 (0 - 0.4)	
													1.8	2.4												
Nasopharynx (C110-C119)																										
M																			0						-	
F																			0						-	
Oesophagus (C150-C159)																										
M										3	3	5	6	8	7	10	7	19	5	73	3.9	3.0-4.8	531.0	0.4	237	7.1 (5.4-8.7)
										3.6	3.6	6.7	8.9	13.6	16.7	31.6	30.0	118.0	44.7							
F												1	2	3	4	2	4	3	10	29	1.3	0.8-1.8	123.5	0.1	786	2.3 (1.5-3.2)
												1.3	3.0	5.3	9.7	6.1	15.1	14.2	47.3							
Stomach (C160-C169)																										
M										4	10	8	16	3	7	7	16	10	81	4.4	3.4-5.4	659.1	0.4	232	7.7 (6.0-9.4)	
										4.8	13.3	11.8	27.2	7.1	22.1	30.0	99.4	89.4								
F												2	2	1	3		5	5	13	36	1.6	1.0-2.2	266.2	0.2	647	3.0 (2.0-3.9)
										1	1	1	2	2	1	3		5	13							
										1.3	1.2	1.2	2.5	2.7	1.5	5.3		15.2	18.9	9.5	61.4					
Small intestine (C170-C179)																										
M													3	1	2		2	2	10	0.6	0.2-0.9	46.3	0.1	1451	1.0 (0.4-1.6)	
													5.1	2.4	6.3		12.4	17.9								
F													1		2	1	2		6	0.3	0.0-0.5	21.4	0.0	2641	0.5 (0.1-1.0)	
													1.5		6.1	3.8	9.5									

Appendix 3B. Cancer mortality, Western Australia, 2009

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					1		1	1	6	9	14	34	48	69	94	86	71	49	483	26.5	24.0-28.9	2646.1	3.2	32	47.8 (43.5-52.1)	
					1.1		1.3	1.2	7.3	10.9	18.6	50.3	81.5	164.3	296.8	368.7	440.9	437.9								
F						1		1	5	9	18	24	33	39	49	56	41	44	320	16.2	14.3-18.1	2049.3	1.9	53	27.4 (24.4-30.5)	
						1.3		1.2	6.2	11.1	24.2	36.2	58.8	94.4	148.7	212.0	194.2	207.9								
Thymus (C370-C379)																										
M																1			1	0.0	0 - 0.1	0.0	0.0	*	0.1 (0 - 0.3)	
																4.3										
F															1			1	2	0.1	0 - 0.2	2.4	0.0	6593	0.2 (0 - 0.4)	
															3.0		4.7									
Pleura, heart & mediastinum (C380-C389)																										
M		1							2						2				5	0.4	0.0-0.8	119.7	0.1	1978	0.5 (0.1-0.9)	
		1.4							2.4						6.3											
F																			0					-		
Bones, joints & articular cartilages (C400-C419)																										
M									1							2			3	0.2	0 - 0.3	25.3	0.0	*	0.3 (0 - 0.7)	
									1.2							8.6										
F		1									1		1			1			4	0.3	0 - 0.6	93.5	0.0	4421	0.4 (0.0-0.7)	
		1.4									1.3		1.8			3.8										
Skin (melanoma only) (C430-C439)																										
M		1				1	1	1	2	2	2	11	7	10	13	13	15	10	89	4.9	3.9-6.0	694.4	0.5	190	8.7 (6.9-10.6)	
		1.4				1.1	1.3	1.2	2.4	2.4	2.7	16.3	11.9	23.8	41.0	55.7	93.2	89.4								
F							1		4	1	6	5	5	5	4	7	2	8	48	2.6	1.8-3.4	505.8	0.3	356	4.1 (2.9-5.3)	
							1.3		5.0	1.2	8.1	7.5	8.9	12.1	12.1	26.5	9.5	37.8								
Skin (non-melanoma; includes SCC-BCC) (C440-C449)																										
M							1		1		1	1	5	6	6	9	5	9	44	2.4	1.6-3.1	220.2	0.2	426	4.5 (3.2-5.8)	
							1.3		1.2		1.3	1.5	8.5	14.3	18.9	38.6	31.1	80.4								
F												2	1		1	2	2	11	19	0.6	0.3-1.0	47.5	0.0	2555	1.4 (0.8-2.0)	
												3.0	1.8		3.0	7.6	9.5	52.0								
Mesothelioma (M905; ICD10 C45)																										
M									4	2	6	11	16	13	12	8	7		79	4.6	3.5-5.6	508.9	0.6	176	7.5 (5.8-9.2)	
									4.8	2.7	8.9	18.7	38.1	41.0	51.4	49.7	62.6									
F										1	1	1	2		2	3	1		11	0.5	0.2-0.8	64.0	0.0	2112	0.9 (0.4-1.5)	
										1.3	1.5	1.8	4.8		7.6	14.2	4.7									
Kaposi sarcoma (M914; ICD10 C46)																										
M																			0					-		
F																			0					-		
Nervous system, peripheral/autonomic (C470-C479)																										
M																1			1	0.0	0 - 0.1	0.0	0.0	*	0.1 (0 - 0.3)	
																4.3										
F																			0					-		

Appendix 3B. Cancer mortality, Western Australia, 2009

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																			0																				
Kidney (C640-C649)																																							
M																			54	2.8	2.1-3.6	366.8	0.3	386	5.4 (3.9-6.9)														
F																			30	1.5	0.9-2.1	194.7	0.2	586	2.6 (1.6-3.5)														
Bladder & urinary tract (C650-C689)																																							
M																			86	4.5	3.5-5.5	420.8	0.4	233	8.7 (6.9-10.6)														
F																			38	1.6	1.0-2.1	116.4	0.2	641	3.2 (2.1-4.2)														
Eye & lacrimal gland (C690-C699)																																							
M																			7	0.4	0.1-0.6	73.5	0.0	3558	0.7 (0.2-1.2)														
F																			6	0.4	0.1-0.7	87.7	0.0	2410	0.5 (0.1-0.9)														
Meninges (cerebral & spinal) (C700-C709)																																							
M																			0																				
F																			0																				
Brain (C710-C719)																																							
M																			56	3.6	2.6-4.5	709.8	0.4	236	5.1 (3.8-6.5)														
F																			62	3.5	2.6-4.5	620.0	0.4	224	5.4 (4.0-6.7)														
Spinal cord & cranial nerves (C720-C729)																																							
M																			1	0.0	0 - 0.1	0.0	0.0	*	0.1 (0 - 0.4)														
F																			0																				
Thyroid gland (C730-C739)																																							
M																			7	0.4	0.1-0.7	50.7	0.0	2439	0.7 (0.2-1.2)														
F																			5	0.2	0.0-0.5	33.1	0.0	5472	0.4 (0.0-0.8)														
Adrenal gland (C740-C749)																																							
M																			1	0.1	0 - 0.2	7.0	0.0	8400	0.1 (0 - 0.2)														
F																			1	0.1	0 - 0.2	7.1	0.0	8264	0.1 (0 - 0.3)														
Endocrine glands (not adrenal) (C750-C759)																																							
M																			0																				
F																			2	0.1	0 - 0.2	11.9	0.0	*	0.2 (0 - 0.4)														

Appendix 3B. Cancer mortality, Western Australia, 2009

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															1		1		2	0.1	0 - 0.2	2.4	0.0	6335	0.2 (0 - 0.5)	
															3.2		6.2									
F															1			1	2	0.1	0 - 0.2	2.4	0.0	6593	0.2 (0 - 0.4)	
															3			4.7								
Leukaemias, lymphoid, all																										
M			1				2	3	1	1	4	1	3	1	4	1	3	1	17	1.0	0.5-1.5	171.6	0.1	799	1.6 (0.8-2.4)	
			1.2				2.7	4.4	1.7	2.4	12.6	4.3	18.6	8.9												
F							1		1						1	1	9		13	0.4	0.2-0.7	33.1	0.0	6401	0.9 (0.4-1.4)	
							1.3		1.8						3.8	4.7	42.5									
Leukaemias, lymphoid, acute																										
M			1								1								2	0.2	0 - 0.4	74.6	0.0	7786	0.2 (0 - 0.4)	
			1.2								1.3															
F											1	1							2	0.1	0 - 0.3	33.1	0.0	6401	0.2 (0 - 0.4)	
											1.3	1.8														
Leukaemias, lymphoid, chronic																										
M							1	3	1	1	4	1	3	1	4	1	3	1	15	0.8	0.4-1.2	97.0	0.1	890	1.4 (0.7-2.2)	
							1.3	4.4	1.7	2.4	12.6	4.3	18.6	8.9												
F																	1	8	9	0.2	0.1-0.4	0.0	0.0	*	0.6 (0.2-1.0)	
																	4.7	37.8								
Leukaemias, lymphoid, other/NOS																										
M																			0						-	
F																1		1	2	0.1	0 - 0.1	0.0	0.0	*	0.2 (0 - 0.4)	
																3.8	4.7									
Leukaemias, myeloid, all																										
M			1				1	3	1	1	3	10	4	9	5	8			46	2.6	1.8-3.4	310.4	0.3	397	4.6 (3.3-6.0)	
			1.2				1.2	3.6	1.3	1.5	5.1	23.8	12.6	38.6	31.1	71.5										
F			2		1	1	1		2	3	4	3	4	6	4	2			33	2.0	1.2-2.7	438.2	0.2	499	2.9 (1.9-3.9)	
			2.8		1.2	1.3	1.3		2.5	4.5	7.1	7.3	12.1	22.7	18.9	9.5										
Leukaemias, myeloid, acute																										
M			1				3	1			7	3	7	4	6				32	1.8	1.1-2.4	206.4	0.2	619	3.3 (2.1-4.4)	
			1.2				3.6	1.3			16.7	9.5	30.0	24.8	53.6											
F			2		1	1	1		2	3	4	3	2	5	1				25	1.7	1.0-2.4	433.4	0.2	588	2.2 (1.3-3.1)	
			2.8		1.2	1.3	1.3		2.5	4.5	7.1	7.3	6.1	18.9	4.7											
Leukaemias, myeloid, chronic																										
M							1				1						1		3	0.2	0 - 0.4	46.1	0.0	7437	0.3 (0 - 0.6)	
							1.2				1.5						6.2									
F															1		2		3	0.1	0 - 0.2	2.4	0.0	6593	0.3 (0 - 0.6)	
															3.0		9.5									
Leukaemias, myeloid, other/NOS																										
M									3	3	1	2			2				11	0.7	0.3-1.1	57.8	0.1	1300	1.0 (0.4-1.7)	
									5.1	7.1	3.2	8.6			17.9											
F															1	1	1	2	5	0.2	0.0-0.3	2.4	0.0	6593	0.4 (0.0-0.8)	
															3.0	3.8	4.7	9.5								

Appendix 3B. Cancer mortality, Western Australia, 2009

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					2				1	3	3	4	4	11	9	10	9	9		65	3.7	2.7-4.6	484.6	0.4	255	6.4 (4.8-8.0)	
					2.5				1.2	3.6	4.0	5.9	6.8	26.2	28.4	42.9	55.9	80.4									
F		2			1	1	1		2	1	3	5	3	3	5	7	5	12		48	2.5	1.7-3.3	473.8	0.2	433	4.0 (2.8-5.1)	
		2.8			1.2	1.3	1.3		2.5	1.3	4.5	8.9	7.3	15.2	26.5	23.7	56.7										
MYELODYSPLASTIC DISEASES																											
Refractory anaemias/cytopaenias																											
M														1	1	3	1			6	0.3	0.0-0.5	9.4	0.0	3612	0.6 (0.1-1.1)	
														2.4	3.2	12.9	6.2										
F																2	2	1		5	0.1	0.0-0.3	0.0	0.0	*	0.4 (0.0-0.8)	
																7.6	9.5	4.7									
Myelodysplastic syndromes																											
M															2	3	9	2		16	0.6	0.3-0.9	4.8	0.0	3168	1.7 (0.9-2.6)	
															6.3	12.9	55.9	17.9									
F														1		3	6	5		15	0.4	0.2-0.7	7.1	0.0	8264	1.2 (0.6-1.8)	
														2.4		11.4	28.4	23.6									
Myelodysplastic diseases, all																											
M														1	3	6	10	2		22	0.9	0.5-1.3	14.1	0.1	1688	2.4 (1.4-3.4)	
														2.4	9.5	25.7	62.1	17.9									
F														1		5	8	6		20	0.6	0.3-0.9	7.1	0.0	8264	1.6 (0.9-2.3)	
														2.4		18.9	37.9	28.4									
CHRONIC MYELOPROLIFERATIVE DISEASES																											
Chronic myeloproliferative disorder, NOS																											
M																1		1		2	0.1	0 - 0.2	0.0	0.0	*	0.2 (0 - 0.6)	
																4.3		8.9									
F																				0						-	
Polycythaemia rubra vera																											
M																				0						-	
F															1		3			4	0.1	0 - 0.3	2.4	0.0	6593	0.3 (0 - 0.6)	
															3.0		14.2										
Myelofibrosis/sclerosis																											
M																3				3	0.1	0 - 0.3	0.0	0.0	*	0.3 (0 - 0.7)	
																12.9											
F														1				2		3	0.1	0 - 0.2	16.6	0.0	*	0.2 (0 - 0.4)	
														1.5				9.5									
Other chronic myeloproliferative d/o																											
M														2	1		1			4	0.2	0 - 0.5	13.9	0.0	4200	0.4 (0.0-0.8)	
														4.8	4.3		8.9										
F																				0						-	

