

# Cancer incidence and mortality in Western Australia, 2005

A report of the Western Australian Cancer Registry

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## Summary

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 standardized 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. All statistics are based on the ICDO-3 coding system.

### **New cases of cancer, 2005**

There were 9151 new cases of cancer recorded in Western Australians in 2005, 5163 (56%) occurring in males and 3988 in females. Age-standardized incidence rates were 356 per 100,000 males, and 261 per 100,000 females, both slightly lower than in 2004. The estimated lifetime risk of cancer to age 75 years was 1 in 3 for males, and 1 in 4 for females.

### **Cancer-related deaths**

Among Western Australian residents, there were 3432 deaths due to cancer in 2005, 2004 in males and 1428 in females. All-cancers mortality rates for 2005 were 127 deaths per 100,000 males (slightly higher than in 2004) and 78 per 100,000 females (slightly lower). 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.

## **Summary (cont.)**

### **Common cancers**

The most common cancers in males in 2005 were prostate, lung and colorectal cancers, followed by melanoma of the skin. Lung cancer became relatively more common in 2005 in males. Breast cancer predominated among females, followed by colorectal cancer, melanoma and lung cancer, as in 2004. Small decreases have been seen in the rate of breast cancer in females in each of the last three years.

There were 50 children under the age of 15 years diagnosed with cancer in 2005 (ASR 15 per 100,000 in males, 11 per 100,000 in females). Cancer at this age is a rare disease and annual variation in numbers and types is considerable. Leukaemias predominated, followed by tumours of the central nervous system (CNS) and lymphomas.

Melanoma of the skin was - as in most years since 1982 - the most common cancer in males in the 15-39 years age range, but breast cancer was most common in young females. 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 2005 data, one in 8 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 82 men could be expected to die from prostate cancer before age 75, and one in 64 women to die from breast cancer.

### **Historical trends and projections of incidence rates**

Historical trends in incidence rates have been updated for all cancers combined, with projections to the year 2015. On the basis of recent years, a stable or slightly-increasing all-cancers incidence is projected, for both males and females.

### **Age distribution of cancer cases**

Cancer is most commonly a disease seen in older people, however patterns vary between cancer types, and changes over time may differ for different types of cancer. Age distributions, updated for 2005, are presented for the most common cancer types.

### **Use of alternative data sources**

Following on from previous investigations, Registry staff investigated 754 hospital-data only ("HMDS-only") tumour records for 2005, and confirmed almost half, rejected many as invalid for WA cancer incidence, while others could not be resolved. Results are being used in ongoing examination of the cancer notification process.

# 1 Overview and Methods

## 1.1 This Report

### Overview of this report

This is the latest in this Registry's series of annual all-cancers incidence and mortality reports, and comprises a summary of Registry activities and topical issues, and details of cancer incidence and mortality for 2005. Sections concerning coding and other Registry practices and statistical methods include relevant material for recent years.

The Western Australian Cancer Registry (WACR) is a population-based cancer registry that was established in 1981. Records are based on notification of cancers from pathologists, haematologists and radiation oncologists, and cancer information from death records. The Registry works to collect and disseminate reliable population-based cancer data to assist in the planning of services and in the prevention and treatment of cancer. The **WA Mesothelioma Register** is a separate database maintained within the WACR and reconciled frequently with "mainstream" WACR data. It incorporates specific information for mesothelioma cases, relating to occupational, residential and asbestos exposure history, and the presumed most significant asbestos exposure.

The WACR acts with the delegated authority of the Executive Director of Public Health with respect to the Health (Notification of Cancer) Regulations 1981. Last amended in 1996, these 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 (see Appendix 2E). Further changes are currently being sought in order to maintain the relevance of the Registry's data collection. A Discussion Paper concerning proposed changes can be found on the Registry website at [www.health.wa.gov.au/wacr/](http://www.health.wa.gov.au/wacr/)

## 1.2 General structure; how to find information

The major statistical sections are based on cancers diagnosed, and deaths due to cancer, in 2005. Data for the more common forms of cancer are presented under headings based on incidence, mortality and age, while data for common cancers in selected geographic areas are presented in Appendices 3D and 3E. Special topics in Section 3 may be based on data from other years as well. Detailed data for all types of cancers for 2005 are found in the tables of Appendices 3A and 3B. The layout of those tables follows the coding system summarized in Appendix 2F. Readers seeking detailed information for a particular cancer type which does not appear among the tables of more common cancers, should refer to Appendix 2H.

## 1.3 Interpretation of changes and differences

Western Australia is particularly polarized 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, an awareness is needed that assessing the importance of changes in cancer incidence and mortality is complex and depends on the underlying population sizes and their age structures. As in previous years, caution is required in assessing changes on the basis of single rate comparisons.

The Cancer Registry database is dynamic, and data are continually updated in the light of the most recent available information. Accordingly, numbers in this report for previous years may vary slightly from those in previous publications. Ongoing reconciliation processes result in some Western Australian cases being 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 2004 were quoted at 9244 in our previous report,<sup>1</sup> the total currently recorded for 2004 is 9325, an increase of 0.9%. Corresponding figures are 1.8% for 2003 data re-examined at the time of the 2004 report, and 2.0% for 2002 data at the time of the 2003 report. Benefits of more timely analysis and reporting must be weighed against the apparent stability of the data as time passes.

## 1.4 Statistical methods

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

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

**Age-specific rates (ASPR)** are based on five-year age intervals and are calculated by dividing the numbers of cases by the population of the same sex and age group.

**Age-standardized 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, but not standard deviation (SD). The 95% c.i. is approximately  $(ASR \pm 1.96 * SD)$ .

When a subset of age groups (e.g. 15-39 years) is considered, the term **age-adjusted rate** is used instead of ASR, as standardization has considered only some age groups, for both cases and population.

The **World Standard Population 1960**<sup>2</sup> 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)<sup>3</sup> 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, 2005

### 2.1 All cancers

#### 2.1.1 Incidence

In 2005, there were 9151 new diagnoses of cancer in Western Australia, an apparent decrease of 1.9% over a "current" figure for 2004 (9325 cases). There were 5163 cancers diagnosed in males (56%) and 3988 (44%) in females. Corresponding age-standardized incidence rates were 356 per 100,000 (males) and 261 per 100,000 (females), both slightly lower than rates for 2004.

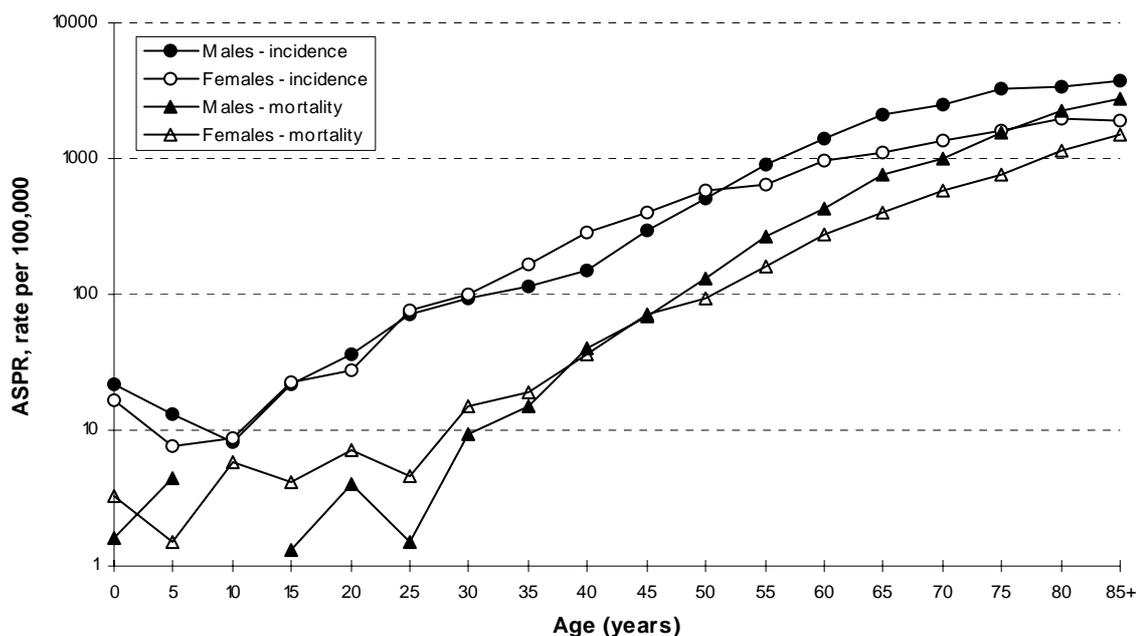
The estimated lifetime risk of cancer to age 75 years was 1 in 3 for males and 1 in 4 for females. The cumulative incidence of cancer - the proportion of persons in whom cancer had been diagnosed by age 75 years - was 41.7% for males, 28.9% for females, both slightly lower than in 2004.

In 2005, rates for both sexes aged 15-34 years were similar, followed by a marked predominance of women between 35 and 54 years, and of males at older ages (Figure 1). Differences in the youngest age groups are inconsistent from year to year; the log-scale graph below shows the peak in the youngest age-groups better than a linear-scale (see *Figure 13*).

Most of the excess cancer risk in females between ages 35 and 50 was due to ovarian and breast cancers, while prostate cancer and lung cancer were responsible for the high male/female rate ratio (approximately 2) at ages over 65 years.