Appendix 3B. Cancer mortality, Western Australia, 2009

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														2		5		2	9	0.4	0.1-0.7	13.9	0.0	4200	1.0 (0.3-1.6)		
														4.8		21.4		17.9									
F												1			1			5	7	0.2	0.0-0.4	19.0	0.0	4404	0.5 (0.1-0.9)		
												1.5			3.0		23.6										
OTHER CHRONIC IMMUNOPROLIFERATIVE DISEASES																											
Mast cell tumours																											
M																			0						-		
F																			0						-		
Histiocytic/dendritic cell malignancies																											
M														1.0					1	0.1	0 - 0.2	7.0	0.0	8400	0.1 (0 - 0.2)		
														2.4													
F																			0						-		
Other & U/S immunoproliferative neoplasms																											
M												1		1			1		3	0.2	0 - 0.4	18.5	0.0	4904	0.3 (0 - 0.6)		
												1.7		2.4			6.2										
F																		3	3	0.1	0 - 0.2	0.0	0.0	*	0.2 (0 - 0.4)		
																		14.2									
Other chronic immunoproliferative d/o, all																											
M												1		2			1		4	0.2	0 - 0.5	25.4	0.0	3097	0.3 (0.0-0.7)		
												1.7		4.8			6.2										
F																		3	3	0.1	0 - 0.2	0.0	0.0	*	0.2 (0 - 0.4)		
																		14.2									
Unknown primary site (C80 or Behaviour 6/9)																											
M							1		1	3	7	8	8	11	5	20	24		88	4.5	3.5-5.5	414.1	0.4	238	9.0 (7.1-10.9)		
							1.3		1.2	4.0	10.4	13.6	19.0	34.7	21.4	124.2	214.5										
F						1		2	3	4	3	6	5	12	11	17	30		94	4.0	3.1-4.9	466.3	0.4	262	7.6 (6.1-9.2)		
						1.3		2.4	3.7	5.4	4.5	10.7	12.1	36.4	41.6	80.5	141.8										
Total deaths due to cancer																											
M	1	2	1	4	4	2	6	10	25	49	99	139	229	274	321	322	358	312	2158	117.1	112-122	13351.0	12.6	8	214.2 (205-223)		
	1.3	2.8	1.3	4.9	4.5	2.3	7.6	11.7	30.3	59.4	131.8	205.6	389	652	1014	1380	2223	2789									
F		1	3		2	10	6	18	41	57	106	120	156	186	203	240	225	330	1704	84.3	80.0-88.7	12660.6	9.2	11	143.1 (136-150)		
		1.5	4.2		2.5	12.7	7.9	21.8	51.2	70.4	142.5	180.9	277.8	450	616	909	1066	1560									

Appendix 3B. Cancer mortality, Western Australia, 2009

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 non-"cancer" mortality data, 2009																										
Deaths due to benign tumours in CR cases																										
M										1.0	1.0						1.0	1.0	4	0.2	0 - 0.4	46	0.0	7863	0.4 (0.0-0.8)	
										1.2	1.3						6.2	8.9								
F																			2	0.1	0 - 0.3	14	0.0	4132	0.2 (0 - 0.4)	
																			4.8							
Deaths due to lymphohaematopoietic tumours of uncertain malignant potential																										
M																			0						-	
F																1			1	0.1	0 - 0.2	2	0.0	6593	0.1 (0 - 0.3)	
																3.0										
Deaths due to non-lymphohaematopoietic tumours of uncertain/unspecified nature																										
M																			0						-	
F																	2	1	3	0.1	0 - 0.2	0	0.0	*	0.3 (0 - 0.6)	
																	7.6	4.7								
Non-cancer deaths in CR cases																										
M							1	2	6	11	14	39	42	84	163	229	387		978	44.6	41.7-47.4	1655	2.4	42	108.0 (101-115)	
							1.3	2.4	7.3	14.6	20.7	66.2	100.0	265.2	698.8	1422.1	3458.8									
F							3	2	8	5	6	14	24	40	81	147	459		789	24.2	22.4-26.1	1034	1.2	85	58.9 (54.7-63.0)	
							3.9	2.5	9.9	6.7	9.0	24.9	58.1	121.4	306.6	696.2	2169.1									
Deaths of undetermined cause in CR cases																										
M							1	1		1	9			8	1	5	6		32	1.8	1.1-2.4	194	0.2	451	3.1 (2.0-4.2)	
							1.2	1.2		1.5	15.3			25.3	4.3	31.1	53.6									
F								1		1	2	1	1	1	2	1	4		13	0.6	0.2-1.0	76	0.1	1702	1.0 (0.5-1.6)	
								1.2		1.5	3.6	2.4	3.0	7.6	4.7	18.9										
All deaths (Cancer and non-cancer) of Cancer Registry cases																										
M	1	2	1	4	4	2	7	10	27	56	111	153	268	316	405	485	588	701	3141	162.0	156-168	15185	15.0	7	322.7 (311-334)	
	1.3	2.8	1.3	4.9	4.5	2.3	8.8	11.7	32.7	67.9	147.8	226.3	455.0	752.4	1278.7	2079.2	3651.5	6265.1								
F		1	3		2	10	9	18	43	65	111	126	170	212	244	323	373	789	2499	108.9	104-114	13773	10.4	10	202.5 (195-211)	
		1.5	4.2		2.5	12.7	11.8	21.8	53.7	80.3	149.2	189.9	302.7	513.1	740.3	1222.7	1766.4	3728.6								

Appendix 3C. Childhood cancer, Western Australia, 2009 (WHO International Classification, version 3)

	Males				Total	ASR	95%c.i.	TD%	Females				Total	ASR	95%c.i.	TD%	All				Total	ASR	95%c.i.	TD%
	Age Group								Age Group								Age Group							
	0	1-4	5-9	10-14					0	1-4	5-9	10-14					0	1-4	5-9	10-14				
I. LEUKAEMIAS, MYELOPROLIFERATIVE AND MYELOYDYSPLASTIC DISEASES																								
All	7	5	2		14	6.6	3.1-10.0	100	1	5	1	1	8	4.1	1.2-6.9	100	1	12	6	3	22	5.4	3.1-7.6	100
	11.6	6.9	2.6						6.5	8.7	1.5	1.4					3.2	10.2	4.3	2.0				
Lymphoid leukaemia	6	4	2		12	5.6	2.4-8.8	100		5	1	1	7	3.6	0.9-6.2	100		11	5	3	19	4.6	2.5-6.7	100
	9.9	5.5	2.6							8.7	1.5	1.4						9.3	3.5	2.0				
Acute myeloid leukaemia	1	1			2	1.0	0 - 2.3	100	1				1	0.5	0 - 1.5	100	1	1	1		3	0.7	0 - 1.6	100
	1.7	1.4							6.5								3.2	0.8	0.7					
Chronic MPDs					0								0								0			
MDS & other MPDs					0								0								0			
Unspecified/other leukaemia					0								0								0			
II. LYMPHOMAS																								
All		2		2	4	1.8	0.0-3.5	100					0					2		2	4	0.9	0.0-1.8	100
		3.3		2.6														1.7		1.3				
Hodgkin lymphoma				1	1	0.4	0 - 1.1	100					0							1	1	0.2	0 - 0.6	100
				1.3																0.7				
Non-Hodgkin lymphoma exc Burki					0								0								0			
Burkitt lymphoma	1			1	2	0.9	0 - 2.1	100					0					1		1	2	0.5	0 - 1.1	100
	1.7			1.3														0.8		0.7				
Misc. lymphoreticular neoplasms					0								0								0			
Unspecified lymphoma	1				1	0.5	0 - 1.5	100					0					1			1	0.3	0 - 0.8	100
	1.7																	0.8						
III. CNS AND INTRACRANIAL/SPINAL																								
All	1	3	4	3	11	4.9	2.0-7.9	91	1	5	2	2	10	5.0	1.9-8.0	90	2	8	6	5	21	4.9	2.8-7.1	91
	6.3	5.0	5.5	3.9					6.5	8.7	2.9	2.8					6.4	6.8	4.3	3.4				
Ependymoma/choroid plexus	1	1			2	1.0	0 - 2.4	100					1	0.5	0 - 1.6	100		1	2		3	0.8	0 - 1.6	100
	6.3	1.7								1.7								3.2	1.7					
Astrocytoma			3	1	4	1.7	0.0-3.4	100	1	2	1	2	6	2.9	0.6-5.2	83	1	2	4	3	10	2.3	0.9-3.7	90
			4.1	1.3					6.5	3.5	1.5	2.8					3.2	1.7	2.8	2.0				
Embryonal tumours	1	1			2	1.0	0 - 2.3	100		2			2	1.1	0 - 2.6	100		3	1		4	1.0	0.0-2.0	100
	1.7	1.4								3.5								2.5	0.7					
Other gliomas				2	2	0.8	0 - 1.8	50					0								2	0.4	0 - 0.9	50
				2.6																	1.3			
Other intracranial/spinal	1				1	0.5	0 - 1.5	100				1	1	0.5	0 - 1.4	100		1	1		2	0.5	0 - 1.2	100
	1.7											1.5						0.8	0.7					
Unspecified					0								0								0			

Appendix 3C. Childhood cancer, Western Australia, 2009 (WHO International Classification, version 3)

	Males				Total	ASR	95%c.i.	TD%	Females				Total	ASR	95%c.i.	TD%	All						
	Age Group								Age Group								Age Group						
	0	1-4	5-9	10-14					0	1-4	5-9	10-14					0	1-4	5-9	10-14	Total	ASR	95%c.i.
IV. NEUROBLASTOMA & PERIPHERAL NERVOUS SYSTEM TUMOURS																							
All	1	1	1		3	1.4	0 - 3.1	100		1			1	0.5	0 - 1.4	100	1	1	2	4	1.0	0.0-1.9	100
	6.3	1.7	1.4							1.5							3.2	0.8	1.4				
Neuroblastoma/ganglioneurobl.	1	1	1		3	1.4	0 - 3.1	100		1			1	0.5	0 - 1.4	100	1	1	2	4	1.0	0.0-1.9	100
	6.3	1.7	1.4							1.5							3.2	0.8	1.4				
Other					0								0							0			
V. RETINOBLASTOMA																							
All		2			2	1.0	0 - 2.4	100		1			1	0.5	0 - 1.6	0		3		3	0.8	0 - 1.7	67
		3.3								1.7								2.5					
VI. RENAL TUMOURS																							
All		2			2	1.0	0 - 2.3	100		1	2		3	1.5	0 - 3.2	100	2	1	2	5	1.2	0.1-2.3	100
		12.5								1.7	2.9						6.4	0.8	1.4				
Nephroblastoma/oth non-epithel.		2			2	1.0	0 - 2.3	100		1	2		3	1.5	0 - 3.2	100	2	1	2	5	1.2	0.1-2.3	100
		12.5								1.7	2.9						6.4	0.8	1.4				
Renal carcinoma					0								0							0			
Unspecified					0								0							0			
VII. HEPATIC TUMOURS																							
All		2			2	1.0	0 - 2.3	50		1	1		2	0.9	0 - 2.3	100	2	1		4	1.0	0.0-1.9	75
		12.5								1.7	1.4						6.4	0.8		0.7			
Hepatoblastoma		1			1	0.5	0 - 1.4	100		1	1		2	0.9	0 - 2.3	100	1	1		3	0.7	0 - 1.5	100
		6.3								1.7	1.4						3.2	0.8		0.7			
Hepatic carcinoma					0								0							0			
Unspecified		1			1	0.5	0 - 1.4	0					0				1			1	0.2	0 - 0.7	0
		6.3															3.2						
VIII. BONE																							
All					0								0							0			
Osteosarcoma					0								0							0			
Chondrosarcoma					0								0							0			
Ewing & related sarcoma					0								0							0			
Other specified					0								0							0			
Unspecified					0								0							0			

Appendix 3C. Childhood cancer, Western Australia, 2009 (WHO International Classification, version 3)