The proportion of all cancers with a microscopic diagnosis was high (94% in males and 93% in females, stable over the last 5 years). Among the most common types, primary liver cancer was the most often diagnosed by non-histological methods (49% in males and 59% in females). Cancers of unknown primary site and pancreatic cancers were also commonly diagnosed by non-microscopic methods.

Figure 1. Age-specific all-cancers incidence and mortality rates, Western Australia, 2005.



In any year, the WA cancer statistics include a number of cases which were initially "hospital data only" records and were confirmed as true cancer cases following attempts to obtain more information. The 2005 data reported here include a higher than usual number of such cases, due to work piloted and described in Cancer incidence and mortality in Western Australia, 2004.<sup>1</sup>

### 2.1.2 Mortality

Among Western Australian residents in 2005, there were 2004 deaths due to cancer in males and 1428 in females (Table 1). Mortality ASRs were 127 deaths per 100,000 males (slightly higher than in 2004) and 78 per 100,000 females (slightly lower than in 2004). The estimated lifetime risk of death due to cancer before age 75 years was 1 in 8 for males and 1 in 12 for females. These rates and risks are statistically similar to those for 2004.

These deaths include 39 cases due to non-melanocytic skin cancers, of which 33 were of the types (squamous and basal cell carcinomas) that are not included in incidence data (27 males, 6 females; 32 SCCs and one BCC).

In 2005, there were 14 cancer-related deaths in persons not normally resident in Western Australia (7 Australian, 5 from overseas); these are not included in mortality statistics in this report.

Other 2005 deaths recorded by the Cancer Registry included:

- Deaths due to benign tumours - 7 (5 of which were meningiomas or other CNS tumours)
- Deaths due to "uncertain malignant potential" lymphohaematopoietic neoplasms - 2
- Deaths due to "uncertain malignant potential" non-lymphohaematopoietic neoplasms - 3
- Deaths due to non-tumour-related causes among persons with a Registry tumour record - 840 males, 638 females (both increased since 2004)
- Deaths of unresolved cause among persons with a tumour record - 34 (15 males, 19 females).

Before the age of 75 years, a total of 13114 person-years of life were lost due to cancer among males and 10360 in females.

There was no significant change in the age-pattern of cancer mortality in 2005. Cancer death rates generally increased for both males and females from age 20 (Figure 1), with low case numbers at earlier ages. All-cancers death rates among males were consistently higher than in females at ages greater than 55 years.

### 2.1.3 Mortality to incidence ratios

Except in situations where incidence and/or mortality are changing rapidly, or notification of cancer is incomplete, the ratio of mortality to incidence for a cancer gives a crude indication of its impact. The 2005 mortality/incidence (M/I) rate ratio for prostate cancer was 0.13 and the ratio for breast cancer in females was 0.17. Lung cancer continues to have a far greater impact, with 2005 M/I ratios of 0.78 in males and 0.81 in females. All-cancers mortality/incidence ratios for 2005 were higher for males than for females (0.36 and 0.30). All these M/I ratios have been relatively stable over recent years.

## 2.2 Common cancers

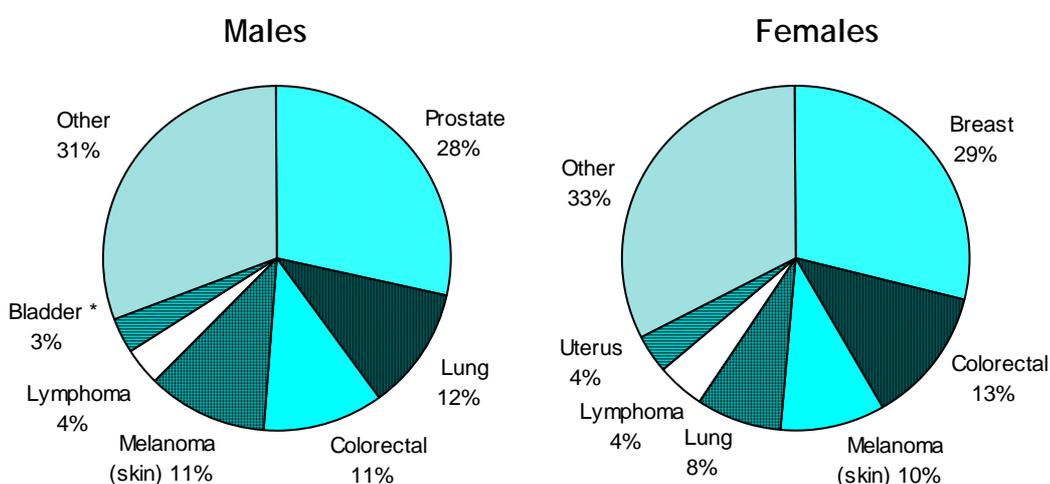
### 2.2.1 Incidence

In females, breast cancer was the most common incident cancer (1154 cases, 29% of all cancers in females; ASR 81 per 100,000). This was followed by colorectal cancer (13%), melanoma of the skin (10%) and lung cancer (8%). There were an additional 265 newly-diagnosed cases of *in situ* breast carcinoma reported (86% ductal (DCIS), 11% lobular (LCIS)), more than in any previous year. The female breast cancer incidence ASR has fallen by a small amount each year since 2002, from 87.4 successively to 84.6, 82.8 and 81.2 for 2005 (see Table 7, Figure 34). This is not, in isolation, statistically significant, but is a reversal of an overall, non-significant upward trend of 0.3% per year over the period 1996-2005, and will be monitored. Increased screening activity, detecting cancers at a pre-invasive stage, may be responsible.

The most common cancers in males were prostate cancer (1471 cases; 29%), lung cancer (595 cases, 12%), colorectal cancer (577 cases, 11%), and melanoma (566 cases; 11%) (Table 1; Figure 2). Of these, only lung cancer was markedly more common (ASR increased by 10%) than in 2004, when it ranked only 4<sup>th</sup> in incidence in males. For all the major cancers affecting both males and females, males had a higher incidence than females.

Lymphomas, collectively the next most common cancer in both sexes, accounted for 4% of cancers in males and in females, with ASRs of 15 and 12 per 100,000. Cancers of unknown primary site were recorded in 155 males (3%, ASR 10) and 122 females (3%, ASR 6).

Figure 2. Cancer incidence, Western Australia, 2005: common cancers



Other common specific cancer types diagnosed included:

Leukaemias - 125 cases in men (ASR 10.2), 84 in women (ASR 5.7)

Bladder - 173 cases in men (ASR 10.6), 71 in women (ASR 3.6)

Kidney - 143 cases in men (ASR 9.8), 74 in women (ASR 5.2)

Pancreas - 113 cases in men (ASR 7.6), 90 in women (ASR 5.0)

Stomach - 111 cases in men (ASR 7.2), 48 in women (ASR 2.7)

*\*(note that the "Bladder" grouping now includes renal pelvis and ureter tumours.)*

Other common cancer types in women were cancers of the uterus (144 cases, ASR 9.7), ovary (108 cases, ASR 7.4), thyroid (103 cases, ASR 8.3) and cervix (80 cases, ASR 6.0).

## 2.2.2 Mortality

The most common causes of cancer-related death in males were lung cancer (24%), colorectal cancer (12%) and prostate cancer (12%) (Table 1; Figure 3). Lung (18%), breast (16%) and colorectal cancer deaths (13%) were the most common in females.

In 2000, lung cancer first outranked breast cancer as a cause of death among women, however this appeared unusual at that time. While early detection may contribute to decreasing mortality from breast cancer, lung cancer is a significant cause of death in Western Australian women, returning to first position among causes of cancer death in women in 2004, with 27 more deaths due to lung cancer than breast cancer. This trend has continued, with 39 more lung cancer deaths than breast cancer deaths in 2005. However, this pattern appears to reflect improved breast cancer incidence and mortality, rather than any dramatic change in female lung cancer rates.

Other major causes of cancer-related mortality included tumours of unknown primary site and pancreas in both sexes, melanoma, lymphomas, and stomach and oesophageal cancers in males; and ovarian cancer, malignant brain tumours and lymphomas in females. With minor changes, these results for 2005 are consistent with the usual common causes of cancer-related death in recent years.

Figure 3. Cancer mortality, Western Australia, 2005: common cancers

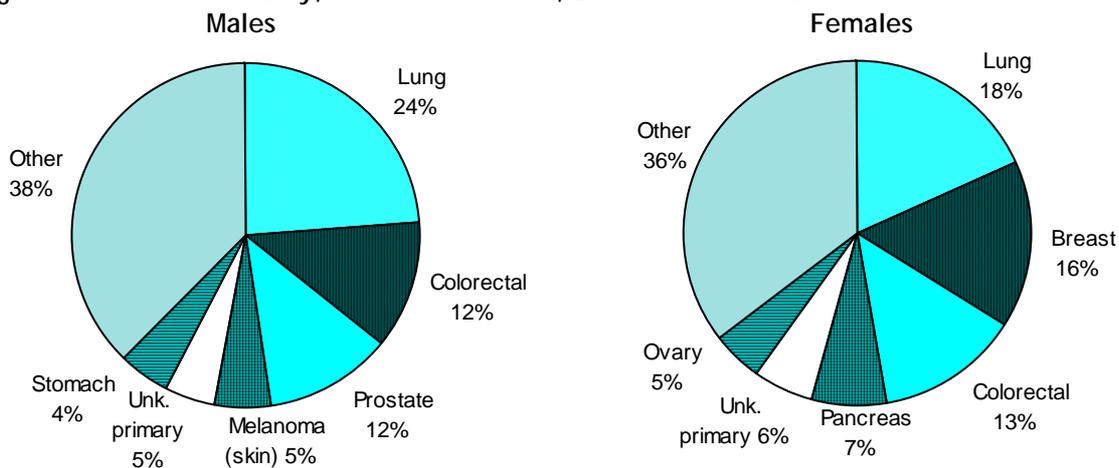


Table 1. Cancer incidence and mortality, Western Australia, 2005: leading types in males and females