	Males				Total	ASR	95%c.i.	TD%	Females				Total	ASR	95%c.i.	TD%	All							
	Age Group								Age Group								Age Group							
	0	1-4	5-9	10-14					0	1-4	5-9	10-14					0	1-4	5-9	10-14	Total	ASR	95%c.i.	TD%
IX. SOFT TISSUE SARCOMA																								
All		2		1	3	1.4	0 - 3.0	100				1	1	0.4	0 - 1.2	100		2		2	4	0.9	0.0-1.8	100
		3.3		1.3								1.4						1.7		1.3				
Rhabdomyosarcoma		1			1	0.5	0 - 1.5	100					0					1			1	0.3	0 - 0.8	100
		1.7																0.8						
Fibrosarcoma/Neurofibrosarc.		1			1	0.5	0 - 1.5	100					0					1			1	0.3	0 - 0.8	100
		1.7																0.8						
Kaposi sarcoma					0								0								0			
Other specified				1	1	0.4	0 - 1.1	100				1	1	0.4	0 - 1.2	100				2	2	0.4	0 - 0.9	100
				1.3								1.4								1.3				
Unspecified					0								0								0			
X. GONADAL AND GERM CELL																								
All				2	2	0.8	0 - 1.8	100				1	1	0.4	0 - 1.2	100				3	3	0.6	0 - 1.3	100
				2.6								1.4								2.0				
Intracranial/spinal				1	1	0.4	0 - 1.1	100				1	1	0.4	0 - 1.2	100				2	2	0.4	0 - 0.9	100
				1.3								1.4								1.3				
Other/unspecified non-gonadal					0								0								0			
Gonadal germ cell				1	1	0.4	0 - 1.1	100					0							1	1	0.2	0 - 0.6	100
				1.3																0.7				
Gonadal carcinoma					0								0								0			
Other and unspecified					0								0								0			
XI. OTHER EPITHELIAL / MELANOMA																								
All					0								0								0			
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								0								0			

Appendix 3C. Childhood cancer, Western Australia, 2009 (WHO International Classification, version 3)

	Males				Total	ASR	95%c.i.	TD%	Females				Total	ASR	95%c.i.	TD%	All							
	Age Group								Age Group								Age Group							
	0	1-4	5-9	10-14					0	1-4	5-9	10-14					0	1-4	5-9	10-14	Total	ASR	95%c.i.	TD%
XII. OTHER																								
All			1		1	0.4	0 - 1.3	0										1	0.2	0 - 0.7	0			
			1.4															0.7						
Other specified malignancy					0														0					
Other unspecified malignancy			1		1	0.4	0 - 1.3	0											1	0.2	0 - 0.7	0		
			1.4															0.7						
Total	6	17	11	10	44	20.3	14.2-26.3	93	2	13	6	6	27	13.3	8.2-18.3	93	8	30	17	16	71	16.9	12.9-20.8	93
	37.6	28.1	15.1	13.0					13.1	22.6	8.8	8.4					25.6	25.4	12.1	10.8				

Appendix 3D. Cancer incidence, Western Australia, 2009: 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	14	20.3	85.4	39.9-131	10	Breast	14	29.2	93.0	41.8-144	13
Melanoma (skin)	11	15.9	53.8	21.0-86.5	22	Melanoma (skin)	7	14.6	40.7	8.7-72.6	19
Colorectal	9	13.0	52.0	17.2-86.8	23	Colorectal	5	10.4	32.1	3.7-60.5	32
Colon	7	10.1	39.9	9.6-70.1	26	Colon	2	4.2	14.8	0 - 35.4	97
Rectum	2	2.9	12.1	0 - 29.5	280	Rectum	3	6.3	17.3	0 - 36.9	47
Liver	5	7.2	21.2	2.6-39.7	43	Pancreas	3	6.3	26.9	0 - 58.6	25
Oesophagus	4	5.8	19.4	0 - 38.9	41	Lung	3	6.3	20.0	0 - 43.0	65
Pharynx	3	4.3	17.7	0 - 38.0	86	Cervix	2	4.2	13.6	0 - 32.9	68
Lung	3	4.3	21.2	0 - 45.3	36	Uterus	2	4.2	16.6	0 - 39.6	49
Testis	3	4.3	11.8	0 - 25.2	95	Unknown primary	2	4.2	20.4	0 - 48.5	38
Leukaemia	3	4.3	15.5	0 - 33.4	81						
Leukaemia NOS	0										
Lymphoid leukaemia	3	4.3	15.5	0 - 33.4	81						
Myeloid leukaemia	0										
Leukaemia, other	0										
All cancers	69	100.0	379.0	288-470	3	All cancers	48	100.0	330.7	234-428	3

CHS Pilbara Region

Males					Females						
	Cases	%	ASR	95%c.i.	Risk		Cases	%	ASR	95%c.i.	Risk
Prostate	14	23.7	57.7	21.5-94.0	16	Breast	18	36.7	97.3	40.6-154	8
Lung	8	13.6	56.7	14.6-98.8	14	Colorectal	7	14.3	42.3	6.3-78.4	19
Melanoma (skin)	8	13.6	39.8	7.1-72.6	21	Colon	4	8.2	24.3	0 - 53.4	32
Kidney	4	6.8	10.6	0.2-21.1	108	Rectum	3	6.1	18.0	0 - 39.5	47
Stomach	3	5.1	8.0	0 - 17.1	128	Melanoma (skin)	6	12.2	40.8	0 - 83.9	16
Mesothelioma	3	5.1	20.5	0 - 46.2	25	Lymphoma	4	8.2	32.1	0 - 66.3	22
Brain	3	5.1	8.7	0 - 18.6	129	Lymphoma NOS	0				
Leukaemia	3	5.1	14.6	0 - 33.7	52	Hodgkin lymphoma	1	2.0	5.0	0 - 14.7	161
Leukaemia NOS	0					NHL	3	6.1	27.1	0 - 59.9	26
Lymphoid leukaemia	3	5.1	14.6	0 - 33.7	52	Brain	3	6.1	13.4	0 - 28.7	93
Myeloid leukaemia	0					Lung	2	4.1	18.4	0 - 46.3	36
Leukaemia, other	0					Uterus	2	4.1	19.6	0 - 50.9	304
Colorectal	2	3.4	7.8	0 - 19.2	116						
Colon	1	1.7	2.7	0 - 8.1	437						
Rectum	1	1.7	5.1	0 - 15.1	158						
All cancers	59	100.0	271.4	190-352	3	All cancers	49	100.0	292.5	193-392	3

CHS Midwest Region

Males					Females						
	Cases	%	ASR	95%c.i.	Risk		Cases	%	ASR	95%c.i.	Risk
Prostate	57	28.1	107.3	79.0-136	8	Breast	26	22.2	57.9	35.2-80.6	19
Lung	25	12.3	46.0	27.6-64.4	19	Colorectal	22	18.8	43.1	24.3-61.9	20
Melanoma (skin)	21	10.3	42.4	23.8-60.9	22	Colon	15	12.8	28.5	13.4-43.7	29
Colorectal	17	8.4	30.8	16.0-45.6	22	Rectum	7	6.0	14.5	3.4-25.7	61
Colon	9	4.4	15.5	5.2-25.8	43	Melanoma (skin)	14	12.0	30.6	14.3-46.9	26
Rectum	8	3.9	15.3	4.6-25.9	42	Lung	11	9.4	24.1	9.7-38.5	25
Lymphoma	9	4.4	16.5	5.3-27.7	56	Uterus	8	6.8	20.0	5.5-34.5	41
Lymphoma NOS	0					Cervix	4	3.4	11.6	0 - 23.4	109
Hodgkin lymphoma	2	1.0	3.7	0 - 9.1	498	Thyroid gland	4	3.4	10.8	0.2-21.4	112
NHL	7	3.4	12.8	3.0-22.7	63	Leukaemia	4	3.4	7.7	0 - 15.4	131
Pancreas	7	3.4	14.4	3.7-25.2	68	Leukaemia NOS	0				
Bladder & urinary tract	6	3.0	9.6	1.6-17.5	286	Lymphoid leukaemia	2	1.7	2.8	0 - 6.7	*
Unknown primary	6	3.0	10.0	1.8-18.3	100	Myeloid leukaemia	2	1.7	4.8	0 - 11.6	131
Lip, gum & mouth	5	2.5	9.6	0.8-18.4	112	Leukaemia, other	0				
Liver	5	2.5	10.0	1.1-18.9	83	Pancreas	3	2.6	5.8	0 - 12.7	146
Kidney	5	2.5	9.6	1.2-18.1	60	Bladder & urinary tract	3	2.6	7.5	0 - 16.0	102
						Unknown primary	3	2.6	4.5	0 - 9.9	183
All cancers	203	100.0	391.7	336-447	3	All cancers	117	100.0	255.0	207-303	4

Appendix 3D. Cancer incidence, Western Australia, 2009: 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	96	32.5	128.9	103-155	7	Breast	53	28.5	88.0	63.1-113	12
Colorectal	38	12.9	50.0	33.6-66.5	16	Colorectal	29	15.6	45.5	26.9-64.1	21
Colon	15	5.1	18.6	8.7-28.4	50	Colon	20	10.8	31.9	15.7-48.2	32
Rectum	23	7.8	31.5	18.3-44.6	24	Rectum	9	4.8	13.6	4.5-22.7	61
Melanoma (skin)	30	10.2	37.6	23.8-51.4	22	Melanoma (skin)	19	10.2	26.0	13.5-38.5	35
Lung	24	8.1	32.0	18.9-45.1	25	Lung	16	8.6	19.5	9.0-30.0	49
Lymphoma	11	3.7	19.0	6.7-31.2	44	Ovary	8	4.3	11.2	3.1-19.4	61
Lymphoma NOS	1	0.3	1.5	0 - 4.5	527	Lymphoma	7	3.8	14.8	2.5-27.2	50
Hodgkin lymphoma	2	0.7	5.4	0 - 13.6	247	Lymphoma NOS	0				
NHL	8	2.7	12.0	3.5-20.6	60	Hodgkin lymphoma	2	1.1	6.5	0 - 16.5	195
Leukaemia	11	3.7	16.5	6.3-26.7	49	NHL	5	2.7	8.3	1.0-15.6	67
Leukaemia NOS	0					Thyroid gland	6	3.2	16.1	1.9-30.3	72
Lymphoid leukaemia	6	2.0	9.8	1.6-18.0	64	Cervix	5	2.7	10.4	1.2-19.6	105
Myeloid leukaemia	5	1.7	6.7	0.6-12.8	195	Unknown primary	5	2.7	7.3	0.7-14.0	85
Leukaemia, other	0					Pancreas	4	2.2	4.5	0 - 9.2	218
Bladder & urinary tract	10	3.4	12.4	4.5-20.3	73	Skin (NMSC exc. SCC/BCC), Bladder & urinary tract	3	1.6	4.6	0 - 10.1	254
							3	1.6	2.0	0 - 4.2	*
All cancers	295	100.0	412.8	364-462	3	All cancers	186	100.0	299.5	252-347	4

CHS Goldfields Region

Males					Females						
	Cases	%	ASR	95%c.i.	Risk		Cases	%	ASR	95%c.i.	Risk
Prostate	44	29.9	132.5	93.2-172	6	Breast	21	24.7	70.8	39.8-102	12
Lung	23	15.6	68.8	40.5-97.1	11	Colorectal	12	14.1	40.4	16.9-63.8	20
Colorectal	13	8.8	35.1	15.8-54.4	24	Colon	7	8.2	21.9	5.1-38.6	45
Colon	9	6.1	23.5	8.0-39.0	43	Rectum	5	5.9	18.5	2.1-34.9	35
Rectum	4	2.7	11.6	0.0-23.1	55	Melanoma (skin)	7	8.2	21.6	5.4-37.8	38
Melanoma (skin)	11	7.5	30.1	12.0-48.2	31	Uterus	7	8.2	25.6	6.4-44.8	28
Lip, gum & mouth	5	3.4	13.4	1.6-25.1	73	Lung	6	7.1	22.8	4.4-41.3	28
Kidney	5	3.4	14.2	1.6-26.9	42	Thyroid gland	5	5.9	17.4	2.0-32.8	61
Bladder & urinary tract	5	3.4	14.6	1.7-27.5	62	Stomach	3	3.5	9.9	0 - 21.3	64
Stomach	4	2.7	11.3	0.1-22.4	92	Pancreas	3	3.5	9.3	0 - 20.1	191
Pancreas	4	2.7	12.1	0.1-24.1	56	Cervix	3	3.5	9.8	0 - 20.9	116
Gallbladder / bile ducts	3	2.0	8.4	0 - 17.9	146	Unknown primary	3	3.5	7.0	0 - 15.1	263
Larynx	3	2.0	8.1	0 - 17.5	86	Brain	2	2.4	4.7	0 - 11.2	437
Mesothelioma	3	2.0	10.3	0 - 22.0	50						
Brain	3	2.0	10.3	0 - 21.9	74						
Lymphoma	3	2.0	7.6	0 - 16.3	174						
All cancers	147	100.0	429.2	360-499	2	All cancers	85	100.0	278.5	218-339	4