Incidence						Mortality					
Males			Females			Males			Females		
	Cases	%	ASR	95%c.i.	Risk		Cases	%	ASR	95%c.i.	Risk
Prostate	1471	28.5	100.5	95.2-106	8	Breast	1154	28.9	81.2	76.4-86.0	11
Lung	595	11.5	37.9	34.8-41.1	23	Colorectal	507	12.7	29.5	26.7-32.3	29
Colorectal	577	11.2	39.1	35.8-42.4	21	Colon	355	8.9	20.3	18.0-22.6	42
Colon	360	7.0	24.2	21.6-26.7	34	Rectum	148	3.7	8.9	7.3-10.4	93
Rectum	213	4.1	14.6	12.6-16.7	55	Melanoma (skin)	392	9.8	27.6	24.7-30.5	35
Melanoma (skin)	566	11.0	41.0	37.5-44.5	22	Lung	312	7.8	18.4	16.2-20.6	45
Lymphoma	193	3.7	14.6	12.5-16.7	63	Lymphoma	171	4.3	11.6	9.7-13.5	83
Lymphoma NOS	2	0.0	0.1	0 - 0.3	*	Lymphoma NOS	6	0.2	0.3	0.0-0.6	3167
Hodgkin lymphoma	19	0.4	1.8	1.0-2.7	692	Hodgkin lymphoma	19	0.5	2.0	1.1-2.9	728
NHL	172	3.3	12.7	10.7-14.6	69	NHL	146	3.7	9.3	7.7-10.9	96
Bladder & urinary tract	173	3.4	10.6	9.0-12.3	98	Uterus	144	3.6	9.7	8.0-11.4	84
Unknown primary	155	3.0	10.2	8.5-11.8	96	Unknown primary	122	3.1	6.3	5.0-7.5	148
Kidney	143	2.8	9.8	8.2-11.5	87	Ovary	108	2.7	7.4	5.9-8.8	121
Leukaemia	125	2.4	10.2	8.2-12.2	110	Thyroid gland	103	2.6	8.3	6.7-10.0	124
Leukaemia NOS	4	0.1	0.4	0 - 0.7	3099	Pancreas	90	2.3	5.0	3.8-6.1	169
Lymphoid leukaemia	66	1.3	5.9	4.3-7.5	194	Leukaemia	84	2.1	5.7	4.2-7.1	193
Myeloid leukaemia	55	1.1	4.0	2.8-5.1	275	Leukaemia NOS	3	0.1	0.1	0 - 0.3	5896
Leukaemia, other	0					Lymphoid leukaemia	38	1.0	2.2	1.4-3.0	469
Pancreas	113	2.2	7.6	6.2-9.0	108	Myeloid leukaemia	43	1.1	3.4	2.2-4.5	347
Stomach	111	2.1	7.2	5.8-8.6	123	Leukaemia, other	0				
Lip, gum & mouth	98	1.9	7.0	5.6-8.5	140	Cervix	80	2.0	6.0	4.6-7.3	171
Oesophagus	78	1.5	5.5	4.3-6.7	148	Kidney	74	1.9	5.2	3.9-6.5	171
Mesothelioma	75	1.5	4.9	3.8-6.1	166	Bladder & urinary tract	71	1.8	3.6	2.7-4.6	219
Brain	71	1.4	5.8	4.4-7.2	146	Myeloma	58	1.5	3.5	2.5-4.5	274
Testis	68	1.3	6.2	4.7-7.7	219	Myelodysplastic diseases	54	1.4	2.9	2.0-3.8	454
Liver	65	1.3	4.4	3.3-5.5	182	Brain	52	1.3	3.7	2.6-4.8	277
Myelodysplastic diseases	59	1.1	3.4	2.5-4.4	320	Stomach	48	1.2	2.7	1.9-3.6	342
Myeloma	54	1.0	3.3	2.4-4.3	298	Lip, gum & mouth	40	1.0	2.6	1.7-3.4	320
Skin (NMSC exc. SCC/BCC)	39	0.8	2.4	1.6-3.1	497	Liver	29	0.7	1.8	1.1-2.6	525
Pharynx	38	0.7	2.8	1.9-3.7	319	Myeloprolif. d/o (chronic)	28	0.7	1.4	0.8-2.0	634
All cancers	5163	100.0	356.1	346-366	3	All cancers	3988	100.0	260.9	252-270	4

Notes: - no data; \* no data <75 years or risk less than 1 in 10,000

(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

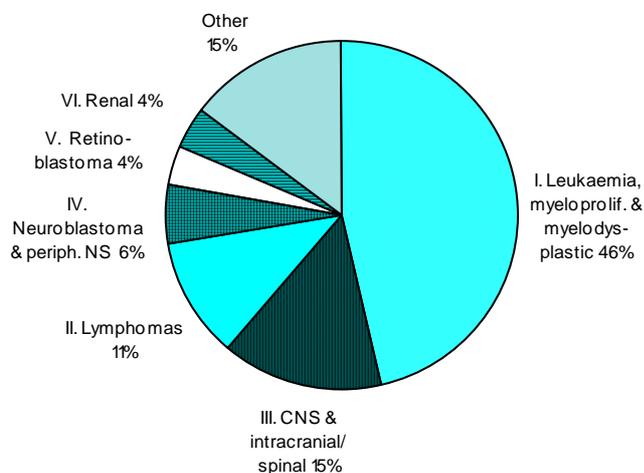
In children under the age of 15 years, there were 50 cases of cancer diagnosed in 2004, 29 males and 21 females (Appendix 3A). The corresponding ASRs were 15.2 per 100,000 males, and 11.4 per 100,000 females, both lower than in 2004. The risk of a child developing cancer before the age of 15 years was 1 in 460 for boys and 1 in 610 for girls.

The estimated 0-14 years population in Western Australia in 2005 was 399,274 (204,632 males and 194,642 females).

Diagnoses are routinely coded and reported using ICD-O 3rd edition,<sup>4</sup> but are also tabulated using the WHO-sponsored International Classification of Childhood Cancer (Version 3), into 12 major diagnostic groups based primarily on tumour morphology; these are shown in Appendix 3C. This classification includes additional tumour types that do not come under the usual definition of "cancers" (4 cases).

The most common tumours diagnosed in children in 2005 are shown in Figure 4. Leukaemias, myeloproliferative and myelodysplastic neoplasms accounted for 46% of cases. Primary central nervous system tumours were the second most common group with 8 cases. The most common individual tumour type was acute lymphoblastic leukaemia, 16 children with an unusual male:female ratio of 15:1. There were 2 skin cancers (a melanoma and a dermatofibrosarcoma) reported in Western Australian children in 2005.

Figure 4. Cancer in children under 15 years of age, Western Australia, 2005: most common types (ICCC Version 3 - 54 cases).



There were 11 cancer-related deaths (4 males, 7 females) in children in 2005. Age-adjusted death rates were 2.0 per 100,000 in males (lower than in 2004) and 3.5 per 100,000 in females (higher). The estimated risk of death due to cancer before the age of 15 was 1 in 3361 for males, and 1 in 1882 for females.

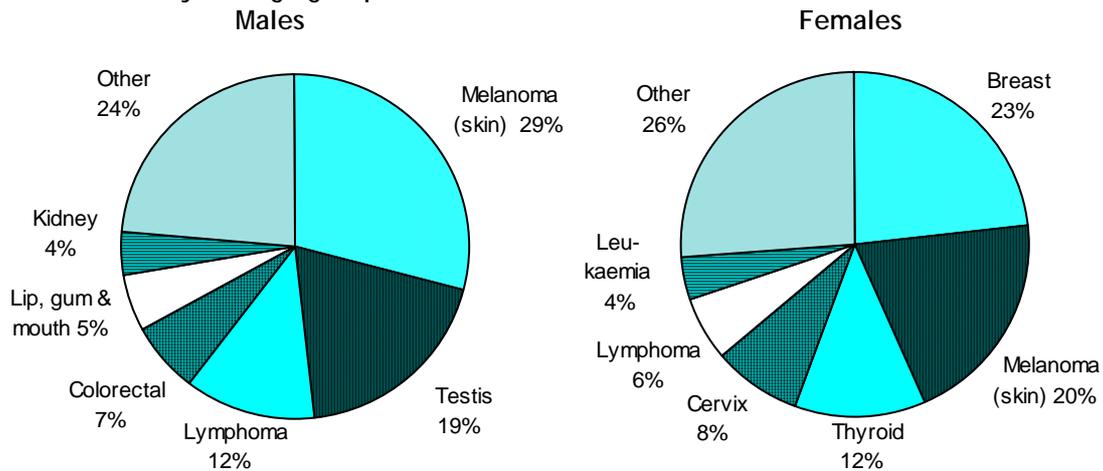
### Time trends in childhood cancer incidence

Over the period 1996 to 2005, the all-cancers incidence rate did not change significantly for males or for females under 15 years of age. In males, the average annual incidence rate ratio was 1.034 ( $p = 0.099$ ). In females the annual rate ratio was 0.984 ( $p > 0.5$ ).