CHS Great Southern Region

Males					Females						
	Cases	%	ASR	95%c.i.	Risk		Cases	%	ASR	95%c.i.	Risk
Prostate	63	33.3	112.4	83.8-141	7	Breast	30	21.9	63.6	40.0-87.3	13
Melanoma (skin)	18	9.5	39.9	19.6-60.2	21	Melanoma (skin)	16	11.7	34.5	15.6-53.4	34
Colorectal	16	8.5	30.9	15.1-46.7	25	Colorectal	14	10.2	22.9	10.1-35.7	28
Colon	15	7.9	28.3	13.4-43.1	27	Colon	12	8.8	20.1	8.1-32.1	30
Rectum	1	0.5	2.7	0 - 7.9	453	Rectum	2	1.5	2.8	0 - 7.2	375
Lung	13	6.9	24.6	10.8-38.5	36	Lung	12	8.8	22.9	9.1-36.6	47
Lymphoma	11	5.8	23.3	8.4-38.3	40	Uterus	9	6.6	19.5	6.1-32.9	32
Lymphoma NOS	0					Myeloma	7	5.1	12.4	2.3-22.5	73
Hodgkin lymphoma	0					Lymphoma	6	4.4	10.3	0 - 21.0	179
NHL	11	5.8	23.3	8.4-38.3	40	Lymphoma NOS	0				
Kidney	8	4.2	14.8	4.1-25.5	60	Hodgkin lymphoma	1	0.7	4.7	0 - 13.8	387
Leukaemia	7	3.7	17.2	3.3-31.0	55	NHL	5	3.6	5.6	0 - 11.3	332
Leukaemia NOS	1	0.5	0.9	0 - 2.7	*	Pancreas	5	3.6	8.6	0.4-16.8	115
Lymphoid leukaemia	4	2.1	11.3	0 - 23.3	82	Cervix	4	2.9	10.3	0 - 21.4	125
Myeloid leukaemia	2	1.1	4.9	0 - 11.8	167	Unknown primary	4	2.9	2.8	0.1-5.5	*
Leukaemia, other	0					Leukaemia	4	2.9	7.3	0 - 14.8	107
Bladder & urinary tract	6	3.2	9.7	1.6-17.9	126						
All cancers	189	100.0	363.3	309-418	3	All cancers	137	100.0	266.7	218-315	4

Appendix 3D. Cancer incidence, Western Australia, 2009: 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	150	31.8	121.4	102-141	7	Breast	92	26.7	77.8	61.3-94.3	12
Colorectal	65	13.8	51.0	38.2-63.8	17	Colorectal	46	13.4	33.3	23.1-43.4	24
Colon	40	8.5	32.2	22.0-42.4	24	Colon	35	10.2	24.8	16.1-33.5	31
Rectum	24	5.1	18.3	10.6-26.0	57	Rectum	11	3.2	8.5	3.2-13.7	108
Melanoma (skin)	64	13.6	52.7	39.4-66.0	16	Melanoma (skin)	40	11.6	41.0	27.5-54.4	26
Lung	38	8.1	26.5	17.8-35.3	32	Lung	30	8.7	21.4	13.3-29.5	41
Lymphoma	19	4.0	17.6	9.4-25.9	43	Leukaemia	13	3.8	12.0	4.3-19.7	99
Lymphoma NOS	1	0.2	0.9	0 - 2.7	646	Leukaemia NOS	0				
Hodgkin lymphoma	4	0.8	5.2	0 - 10.4	252	Lymphoid leukaemia	9	2.6	8.9	1.9-15.9	121
NHL	14	3.0	11.5	5.4-17.7	56	Myeloid leukaemia	4	1.2	3.0	0 - 6.3	519
Bladder & urinary tract	16	3.4	10.9	5.4-16.4	77	Leukaemia, other	0				
Stomach	13	2.8	9.8	4.3-15.4	85	Uterus	11	3.2	9.4	3.7-15.0	82
Pancreas	10	2.1	5.9	2.1-9.6	514	Pancreas	10	2.9	6.2	2.1-10.3	192
Kidney	8	1.7	6.0	1.8-10.3	145	Thyroid gland	9	2.6	8.3	2.8-13.8	141
Lip, gum & mouth	7	1.5	7.2	1.6-12.7	109	Lip, gum & mouth	8	2.3	6.8	2.0-11.5	162
Mesothelioma	7	1.5	5.3	1.3-9.3	121	Ovary	8	2.3	6.8	2.0-11.6	104
Brain	7	1.5	6.6	1.3-11.8	135	Cervix	7	2.0	6.9	1.8-12.1	121
Leukaemia	7	1.5	7.4	1.4-13.5	129	Brain	7	2.0	7.5	1.3-13.7	141
Leukaemia NOS	0					Myeloma	7	2.0	4.9	1.0-8.8	217
Lymphoid leukaemia	4	0.8	4.5	0 - 9.2	215	Kidney	5	1.5	4.2	0.5-8.0	218
Myeloid leukaemia	3	0.6	2.9	0 - 6.7	322	Bladder & urinary tract	5	1.5	3.4	0.2-6.6	209
Leukaemia, other	0					Unknown primary	5	1.5	3.3	0.2-6.4	176
Myeloma	7	1.5	4.5	1.0-8.0	215	Lymphoma	5	1.5	4.4	0.3-8.4	221
Testis	6	1.3	7.7	1.4-14.1	176	Lymphoma NOS	0				
Unknown primary	6	1.3	5.7	0.3-11.0	183	Hodgkin lymphoma	1	0.3	1.2	0 - 3.7	971
Pharynx	5	1.1	4.1	0.4-7.8	231	NHL	4	1.2	3.1	0 - 6.4	285
Liver	4	0.8	3.2	0.1-6.3	201	Oesophagus	4	1.2	1.9	0 - 3.9	948
Skin (NMSC exc. SCC/BCC)	4	0.8	2.8	0 - 5.7	347	Liver	4	1.2	4.3	0 - 8.7	161
All cancers	472	100.0	380.9	345-416	3	All cancers	344	100.0	287.3	255-320	4

WA Country - all

Males					Females						
	Cases	%	ASR	95%c.i.	Risk		Cases	%	ASR	95%c.i.	Risk
Prostate	438	30.5	116.2	105-127	7	Breast	254	26.3	75.2	65.7-84.6	13
Melanoma (skin)	163	11.4	43.8	37.0-50.7	20	Colorectal	135	14.0	36.9	30.4-43.4	22
Colorectal	160	11.2	41.4	34.8-47.9	20	Colon	95	9.8	25.5	20.1-30.9	32
Colon	96	6.7	24.7	19.7-29.8	32	Rectum	40	4.1	11.4	7.8-15.1	74
Rectum	63	4.4	16.4	12.3-20.6	50	Melanoma (skin)	109	11.3	33.9	27.3-40.5	29
Lung	134	9.3	34.5	28.5-40.4	24	Lung	80	8.3	21.5	16.5-26.4	39
Lymphoma	56	3.9	16.6	12.1-21.1	52	Uterus	41	4.2	13.0	8.9-17.0	58
Lymphoma NOS	2	0.1	0.6	0 - 1.4	1136	Pancreas	28	2.9	6.9	4.2-9.6	148
Hodgkin lymphoma	10	0.7	3.6	1.3-6.0	374	Leukaemia	27	2.8	7.9	4.6-11.1	131
NHL	44	3.1	12.4	8.6-16.2	63	Leukaemia NOS	0				
Bladder & urinary tract	44	3.1	10.5	7.3-13.7	96	Lymphoid leukaemia	17	1.8	5.3	2.6-8.0	188
Kidney	37	2.6	9.9	6.7-13.2	81	Myeloid leukaemia	10	1.0	2.6	0.9-4.2	433
Leukaemia	36	2.5	11.3	7.4-15.2	76	Leukaemia, other	0				
Leukaemia NOS	1	0.1	0.1	0 - 0.4	*	Cervix	26	2.7	8.8	5.3-12.2	120
Lymphoid leukaemia	24	1.7	8.1	4.7-11.5	100	Thyroid gland	26	2.7	9.2	5.6-12.9	122
Myeloid leukaemia	11	0.8	3.1	1.2-5.0	311	Lymphoma	25	2.6	7.6	4.4-10.8	118
Leukaemia, other	0					Lymphoma NOS	0				
Pancreas	32	2.2	7.9	5.1-10.7	135	Hodgkin lymphoma	5	0.5	2.1	0.2-4.1	567
Lip, gum & mouth	31	2.2	8.9	5.7-12.2	103	NHL	20	2.1	5.5	3.0-8.0	148
Stomach	30	2.1	7.7	4.9-10.5	110	Unknown primary	22	2.3	4.8	2.6-7.0	156
Unknown primary	29	2.0	7.5	4.6-10.3	124	Myeloma	19	2.0	5.2	2.8-7.6	171
Oesophagus	21	1.5	5.4	3.1-7.8	133	Ovary	18	1.9	5.2	2.7-7.7	134
Liver	20	1.4	5.2	2.9-7.5	141	Brain	16	1.7	5.2	2.4-7.9	210
Myeloma	20	1.4	5.0	2.7-7.2	135	Lip, gum & mouth	14	1.4	4.3	2.0-6.6	237
Pharynx	19	1.3	5.1	2.8-7.5	151	Bladder & urinary tract	14	1.4	3.4	1.5-5.3	238
Mesothelioma	19	1.3	5.3	2.9-7.7	118	Oesophagus	11	1.1	2.5	0.9-4.0	485
Brain	19	1.3	6.6	3.5-9.7	161	Kidney	10	1.0	2.9	1.0-4.7	361
Testis	16	1.1	5.6	2.8-8.4	228	Liver	9	0.9	3.1	0.9-5.3	318
Gallbladder / bile ducts	13	0.9	3.5	1.6-5.5	237	Tongue	8	0.8	2.5	0.7-4.3	354
Larynx	13	0.9	3.3	1.5-5.2	215	Skin (NMSC exc. SCC/BCC)	7	0.7	1.9	0.4-3.3	414
All cancers	1434	100.0	384.3	364-405	3	All cancers	966	100.0	281.6	263-300	4

Appendix 3D. Cancer incidence, Western Australia, 2009: 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	823	33.5	124.1	115-133	7	Breast	581	31.0	86.5	79.2-93.7	11
Colorectal	297	12.1	43.8	38.7-48.9	19	Colorectal	205	10.9	25.2	21.5-28.9	35
Colon	182	7.4	25.6	21.8-29.4	33	Colon	141	7.5	16.5	13.6-19.4	51
Rectum	114	4.6	18.0	14.6-21.3	45	Rectum	63	3.4	8.6	6.4-10.9	108
Melanoma (skin)	252	10.2	38.5	33.6-43.3	21	Lung	151	8.1	18.9	15.7-22.1	44
Lung	212	8.6	30.5	26.2-34.7	27	Melanoma (skin)	138	7.4	20.4	16.8-24.0	47
Lymphoma	103	4.2	16.5	13.2-19.8	62	Thyroid gland	79	4.2	13.4	10.4-16.4	72
Lymphoma NOS	5	0.2	1.0	0.0-2.0	1326	Uterus	67	3.6	9.0	6.8-11.3	96
Hodgkin lymphoma	12	0.5	2.3	1.0-3.7	563	Lymphoma	62	3.3	8.2	6.0-10.5	118
NHL	86	3.5	13.1	10.3-16.0	73	Lymphoma NOS	3	0.2	0.2	0 - 0.4	*
Bladder & urinary tract	76	3.1	10.2	7.8-12.5	97	Hodgkin lymphoma	9	0.5	1.9	0.6-3.2	559
Leukaemia	74	3.0	12.8	9.6-16.0	78	NHL	50	2.7	6.1	4.3-8.0	150
Leukaemia NOS	3	0.1	0.3	0 - 0.8	2458	Ovary	60	3.2	9.2	6.7-11.6	93
Lymphoid leukaemia	38	1.5	7.1	4.7-9.6	128	Pancreas	55	2.9	6.6	4.7-8.6	127
Myeloid leukaemia	33	1.3	5.4	3.4-7.4	217	Unknown primary	48	2.6	4.9	3.4-6.5	241
Leukaemia, other	0					Leukaemia	46	2.5	7.2	4.8-9.6	166
Kidney	67	2.7	10.4	7.9-13.0	81	Leukaemia NOS	1	0.1	0.1	0 - 0.4	2708
Unknown primary	64	2.6	8.9	6.6-11.2	114	Lymphoid leukaemia	21	1.1	3.3	1.6-5.0	393
Stomach	49	2.0	6.7	4.8-8.7	131	Myeloid leukaemia	24	1.3	3.7	2.0-5.4	319
Pancreas	46	1.9	6.7	4.7-8.7	131	Leukaemia, other	0				
Testis	35	1.4	6.7	4.4-8.9	191	Cervix	44	2.3	7.7	5.4-10.0	140
Brain	33	1.3	5.1	3.2-6.9	221	Kidney	40	2.1	6.1	4.1-8.2	146
Lip, gum & mouth	32	1.3	5.0	3.3-6.8	193	Bladder & urinary tract	39	2.1	4.1	2.7-5.5	261
Mesothelioma	29	1.2	3.9	2.4-5.4	223	Myeloma	31	1.7	3.4	2.1-4.7	291
Oesophagus	27	1.1	3.9	2.4-5.3	249	Brain	27	1.4	5.0	2.8-7.1	232
Liver	27	1.1	4.6	2.7-6.5	184	Stomach	22	1.2	2.8	1.6-4.1	256
Thyroid gland	27	1.1	4.3	2.6-5.9	228	Gallbladder / bile ducts	17	0.9	1.8	0.9-2.8	619
Pharynx	22	0.9	3.3	1.9-4.7	267	Skin (NMSC exc. SCC/BCC)	17	0.9	1.8	0.8-2.8	627
Myeloma	20	0.8	2.9	1.6-4.2	309	Liver	16	0.9	1.9	0.9-2.9	446
Gallbladder / bile ducts	19	0.8	2.7	1.5-4.0	310	Lip, gum & mouth	15	0.8	2.1	1.0-3.2	407
All cancers	2460	100.0	371.9	357-387	3	All cancers	1874	100.0	261.2	249-274	4