### 2.3.2 Cancer in the 15-39 years age range

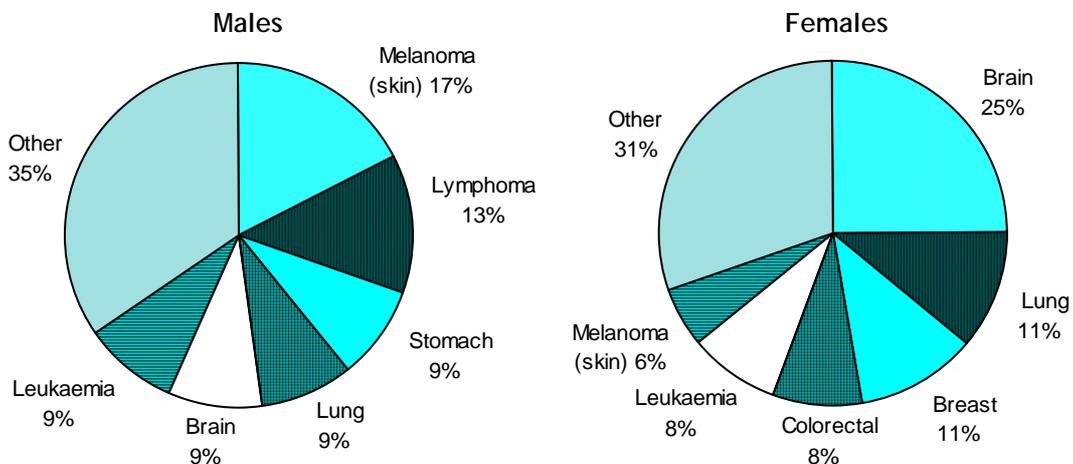
**Incidence:** In the 15 to 39 years age range, there were 530 cancer diagnoses in 2005 (246 males, ASR 62, 284 females, ASR 72) (Table 2). Melanoma was most common in males (72 cases, ASR 17.3) and breast cancer was most common in females (66 cases, ASR 15.2). Second-ranked cancers were testicular cancer in males (46 cases, 19% of all cancers) and melanoma in females (57 cases, 20% of all cancers) (Figure 5). Thyroid and cervical cancers were the next most common in females, with lymphoma and colorectal cancer following next in males. Colorectal cancer was relatively more common in males in this age range, than in 2004.

Figure 5. Cancer incidence, Western Australia, 2005: common cancers in the 15 to 39 years age group



**Mortality:** Among persons aged 15 to 39 years, there were 59 cancer-related deaths in 2005, 23 in males and 36 in females (Table 3). Among males, melanoma (4 deaths) and lymphoma (3 deaths) were the leading causes of cancer-related death in this age group (Figure 6). In females, malignant brain tumours predominated (9 deaths), followed by lung and breast cancers (4 deaths each). As cancer-related death in this age group is relatively uncommon, these 'rankings' remain very variable from year to year.

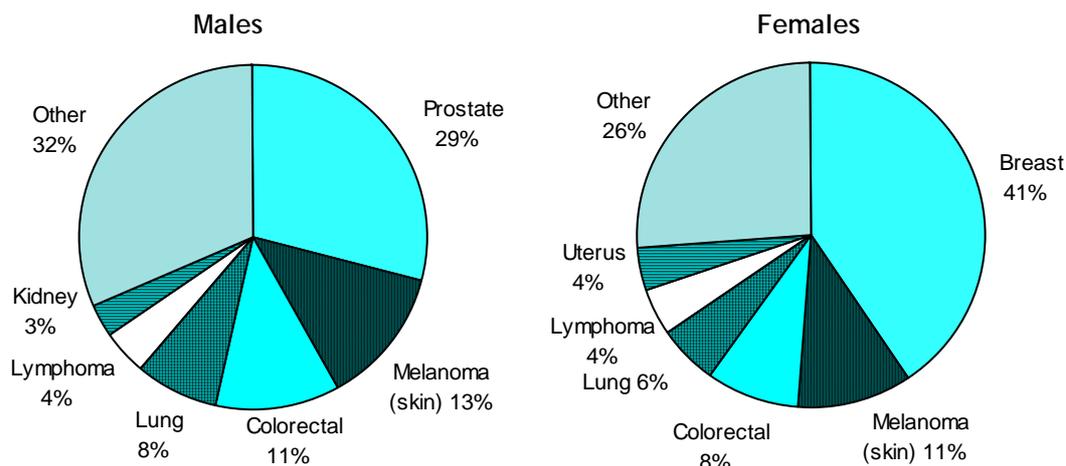
Figure 6. Cancer mortality, Western Australia, 2005: common cancers in the 15 to 39 years age group