South Metro AHS

Males					Females						
	Cases	%	ASR	95%c.i.	Risk		Cases	%	ASR	95%c.i.	Risk
Prostate	768	32.1	121.1	112-130	7	Breast	477	28.5	79.7	72.3-87.2	12
Colorectal	282	11.8	43.5	38.2-48.8	20	Colorectal	205	12.3	28.6	24.3-32.8	31
Colon	193	8.1	29.0	24.7-33.3	30	Colon	143	8.6	19.2	15.8-22.6	47
Rectum	89	3.7	14.5	11.4-17.6	58	Rectum	62	3.7	9.3	6.8-11.9	90
Lung	237	9.9	34.2	29.7-38.8	25	Lung	162	9.7	21.6	18.0-25.1	38
Melanoma (skin)	228	9.5	38.4	33.3-43.5	23	Melanoma (skin)	153	9.2	24.9	20.7-29.0	40
Lymphoma	96	4.0	15.5	12.2-18.7	62	Lymphoma	85	5.1	12.7	9.8-15.7	71
Lymphoma NOS	3	0.1	0.5	0 - 1.0	1662	Lymphoma NOS	1	0.1	0.1	0 - 0.2	*
Hodgkin lymphoma	11	0.5	2.6	1.0-4.1	559	Hodgkin lymphoma	6	0.4	1.3	0.2-2.4	1075
NHL	82	3.4	12.4	9.6-15.3	73	NHL	78	4.7	11.4	8.7-14.1	76
Kidney	79	3.3	13.5	10.4-16.7	67	Uterus	68	4.1	10.7	8.1-13.4	69
Bladder & urinary tract	71	3.0	10.7	8.1-13.3	81	Thyroid gland	52	3.1	10.5	7.6-13.4	96
Leukaemia	59	2.5	10.3	7.5-13.1	91	Pancreas	48	2.9	6.0	4.2-7.9	153
Leukaemia NOS	1	0.0	0.1	0 - 0.3	*	Unknown primary	45	2.7	5.1	3.4-6.8	204
Lymphoid leukaemia	29	1.2	5.5	3.3-7.7	152	Kidney	43	2.6	7.2	4.9-9.5	127
Myeloid leukaemia	29	1.2	4.7	2.9-6.5	226	Ovary	39	2.3	6.4	4.3-8.6	141
Leukaemia, other	0					Leukaemia	37	2.2	6.2	3.8-8.5	177
Pancreas	50	2.1	7.5	5.4-9.6	119	Leukaemia NOS	0				
Unknown primary	45	1.9	6.6	4.6-8.7	168	Lymphoid leukaemia	23	1.4	3.8	1.9-5.7	287
Stomach	42	1.8	6.4	4.4-8.3	144	Myeloid leukaemia	14	0.8	2.3	1.0-3.6	458
Oesophagus	40	1.7	6.3	4.3-8.4	130	Leukaemia, other	0				
Lip, gum & mouth	39	1.6	6.6	4.5-8.8	161	Brain	29	1.7	4.4	2.6-6.2	212
Mesothelioma	33	1.4	5.1	3.3-6.8	148	Bladder & urinary tract	24	1.4	2.8	1.6-4.1	311
Brain	33	1.4	6.3	4.0-8.7	153	Cervix	22	1.3	4.1	2.3-5.9	256
Myeloma	30	1.3	4.5	2.9-6.2	199	Stomach	18	1.1	2.2	1.1-3.4	487
Liver	29	1.2	4.4	2.8-6.1	207	Lip, gum & mouth	14	0.8	2.2	1.0-3.5	421
Pharynx	27	1.1	4.9	3.1-6.8	180	Oesophagus	14	0.8	1.8	0.8-2.9	447
Thyroid gland	26	1.1	4.9	3.0-6.8	198	Myeloma	12	0.7	1.4	0.5-2.2	639
Skin (NMSC exc. SCC/BCC)	22	0.9	3.0	1.7-4.3	334	Myelodysplastic diseases	12	0.7	1.4	0.5-2.3	610
Myelodysplastic diseases	22	0.9	2.6	1.5-3.8	481	Gallbladder / bile ducts	10	0.6	1.4	0.5-2.3	572
All cancers	2394	100.0	380.4	365-396	3	All cancers	1671	100.0	257.6	244-271	4

Appendix 3D. Cancer incidence, Western Australia, 2009: Leading types by sex and geographic area

WA Metro - all						Females					
Males						Females					
	Cases	%	ASR	95%c.i.	Risk		Cases	%	ASR	95%c.i.	Risk
Prostate	1591	32.8	122.8	117-129	7	Breast	1058	29.8	83.3	78.1-88.5	11
Colorectal	579	11.9	43.6	39.9-47.3	20	Colorectal	410	11.6	26.7	23.9-29.5	33
Colon	375	7.7	27.2	24.4-30.1	32	Colon	284	8.0	17.7	15.5-20.0	49
Rectum	203	4.2	16.3	14.0-18.6	50	Rectum	125	3.5	9.0	7.3-10.6	99
Melanoma (skin)	480	9.9	38.3	34.8-41.8	22	Lung	313	8.8	20.2	17.8-22.6	41
Lung	449	9.3	32.3	29.2-35.4	26	Melanoma (skin)	291	8.2	22.5	19.8-25.2	44
Lymphoma	199	4.1	16.1	13.7-18.4	62	Lymphoma	147	4.1	10.4	8.6-12.2	90
Lymphoma NOS	8	0.2	0.8	0.2-1.3	1451	Lymphoma NOS	4	0.1	0.1	0.0-0.2	*
Hodgkin lymphoma	23	0.5	2.5	1.4-3.5	556	Hodgkin lymphoma	15	0.4	1.6	0.8-2.5	730
NHL	168	3.5	12.9	10.9-14.9	73	NHL	128	3.6	8.6	7.0-10.3	102
Bladder & urinary tract	147	3.0	10.4	8.7-12.2	89	Uterus	135	3.8	9.9	8.1-11.6	81
Kidney	146	3.0	11.9	9.9-13.9	74	Thyroid gland	131	3.7	12.0	9.9-14.1	81
Leukaemia	133	2.7	11.6	9.5-13.8	84	Pancreas	103	2.9	6.4	5.0-7.7	139
Leukaemia NOS	4	0.1	0.2	0 - 0.5	4889	Ovary	99	2.8	7.9	6.3-9.5	112
Lymphoid leukaemia	67	1.4	6.4	4.7-8.0	138	Unknown primary	93	2.6	5.0	3.9-6.1	221
Myeloid leukaemia	62	1.3	5.0	3.7-6.4	221	Kidney	83	2.3	6.6	5.1-8.2	137
Leukaemia, other	0					Leukaemia	83	2.3	6.7	5.0-8.4	170
Unknown primary	109	2.2	7.8	6.2-9.3	136	Leukaemia NOS	1	0.0	0.1	0 - 0.2	5317
Pancreas	96	2.0	7.1	5.6-8.5	125	Lymphoid leukaemia	44	1.2	3.6	2.3-4.8	333
Stomach	91	1.9	6.6	5.2-8.0	137	Myeloid leukaemia	38	1.1	3.1	2.0-4.2	371
Lip, gum & mouth	71	1.5	5.8	4.4-7.2	177	Leukaemia, other	0				
Oesophagus	67	1.4	5.0	3.8-6.3	172	Cervix	66	1.9	6.0	4.5-7.5	177
Brain	66	1.4	5.7	4.2-7.2	182	Bladder & urinary tract	63	1.8	3.5	2.5-4.4	282
Mesothelioma	62	1.3	4.5	3.3-5.6	179	Brain	56	1.6	4.7	3.3-6.1	221
Liver	56	1.2	4.5	3.3-5.8	194	Myeloma	43	1.2	2.4	1.6-3.2	392
Testis	56	1.2	5.7	4.2-7.2	225	Stomach	40	1.1	2.6	1.7-3.4	333
Thyroid gland	53	1.1	4.5	3.3-5.8	213	Lip, gum & mouth	29	0.8	2.2	1.3-3.0	414
Myeloma	50	1.0	3.7	2.6-4.8	244	Oesophagus	27	0.8	1.4	0.8-2.1	766
Pharynx	49	1.0	4.0	2.9-5.2	219	Gallbladder / bile ducts	27	0.8	1.6	1.0-2.3	590
Skin (NMSC exc. SCC/BCC)	39	0.8	2.8	1.9-3.8	368	Skin (NMSC exc. SCC/BCC)	26	0.7	1.5	0.9-2.2	653
All cancers	4854	100.0	376.0	365-387	3	All cancers	3545	100.0	259.5	250-269	4

All Western Australia						Females					
Males						Females					
	Cases	%	ASR	95%c.i.	Risk		Cases	%	ASR	95%c.i.	Risk
Prostate	2030	32.3	121.4	116-127	7	Breast	1313	29.1	81.7	77.1-86.3	11
Colorectal	739	11.7	43.2	40.0-46.4	20	Colorectal	545	12.1	28.8	26.2-31.4	30
Colon	471	7.5	26.7	24.2-29.2	32	Colon	379	8.4	19.3	17.2-21.4	44
Rectum	266	4.2	16.3	14.3-18.3	50	Rectum	165	3.7	9.5	8.0-11.0	92
Melanoma (skin)	643	10.2	39.6	36.5-42.7	21	Melanoma (skin)	400	8.9	24.8	22.3-27.4	40
Lung	583	9.3	32.9	30.1-35.6	25	Lung	393	8.7	20.5	18.3-22.7	40
Lymphoma	255	4.1	16.2	14.1-18.3	59	Uterus	176	3.9	10.5	8.9-12.1	75
Lymphoma NOS	10	0.2	0.7	0.2-1.2	1370	Lymphoma	172	3.8	9.8	8.2-11.4	95
Hodgkin lymphoma	33	0.5	2.7	1.8-3.7	501	Lymphoma NOS	4	0.1	0.1	0.0-0.2	*
NHL	212	3.4	12.8	11.0-14.5	71	Hodgkin lymphoma	20	0.4	1.7	0.9-2.5	690
Bladder & urinary tract	191	3.0	10.4	8.9-11.9	90	NHL	148	3.3	8.0	6.6-9.4	110
Kidney	183	2.9	11.4	9.7-13.2	75	Thyroid gland	159	3.5	11.6	9.7-13.4	86
Leukaemia	169	2.7	11.6	9.7-13.4	82	Pancreas	131	2.9	6.5	5.3-7.7	140
Leukaemia NOS	5	0.1	0.2	0.0-0.4	6335	Ovary	117	2.6	7.3	5.9-8.7	116
Lymphoid leukaemia	91	1.4	6.8	5.3-8.3	127	Unknown primary	115	2.5	5.0	3.9-6.0	205
Myeloid leukaemia	73	1.2	4.6	3.5-5.7	238	Leukaemia	110	2.4	7.0	5.5-8.5	160
Leukaemia, other	0					Leukaemia NOS	1	0.0	0.1	0 - 0.2	6593
Unknown primary	138	2.2	7.7	6.4-9.1	133	Lymphoid leukaemia	61	1.4	3.9	2.8-5.1	287
Pancreas	128	2.0	7.3	6.0-8.6	127	Myeloid leukaemia	48	1.1	3.0	2.0-3.9	383
Stomach	121	1.9	6.8	5.6-8.1	130	Leukaemia, other	0				
Lip, gum & mouth	102	1.6	6.5	5.2-7.7	152	Kidney	93	2.1	5.8	4.6-7.1	157
Oesophagus	88	1.4	5.1	4.0-6.2	161	Cervix	92	2.0	6.7	5.3-8.0	160
Brain	85	1.4	5.8	4.5-7.1	178	Bladder & urinary tract	77	1.7	3.5	2.6-4.3	272
Mesothelioma	81	1.3	4.7	3.6-5.7	160	Brain	72	1.6	4.8	3.6-6.1	218
Liver	76	1.2	4.7	3.6-5.8	178	Myeloma	62	1.4	3.0	2.2-3.9	306
Testis	72	1.1	5.7	4.3-7.0	226	Stomach	46	1.0	2.5	1.7-3.2	351
Myeloma	70	1.1	4.0	3.0-4.9	206	Lip, gum & mouth	43	1.0	2.6	1.8-3.5	355
Pharynx	68	1.1	4.3	3.3-5.3	199	Oesophagus	38	0.8	1.7	1.1-2.2	680
Thyroid gland	64	1.0	4.3	3.2-5.3	234	Liver	33	0.7	1.9	1.2-2.7	508
Skin (NMSC exc. SCC/BCC)	47	0.7	2.6	1.8-3.4	399	Gallbladder / bile ducts	33	0.7	1.7	1.0-2.3	512
All cancers	6291	100.0	378.2	369-388	3	All cancers	4514	100.0	264.5	256-273	4

Appendix 3E. Cancer mortality, Western Australia, 2009: Leading types by sex and geographic area

CHS Kimberley Region

Males					Females						
	Deaths	%	ASR	95%c.i.	Risk		Deaths	%	ASR	95%c.i.	Risk
Lung	3	15.8	22.5	0 - 48.1	21	Breast	4	20.0	30.0	0 - 60.6	21
Prostate	3	15.8	21.8	0 - 46.5	32	Pancreas	3	15.0	26.9	0 - 58.6	25
Gallbladder / bile ducts	2	10.5	10.5	0 - 25.3	77	Oesophagus	2	10.0	16.6	0 - 40.7	40
Pancreas	2	10.5	10.5	0 - 25.3	77	Lung	2	10.0	11.2	0 - 26.7	258
Mesothelioma	2	10.5	14.8	0 - 35.3	32	Unknown primary	2	10.0	20.4	0 - 48.5	38
Colorectal	1	5.3	6.3	0 - 18.7	127	Colorectal	1	5.0	4.2	0 - 12.4	287
Colon	1	5.3	6.3	0 - 18.7	127	Colon	1	5.0	4.2	0 - 12.4	287
Rectum	0				-	Rectum	0				-
Lip, gum & mouth	1	5.3	4.6	0 - 13.6	262	Liver	1	5.0	9.6	0 - 28.3	*
Oesophagus	1	5.3	4.3	0 - 12.7	234	Cervix	1	5.0	5.3	0 - 15.7	227
Liver	1	5.3	4.3	0 - 12.7	234	Ovary	1	5.0	5.2	0 - 15.4	193
Brain	1	5.3	4.2	0 - 12.3	193	Kidney	1	5.0	5.2	0 - 15.4	193
Unknown primary	1	5.3	7.0	0 - 20.7	*	Leukaemia	1	5.0	7.4	0 - 21.9	244
Lymphoma	1	5.3	4.3	0 - 12.7	234	Leukaemia NOS	0				-
Lymphoma NOS	0				-	Lymphoid leukaemia	0				-
Hodgkin lymphoma	0				-	Myeloid leukaemia	1	5.0	7.4	0 - 21.9	244
NHL	1	5.3	4.3	0 - 12.7	234	Leukaemia, other	0				-
All cancer deaths	19	100.0	115.0	62.1-168	6	All cancer deaths	20	100.0	147.8	80.0-216	6

CHS Pilbara Region

Males					Females						
	Deaths	%	ASR	95%c.i.	Risk		Deaths	%	ASR	95%c.i.	Risk
Oesophagus	3	17.6	14.8	0 - 34.6	34	Colorectal	1	25.0	3.9	0 - 11.6	407
Melanoma (skin)	3	17.6	14.5	0 - 33.5	46	Colon	0				-
Colorectal	2	11.8	7.8	0 - 19.2	116	Rectum	1	25.0	3.9	0 - 11.6	407
Colon	1	5.9	5.1	0 - 15.1	158	Breast	1	25.0	4.3	0 - 12.8	232
Rectum	1	5.9	2.7	0 - 8.1	437	Cervix	1	25.0	20.0	0 - 59.0	21
Unknown primary	2	11.8	11.7	0 - 29.9	55	Leukaemia	1	25.0	20.0	0 - 59.0	21
Tongue	1	5.9	2.8	0 - 8.3	287	Leukaemia NOS	0				-
Stomach	1	5.9	2.8	0 - 8.3	287	Lymphoid leukaemia	0				-
Liver	1	5.9	8.9	0 - 26.2	68	Myeloid leukaemia	1	25.0	20.0	0 - 59.0	21
Pancreas	1	5.9	5.1	0 - 15.1	158	Leukaemia, other	0				-
Larynx	1	5.9	5.1	0 - 15.1	158						
Lung	1	5.9	9.4	0 - 27.9	43						
Mesothelioma	1	5.9	2.8	0 - 8.3	287						
All cancer deaths	17	100.0	85.6	39.4-132	8	All cancer deaths	4	100.0	48.3	0 - 104	10

CHS Midwest Region

Males					Females						
	Deaths	%	ASR	95%c.i.	Risk		Deaths	%	ASR	95%c.i.	Risk
Lung	24	33.8	42.6	25.1-60.0	19	Breast	10	22.7	21.4	7.5-35.2	42
Prostate	6	8.5	8.8	1.3-16.2	123	Unknown primary	6	13.6	10.3	1.8-18.9	74
Colorectal	5	7.0	7.5	0.7-14.3	123	Lung	5	11.4	9.9	0.9-18.9	96
Colon	4	5.6	6.5	0 - 13.1	123	Bladder & urinary tract	4	9.1	8.9	0 - 18.0	118
Rectum	1	1.4	0.9	0 - 2.8	*	Pancreas	3	6.8	5.8	0 - 12.7	146
Bladder & urinary tract	4	5.6	8.6	0.2-17.1	111	Uterus	3	6.8	7.3	0 - 15.5	100
Liver	3	4.2	6.2	0 - 13.2	100	Colorectal	2	4.5	3.7	0 - 9.2	308
Pancreas	3	4.2	5.4	0 - 11.5	483	Colon	1	2.3	1.1	0 - 3.2	*
Lymphoma	3	4.2	6.0	0 - 12.9	113	Rectum	1	2.3	2.6	0 - 7.7	308
Lymphoma NOS	0				-	Lymphoma	2	4.5	3.8	0 - 9.5	454
Hodgkin lymphoma	0				-	Lymphoma NOS	0				-
NHL	3	4.2	6.0	0 - 12.9	113	Hodgkin lymphoma	0				-
Pharynx	2	2.8	3.7	0 - 8.9	215	NHL	2	4.5	3.8	0 - 9.5	454
Gallbladder / bile ducts	2	2.8	3.2	0 - 7.6	215	Liver	1	2.3	2.2	0 - 6.5	183
Melanoma (skin)	2	2.8	4.2	0 - 10.1	210	Gallbladder / bile ducts	1	2.3	1.2	0 - 3.5	*
Brain	2	2.8	4.3	0 - 10.2	231	Melanoma (skin)	1	2.3	1.1	0 - 3.2	*
Unknown primary	2	2.8	4.0	0 - 9.6	136	Skin (NMSC inc. SCC/BCC)	1	2.3	1.2	0 - 3.5	*
All cancer deaths	71	100.0	127.9	97.4-158	7	All cancer deaths	44	100.0	84.9	58.6-111	11

Appendix 3E. Cancer mortality, Western Australia, 2009: Leading types by sex and geographic area

CHS Wheatbelt Region

Males					Females						
	Deaths	%	ASR	95%c.i.	Risk		Deaths	%	ASR	95%c.i.	Risk
Lung	25	24.5	31.8	19.0-44.6	26	Lung	19	22.1	24.8	12.8-36.9	38
Prostate	12	11.8	12.6	5.2-19.9	131	Breast	14	16.3	15.5	6.6-24.3	67
Colorectal	11	10.8	14.5	5.3-23.7	47	Colorectal	9	10.5	12.3	2.3-22.4	90
Colon	5	4.9	6.0	0.6-11.3	100	Colon	7	8.1	8.9	0.0-17.7	191
Rectum	6	5.9	8.5	1.0-16.0	88	Rectum	2	2.3	3.4	0 - 8.2	171
Unknown primary	7	6.9	7.8	1.9-13.8	156	Unknown primary	7	8.1	9.6	2.1-17.1	67
Leukaemia	6	5.9	7.9	1.4-14.4	147	Pancreas	6	7.0	6.5	0.8-12.1	217
Leukaemia NOS	0				-	Ovary	6	7.0	6.6	1.0-12.3	162
Lymphoid leukaemia	1	1.0	1.3	0 - 4.0	300	Lymphoma	5	5.8	6.4	0.4-12.3	121
Myeloid leukaemia	5	4.9	6.6	0.6-12.5	288	Lymphoma NOS	0			-	-
Leukaemia, other	0				-	Hodgkin lymphoma	0			-	-
Oesophagus	5	4.9	5.3	0.5-10.1	191	NHL	5	5.8	6.4	0.4-12.3	121
Brain	4	3.9	6.8	0.1-13.6	144	Oesophagus	2	2.3	1.6	0 - 4.0	*
Stomach	3	2.9	3.8	0 - 8.1	191	Stomach	2	2.3	3.8	0 - 9.1	171
Skin (NMSC inc. SCC/BCC)	3	2.9	5.1	0 - 11.5	214	Brain	2	2.3	1.7	0 - 4.0	*
Kidney	3	2.9	3.5	0 - 7.5	527	Leukaemia	2	2.3	2.3	0 - 5.7	248
Lymphoma	3	2.9	4.2	0 - 9.0	123						
All cancer deaths	102	100.0	128.7	103-155	7	All cancer deaths	86	100.0	106.4	81.5-131	10

CHS Goldfields Region

Males					Females						
	Deaths	%	ASR	95%c.i.	Risk		Deaths	%	ASR	95%c.i.	Risk
Lung	16	22.9	46.9	23.7-70.1	15	Colorectal	6	21.4	16.9	2.7-31.1	49
Prostate	10	14.3	30.3	11.2-49.4	58	Colon	5	17.9	14.4	1.0-27.7	49
Mesothelioma	5	7.1	16.2	1.9-30.5	35	Rectum	1	3.6	2.5	0 - 7.5	*
Liver	4	5.7	11.0	0.2-21.8	324	Lung	5	17.9	19.7	2.3-37.1	28
Pancreas	4	5.7	12.1	0.1-24.1	56	Breast	4	14.3	12.0	0 - 24.3	94
Melanoma (skin)	4	5.7	13.3	0.3-26.3	39	Unknown primary	3	10.7	7.0	0 - 15.1	263
Colorectal	3	4.3	7.1	0 - 15.0	224	Stomach	2	7.1	5.8	0 - 13.8	188
Colon	2	2.9	4.6	0 - 10.9	502	Parotid gland	1	3.6	2.0	0 - 6.0	*
Rectum	1	1.4	2.5	0 - 7.4	402	Small intestine	1	3.6	1.9	0 - 5.7	*
Pharynx	3	4.3	8.0	0 - 17.2	130	Gallbladder / bile ducts	1	3.6	4.1	0 - 12.2	97
Stomach	3	4.3	8.5	0 - 18.2	76	Pancreas	1	3.6	2.5	0 - 7.5	*
Bladder & urinary tract	3	4.3	9.6	0 - 20.6	159	Uterus	1	3.6	4.2	0 - 12.4	143
Brain	3	4.3	10.3	0 - 21.9	59	Kidney	1	3.6	4.2	0 - 12.4	143
Leukaemia	3	4.3	9.4	0 - 20.1	49	Bladder & urinary tract	1	3.6	4.1	0 - 12.2	97
						Brain	1	3.6	1.9	0 - 5.7	*
All cancer deaths	70	100.0	209.3	160-259	4	All cancer deaths	28	100.0	86.6	53.2-120	9

CHS Great Southern Region

Males					Females						
	Deaths	%	ASR	95%c.i.	Risk		Deaths	%	ASR	95%c.i.	Risk
Prostate	15	20.8	21.0	10.0-32.0	67	Lung	13	27.1	26.2	11.5-40.9	27
Lung	10	13.9	18.7	6.5-30.9	52	Breast	10	20.8	20.7	5.5-35.9	54
Colorectal	8	11.1	14.0	3.8-24.3	67	Colorectal	5	10.4	7.7	0.3-15.0	143
Colon	6	8.3	9.8	1.4-18.2	114	Colon	5	10.4	7.7	0.3-15.0	143
Rectum	2	2.8	4.2	0 - 10.1	162	Rectum	0			-	-
Kidney	5	6.9	6.8	0.6-13.1	363	Pancreas	4	8.3	4.9	0 - 10.1	375
Bladder & urinary tract	5	6.9	7.7	0.7-14.6	125	Brain	3	6.3	7.6	0 - 16.4	106
Oesophagus	3	4.2	3.1	0 - 6.6	*	Unknown primary	3	6.3	3.7	0 - 8.6	436
Unknown primary	3	4.2	3.4	0 - 7.2	*	Leukaemia	2	4.2	3.1	0 - 8.0	332
Stomach	2	2.8	3.1	0 - 7.8	363	Leukaemia NOS	0			-	-
Liver	2	2.8	3.9	0 - 9.4	143	Lymphoid leukaemia	0			-	-
Pancreas	2	2.8	2.5	0 - 5.9	*	Myeloid leukaemia	2	4.2	3.1	0 - 8.0	332
Pleura	2	2.8	7.4	0 - 18.1	219	Leukaemia, other	0			-	-
Melanoma (skin)	2	2.8	3.6	0 - 9.1	453	Oesophagus	1	2.1	0.7	0 - 2.1	*
Skin (NMSC inc. SCC/BCC)	2	2.8	2.4	0 - 5.8	*	Melanoma (skin)	1	2.1	1.1	0 - 3.3	*
Lymphoma	2	2.8	2.1	0 - 5.1	*	Mesothelioma	1	2.1	0.7	0 - 2.1	*
						Cervix	1	2.1	0.7	0 - 2.1	*
All cancer deaths	72	100.0	118.8	89.3-148	10	All cancer deaths	48	100.0	83.1	56.5-110	12

Appendix 3E. Cancer mortality, Western Australia, 2009: Leading types by sex and geographic area

CHS South West Region

Males						Females					
	Deaths	%	ASR	95%c.i.	Risk		Deaths	%	ASR	95%c.i.	Risk
Lung	34	25.2	23.1	15.0-31.2	37	Lung	26	22.0	17.6	10.5-24.7	46
Prostate	21	15.6	12.4	7.0-17.9	150	Breast	16	13.6	12.5	6.1-18.9	72
Colorectal	15	11.1	11.7	5.7-17.8	49	Colorectal	14	11.9	9.9	4.4-15.5	117
Colon	11	8.1	8.7	3.5-13.9	63	Colon	11	9.3	8.2	3.1-13.4	129
Rectum	4	3.0	3.0	0 - 6.0	215	Rectum	3	2.5	1.7	0 - 3.9	1214
Bladder & urinary tract	9	6.7	5.7	1.9-9.5	280	Pancreas	10	8.5	6.1	2.0-10.1	161
Stomach	7	5.2	5.3	1.3-9.3	201	Gallbladder / bile ducts	7	5.9	3.6	0.7-6.4	242
Pancreas	7	5.2	4.7	1.1-8.4	270	Brain	6	5.1	6.1	0.9-11.4	173
Melanoma (skin)	7	5.2	4.6	1.0-8.1	197	Uterus	5	4.2	4.1	0.4-7.8	201
Mesothelioma	6	4.4	4.4	0.8-8.0	163	Lymphoma	5	4.2	4.4	0.5-8.3	196
Kidney	4	3.0	3.1	0.0-6.2	178	Lymphoma NOS	0				-
Unknown primary	3	2.2	2.6	0 - 5.6	215	Hodgkin lymphoma	1	0.8	0.9	0 - 2.8	646
Lymphoma	3	2.2	2.5	0 - 5.3	195	NHL	4	3.4	3.4	0 - 6.9	280
Lymphoma NOS	0				-	Myelodysplastic diseases	4	3.4	1.6	0.0-3.2	*
Hodgkin lymphoma	1	0.7	0.8	0 - 2.4	492	Melanoma (skin)	3	2.5	2.8	0 - 6.0	346
NHL	2	1.5	1.7	0 - 4.0	321	Ovary	3	2.5	1.8	0 - 4.1	855
Myeloma	3	2.2	2.2	0 - 4.8	321	Oesophagus	2	1.7	1.2	0 - 3.1	1115
Oesophagus	2	1.5	1.7	0 - 4.0	345	Bone	2	1.7	2.6	0 - 6.4	476
Small intestine	2	1.5	1.7	0 - 4.2	280	Unknown primary	2	1.7	1.1	0 - 2.5	*
Skin (NMSC inc. SCC/BCC)	2	1.5	1.2	0 - 3.0	492	Tongue	1	0.8	0.5	0 - 1.6	*
Leukaemia	2	1.5	1.9	0 - 4.4	323	Pharynx	1	0.8	0.9	0 - 2.8	855
Leukaemia NOS	0				-	Anus	1	0.8	0.4	0 - 1.1	*
Lymphoid leukaemia	1	0.7	0.9	0 - 2.7	646	Liver	1	0.8	0.8	0 - 2.5	483
Myeloid leukaemia	1	0.7	0.9	0 - 2.7	646	Peritoneum/retro-p.	1	0.8	0.8	0 - 2.5	483
Leukaemia, other	0				-	Cervix	1	0.8	0.3	0 - 1.0	*
Lip, gum & mouth	1	0.7	0.8	0 - 2.4	492	Female genital, other	1	0.8	0.9	0 - 2.8	646
Tongue	1	0.7	0.9	0 - 2.7	646	Kidney	1	0.8	0.5	0 - 1.6	*
Pharynx	1	0.7	0.8	0 - 2.4	492	Bladder & urinary tract	1	0.8	0.9	0 - 2.8	646
Liver	1	0.7	0.9	0 - 2.7	646	Eye & lacrimal gland	1	0.8	0.5	0 - 1.6	*
Larynx	1	0.7	0.9	0 - 2.7	646	Leukaemia	1	0.8	0.4	0 - 1.1	*
All cancer deaths	135	100.0	95.4	78.9-112	9	All cancer deaths	118	100.0	83.8	67.5-100	12

WA Country - all

Males						Females					
	Deaths	%	ASR	95%c.i.	Risk		Deaths	%	ASR	95%c.i.	Risk
Lung	113	23.3	28.1	22.8-33.4	29	Lung	70	20.1	18.5	14.0-23.1	43
Prostate	67	13.8	15.0	11.3-18.6	99	Breast	59	17.0	15.7	11.5-20.0	60
Colorectal	45	9.3	11.4	8.0-14.8	64	Colorectal	38	10.9	9.5	6.2-12.8	115
Colon	30	6.2	7.5	4.8-10.3	93	Colon	30	8.6	7.2	4.4-10.0	152
Rectum	15	3.1	3.8	1.8-5.8	197	Rectum	8	2.3	2.3	0.6-4.0	474
Bladder & urinary tract	22	4.5	5.4	3.1-7.7	232	Pancreas	27	7.8	6.2	3.7-8.7	170
Pancreas	21	4.3	5.1	2.8-7.3	208	Unknown primary	23	6.6	5.3	3.0-7.6	158
Melanoma (skin)	20	4.1	4.9	2.7-7.1	155	Brain	13	3.7	3.8	1.6-5.9	246
Unknown primary	18	3.7	4.4	2.3-6.5	210	Lymphoma	13	3.7	3.4	1.5-5.4	267
Oesophagus	17	3.5	3.6	1.8-5.4	282	Lymphoma NOS	0				-
Stomach	17	3.5	4.3	2.3-6.4	208	Hodgkin lymphoma	1	0.3	0.3	0 - 1.0	1754
Mesothelioma	17	3.5	4.7	2.5-7.0	128	NHL	12	3.4	3.1	1.2-4.9	314
Leukaemia	15	3.1	3.9	1.9-6.0	188	Ovary	12	3.4	2.9	1.1-4.6	398
Leukaemia NOS	1	0.2	0.1	0 - 0.4	*	Gallbladder / bile ducts	10	2.9	2.0	0.7-3.3	426
Lymphoid leukaemia	4	0.8	1.1	0.0-2.2	454	Uterus	10	2.9	3.1	1.1-5.0	242
Myeloid leukaemia	10	2.1	2.7	1.0-4.4	321	Oesophagus	7	2.0	1.5	0.3-2.7	813
Leukaemia, other	0				-	Leukaemia	7	2.0	1.9	0.3-3.5	438
Liver	14	2.9	3.7	1.7-5.6	197	Leukaemia NOS	0				-
Kidney	13	2.7	3.0	1.3-4.7	341	Lymphoid leukaemia	1	0.3	0.1	0 - 0.4	*
Lymphoma	13	2.7	3.5	1.6-5.4	182	Myeloid leukaemia	6	1.7	1.8	0.2-3.3	438
Lymphoma NOS	0				-	Leukaemia, other	0				-
Hodgkin lymphoma	1	0.2	0.3	0 - 0.8	1446	Melanoma (skin)	6	1.7	1.4	0.2-2.7	989
NHL	12	2.5	3.2	1.4-5.1	208	Cervix	6	1.7	1.5	0.2-2.8	503
Brain	12	2.5	3.5	1.5-5.5	221	Bladder & urinary tract	6	1.7	1.8	0.3-3.3	403
Skin (NMSC inc. SCC/BCC)	10	2.1	2.6	0.9-4.2	328	Kidney	5	1.4	1.4	0.2-2.7	652
Larynx	8	1.6	2.3	0.7-3.9	321	Myeloma	5	1.4	1.5	0.1-2.8	562
Pharynx	7	1.4	1.8	0.4-3.2	387	Stomach	4	1.1	1.3	0.0-2.6	598
Gallbladder / bile ducts	7	1.4	1.8	0.5-3.2	367	Myelodysplastic diseases	4	1.1	0.6	0.0-1.2	*
Tongue	6	1.2	1.7	0.3-3.0	508	Liver	3	0.9	0.8	0 - 1.7	638
Myeloma	6	1.2	1.5	0.3-2.7	442	Mesothelioma	3	0.9	0.6	0 - 1.3	3282
All cancer deaths	486	100.0	121.0	110-132	8	All cancer deaths	348	100.0	88.5	78.6-98.4	11

Appendix 3E. Cancer mortality, Western Australia, 2009: Leading types by sex and geographic area

North Metro AHS

Males					Females						
	Deaths	%	ASR	95%c.i.	Risk		Deaths	%	ASR	95%c.i.	Risk
Lung	167	20.3	23.0	19.4-26.6	38	Lung	129	18.4	15.4	12.6-18.3	58
Colorectal	96	11.7	13.2	10.5-15.9	71	Breast	100	14.2	13.6	10.8-16.5	65
Colon	58	7.1	7.4	5.4-9.4	146	Colorectal	89	12.7	10.1	7.8-12.4	88
Rectum	38	4.6	5.8	3.9-7.7	138	Rectum	66	9.4	7.4	5.4-9.3	138
Prostate	95	11.6	11.2	8.9-13.6	123	Colon	23	3.3	2.7	1.5-4.0	240
Melanoma (skin)	40	4.9	5.5	3.7-7.4	189	Unknown primary	40	5.7	3.9	2.5-5.3	345
Bladder & urinary tract	39	4.8	5.0	3.3-6.6	212	Pancreas	31	4.4	3.6	2.2-4.9	245
Stomach	35	4.3	4.6	3.0-6.1	262	Brain	26	3.7	3.6	2.2-5.0	184
Pancreas	33	4.0	4.6	3.0-6.2	182	Leukaemia	25	3.6	2.9	1.7-4.1	345
Unknown primary	33	4.0	4.2	2.7-5.7	258	Leukaemia NOS	2	0.3	0.2	0 - 0.5	2708
Lymphoma	30	3.7	4.0	2.5-5.5	259	Lymphoid leukaemia	7	1.0	0.6	0.1-1.2	2652
Lymphoma NOS	1	0.1	0.2	0 - 0.5	6051	Myeloid leukaemia	16	2.3	2.1	1.0-3.1	464
Hodgkin lymphoma	1	0.1	0.2	0 - 0.5	7170	Leukaemia, other	0				-
NHL	28	3.4	3.7	2.3-5.1	281	Ovary	23	3.3	3.3	1.8-4.7	279
Mesothelioma	29	3.5	4.1	2.6-5.7	216	Lymphoma	23	3.3	2.1	1.1-3.1	661
Leukaemia	26	3.2	3.8	2.3-5.3	235	Lymphoma NOS	2	0.3	0.1	0 - 0.3	*
Leukaemia NOS	1	0.1	0.2	0 - 0.5	2458	Hodgkin lymphoma	1	0.1	0.2	0 - 0.7	6765
Lymphoid leukaemia	7	0.9	1.1	0.2-2.0	934	NHL	20	2.8	1.8	0.9-2.6	732
Myeloid leukaemia	18	2.2	2.5	1.3-3.7	360	Melanoma (skin)	19	2.7	2.6	1.3-3.8	325
Leukaemia, other	0				-	Bladder & urinary tract	18	2.6	1.3	0.7-1.9	2708
Oesophagus	25	3.0	3.5	2.1-5.0	249	Stomach	16	2.3	1.4	0.6-2.2	815
Brain	24	2.9	3.8	2.2-5.3	244	Myeloma	16	2.3	1.7	0.7-2.6	648
Liver	21	2.6	3.4	1.8-4.9	242	Liver	14	2.0	1.4	0.6-2.2	1025
Myeloma	19	2.3	2.6	1.4-3.8	320	Gallbladder / bile ducts	13	1.9	1.6	0.7-2.6	709
Gallbladder / bile ducts	18	2.2	2.3	1.2-3.4	434	Skin (NMSC inc. SCC/BCC)	13	1.9	1.1	0.4-1.8	1056
Kidney	15	1.8	1.9	0.9-2.9	684	Kidney	13	1.9	1.4	0.5-2.2	586
Skin (NMSC inc. SCC/BCC)	13	1.6	1.7	0.8-2.7	593	Cervix	12	1.7	1.8	0.7-2.8	502
Larynx	9	1.1	1.4	0.5-2.3	583	Oesophagus	10	1.4	1.0	0.3-1.8	1098
Lip, gum & mouth	7	0.9	1.0	0.2-1.8	769	Uterus	10	1.4	1.3	0.4-2.2	561
Myelodysplastic diseases	7	0.9	0.8	0.2-1.4	1229	Myelodysplastic diseases	10	1.4	0.7	0.2-1.2	3339
All cancer deaths	821	100.0	111.2	103-119	9	All cancer deaths	702	100.0	82.4	75.7-89.0	12

South Metro AHS

Males					Females						
	Deaths	%	ASR	95%c.i.	Risk		Deaths	%	ASR	95%c.i.	Risk
Lung	202	23.8	28.9	24.7-33.0	30	Lung	121	18.5	15.6	12.6-18.6	54
Prostate	93	11.0	11.3	8.9-13.7	120	Breast	89	13.6	12.6	9.8-15.5	72
Colorectal	87	10.2	12.3	9.6-15.0	84	Colorectal	82	12.5	10.6	8.0-13.1	82
Colon	58	6.8	8.3	6.0-10.5	130	Colon	58	8.9	7.3	5.3-9.4	117
Rectum	29	3.4	4.0	2.5-5.6	236	Rectum	24	3.7	3.2	1.8-4.6	273
Pancreas	38	4.5	5.8	3.9-7.6	146	Pancreas	54	8.3	6.2	4.4-8.1	156
Unknown primary	37	4.4	4.8	3.2-6.4	239	Unknown primary	31	4.7	3.3	2.0-4.7	286
Mesothelioma	33	3.9	4.9	3.2-6.7	180	Ovary	28	4.3	4.2	2.5-5.8	197
Oesophagus	31	3.7	4.5	2.8-6.1	207	Lymphoma	27	4.1	2.7	1.6-3.9	432
Stomach	29	3.4	4.2	2.6-5.8	224	Lymphoma NOS	1	0.2	0.1	0 - 0.2	*
Melanoma (skin)	29	3.4	4.2	2.6-5.9	223	Hodgkin lymphoma	2	0.3	0.2	0 - 0.6	2609
Lymphoma	27	3.2	3.8	2.3-5.3	245	NHL	24	3.7	2.4	1.3-3.5	517
Lymphoma NOS	0				-	Melanoma (skin)	23	3.5	3.4	1.9-4.9	283
Hodgkin lymphoma	0				-	Brain	23	3.5	3.4	1.8-5.0	272
NHL	27	3.2	3.8	2.3-5.3	245	Stomach	16	2.4	2.0	0.9-3.0	549
Kidney	26	3.1	3.8	2.3-5.3	277	Leukaemia	16	2.4	2.3	1.0-3.7	567
Bladder & urinary tract	25	2.9	3.6	2.1-5.1	261	Leukaemia NOS	0				-
Liver	24	2.8	3.4	2.0-4.9	318	Lymphoid leukaemia	5	0.8	0.3	0.0-0.6	*
Leukaemia	24	2.8	3.4	2.0-4.9	368	Myeloid leukaemia	11	1.7	2.0	0.7-3.4	567
Leukaemia NOS	0				-	Leukaemia, other	0				-
Lymphoid leukaemia	6	0.7	0.8	0.1-1.5	1180	Myeloma	15	2.3	2.0	0.9-3.1	446
Myeloid leukaemia	18	2.1	2.6	1.3-3.9	534	Bladder & urinary tract	14	2.1	1.6	0.7-2.6	436
Leukaemia, other	0				-	Oesophagus	12	1.8	1.4	0.5-2.2	613
Skin (NMSC inc. SCC/BCC)	21	2.5	2.9	1.6-4.2	381	Cervix	12	1.8	2.1	0.9-3.3	485
Brain	20	2.4	3.3	1.8-4.8	244	Uterus	12	1.8	1.4	0.5-2.2	681
Myeloma	20	2.4	3.1	1.7-4.5	265	Kidney	12	1.8	1.6	0.6-2.6	557
Gallbladder / bile ducts	12	1.4	1.9	0.8-3.0	353	Gallbladder / bile ducts	11	1.7	1.4	0.5-2.3	723
Myelodysplastic diseases	12	1.4	1.3	0.5-2.0	1374	Liver	7	1.1	1.0	0.2-1.9	695
Pharynx	9	1.1	1.5	0.5-2.6	472	Peritoneum/retro-p.	6	0.9	0.8	0.1-1.6	946
Lip, gum & mouth	8	0.9	1.3	0.4-2.1	527	Myelodysplastic diseases	6	0.9	0.5	0.1-0.8	*
All cancer deaths	849	100.0	120.2	112-129	8	All cancer deaths	654	100.0	84.3	77.2-91.4	11

Appendix 3E. Cancer mortality, Western Australia, 2009: Leading types by sex and geographic area

WA Metro - all

Males						Females					
	Deaths	%	ASR	95%c.i.	Risk		Deaths	%	ASR	95%c.i.	Risk
Lung	369	22.1	25.9	23.1-28.6	33	Lung	250	18.4	15.5	13.4-17.6	56
Prostate	188	11.3	11.3	9.6-13.0	121	Breast	189	13.9	13.2	11.2-15.2	68
Colorectal	183	11.0	12.8	10.8-14.7	77	Colorectal	171	12.6	10.3	8.6-12.0	85
Colon	116	6.9	7.8	6.3-9.3	138	Colon	124	9.1	7.3	5.9-8.7	127
Rectum	67	4.0	5.0	3.7-6.2	173	Rectum	47	3.5	3.0	2.0-3.9	256
Pancreas	71	4.3	5.1	3.9-6.4	163	Pancreas	85	6.3	4.8	3.7-6.0	192
Unknown primary	70	4.2	4.5	3.4-5.6	248	Unknown primary	71	5.2	3.6	2.7-4.6	312
Melanoma (skin)	69	4.1	4.9	3.7-6.1	204	Ovary	51	3.8	3.7	2.6-4.8	232
Stomach	64	3.8	4.4	3.3-5.5	241	Lymphoma	50	3.7	2.4	1.7-3.2	526
Bladder & urinary tract	64	3.8	4.3	3.2-5.4	234	Lymphoma NOS	3	0.2	0.1	0 - 0.2	*
Mesothelioma	62	3.7	4.5	3.3-5.7	197	Hodgkin lymphoma	3	0.2	0.2	0 - 0.6	3741
Lymphoma	57	3.4	3.9	2.9-5.0	251	NHL	44	3.2	2.1	1.4-2.8	612
Lymphoma NOS	1	0.1	0.1	0 - 0.3	*	Brain	49	3.6	3.5	2.4-4.5	219
Hodgkin lymphoma	1	0.1	0.1	0 - 0.3	*	Melanoma (skin)	42	3.1	2.9	2.0-3.9	305
NHL	55	3.3	3.7	2.7-4.8	262	Leukaemia	41	3.0	2.6	1.7-3.5	428
Oesophagus	56	3.4	4.0	2.9-5.1	226	Leukaemia NOS	2	0.1	0.1	0 - 0.3	5317
Leukaemia	50	3.0	3.6	2.5-4.7	286	Lymphoid leukaemia	12	0.9	0.5	0.2-0.8	5033
Leukaemia NOS	1	0.1	0.1	0 - 0.2	4889	Myeloid leukaemia	27	2.0	2.0	1.2-2.9	513
Lymphoid leukaemia	13	0.8	1.0	0.4-1.5	1031	Leukaemia, other	0				-
Myeloid leukaemia	36	2.2	2.6	1.7-3.4	429	Stomach	32	2.4	1.7	1.0-2.3	663
Leukaemia, other	0				-	Bladder & urinary tract	32	2.4	1.5	0.9-2.0	765
Liver	45	2.7	3.4	2.3-4.5	275	Myeloma	31	2.3	1.8	1.1-2.5	532
Brain	44	2.6	3.6	2.5-4.7	242	Kidney	25	1.8	1.5	0.8-2.1	578
Kidney	41	2.5	2.8	1.9-3.7	400	Gallbladder / bile ducts	24	1.8	1.5	0.9-2.2	709
Myeloma	39	2.3	2.8	1.9-3.7	292	Cervix	24	1.8	1.9	1.1-2.7	497
Skin (NMSC inc. SCC/BCC)	34	2.0	2.3	1.5-3.1	467	Oesophagus	22	1.6	1.2	0.6-1.8	788
Gallbladder / bile ducts	30	1.8	2.1	1.3-2.9	390	Uterus	22	1.6	1.3	0.7-1.9	615
Myelodysplastic diseases	19	1.1	1.0	0.5-1.5	1302	Liver	21	1.5	1.2	0.6-1.8	833
Lip, gum & mouth	15	0.9	1.1	0.5-1.7	625	Skin (NMSC inc. SCC/BCC)	17	1.3	0.7	0.3-1.1	2034
Pharynx	15	0.9	1.3	0.6-1.9	531	Myelodysplastic diseases	16	1.2	0.6	0.3-0.9	6510
All cancer deaths	1670	100.0	115.6	110-121	9	All cancer deaths	1356	100.0	83.3	78.4-88.1	12

All Western Australia

Males						Females					
	Deaths	%	ASR	95%c.i.	Risk		Deaths	%	ASR	95%c.i.	Risk
Lung	483	22.4	26.5	24.0-28.9	32	Lung	320	18.8	16.2	14.3-18.1	53
Prostate	255	11.8	12.1	10.5-13.6	115	Breast	248	14.6	13.7	11.8-15.5	66
Colorectal	228	10.6	12.5	10.8-14.2	73	Colorectal	209	12.3	10.1	8.6-11.6	90
Colon	146	6.8	7.8	6.5-9.1	124	Colon	154	9.0	7.3	6.0-8.6	131
Rectum	82	3.8	4.7	3.7-5.8	178	Rectum	55	3.2	2.8	2.0-3.6	283
Pancreas	92	4.3	5.1	4.0-6.2	172	Pancreas	112	6.6	5.1	4.1-6.1	186
Melanoma (skin)	89	4.1	4.9	3.9-6.0	190	Unknown primary	94	5.5	4.0	3.1-4.9	262
Unknown primary	88	4.1	4.5	3.5-5.5	238	Ovary	63	3.7	3.5	2.6-4.4	255
Bladder & urinary tract	86	4.0	4.5	3.5-5.5	233	Lymphoma	63	3.7	2.7	1.9-3.4	435
Stomach	81	3.8	4.4	3.4-5.4	232	Lymphoma NOS	3	0.2	0.1	0 - 0.2	*
Mesothelioma	79	3.7	4.6	3.5-5.6	176	Hodgkin lymphoma	4	0.2	0.3	0 - 0.6	2976
Oesophagus	73	3.4	3.9	3.0-4.8	237	NHL	56	3.3	2.3	1.6-3.0	509
Lymphoma	70	3.2	3.8	2.9-4.8	231	Brain	62	3.6	3.5	2.6-4.5	224
Lymphoma NOS	1	0.0	0.1	0 - 0.2	*	Melanoma (skin)	48	2.8	2.6	1.8-3.4	356
Hodgkin lymphoma	2	0.1	0.1	0 - 0.3	4622	Leukaemia	48	2.8	2.5	1.7-3.3	433
NHL	67	3.1	3.6	2.7-4.6	248	Leukaemia NOS	2	0.1	0.1	0 - 0.2	6593
Leukaemia	65	3.0	3.7	2.7-4.6	255	Lymphoid leukaemia	13	0.8	0.4	0.2-0.7	6401
Leukaemia NOS	2	0.1	0.1	0 - 0.2	6335	Myeloid leukaemia	33	1.9	2.0	1.2-2.7	499
Lymphoid leukaemia	17	0.8	1.0	0.5-1.5	799	Leukaemia, other	0				-
Myeloid leukaemia	46	2.1	2.6	1.8-3.4	397	Bladder & urinary tract	38	2.2	1.6	1.0-2.1	641
Leukaemia, other	0				-	Stomach	36	2.1	1.6	1.0-2.2	647
Liver	59	2.7	3.5	2.5-4.4	252	Myeloma	36	2.1	1.8	1.1-2.4	534
Brain	56	2.6	3.6	2.6-4.5	236	Gallbladder / bile ducts	34	2.0	1.6	1.0-2.2	639
Kidney	54	2.5	2.8	2.1-3.6	386	Uterus	32	1.9	1.7	1.1-2.3	463
Myeloma	45	2.1	2.5	1.8-3.3	317	Cervix	30	1.8	1.8	1.1-2.5	502
Skin (NMSC inc. SCC/BCC)	44	2.0	2.4	1.6-3.1	426	Kidney	30	1.8	1.5	0.9-2.1	586
Gallbladder / bile ducts	37	1.7	2.0	1.4-2.7	384	Oesophagus	29	1.7	1.3	0.8-1.8	786
Pharynx	22	1.0	1.4	0.8-2.0	488	Liver	24	1.4	1.1	0.6-1.6	797
Larynx	22	1.0	1.3	0.8-1.9	656	Myelodysplastic diseases	20	1.2	0.6	0.3-0.9	8264
Myelodysplastic diseases	22	1.0	0.9	0.5-1.3	1688	Skin (NMSC inc. SCC/BCC)	19	1.1	0.6	0.3-1.0	2555
All cancer deaths	2158	100.0	117.1	112-122	8	All cancer deaths	1704	100.0	84.3	80.0-88.7	11