### 2.3.3 Cancer in the 40-64 years age range

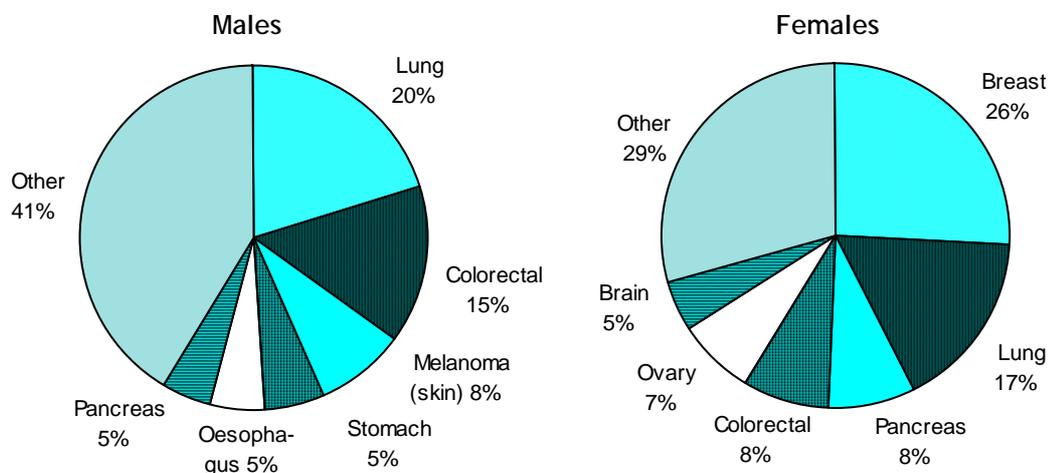
**Incidence:** In the age range 40 to 64 years, breast cancer continued to dominate reported incident cancers (704 cases, 40% of all female cancers in this age group, little-changed in the last 4 years) (Table 2; Figure 7). The risk of cancer occurring in this age range was 1 in 7 for both males and females. More cancers occurred in males (52%) than in females, with prostate cancer (29%), melanoma (13%) and colorectal cancer (11%) most common. In females, melanoma (11%) and colorectal cancer (8%) ranked highest after breast cancer.

Figure 7. Cancer incidence, Western Australia, 2005: common cancers in the 40 to 64 years age group



**Mortality:** In 2005, in the age range 40 to 64 years, lung cancer was, as in recent years, the most common cause of cancer-related death in males (108 deaths, age-adjusted rate of 33 per 100,000 males; little change since 2001) (Table 3; Figure 8). Other leading causes of death in males were colorectal cancer (78 deaths), melanoma (45 deaths) and stomach cancer (29 deaths). Major causes among females were breast cancer (95 deaths), lung cancer (61 deaths), pancreatic cancer (30 deaths) and colorectal cancer (29 deaths). Cancers of unknown primary site remained less common among causes of death in this age range, than in recent years to 2003.

Figure 8. Cancer mortality, Western Australia, 2005: common cancers in the 40 to 64 years age group

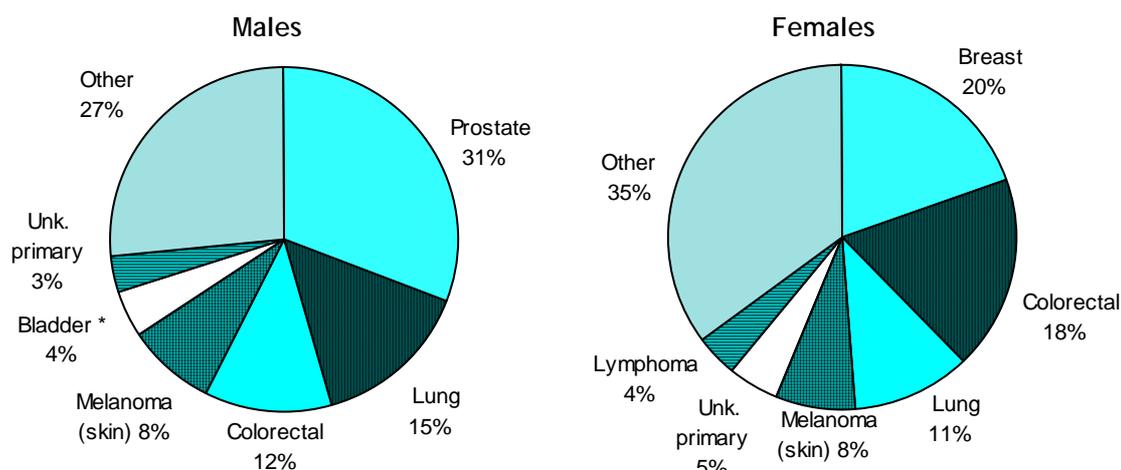


### 2.3.4 Cancer in persons aged 65 and over

**Incidence:** Over the age of 65 years, prostate cancer (915 cases) outnumbered any other specific cancer type in either sex (Table 2; Figure 9) and accounted for 31% of diagnoses in males. Rates appear to be rising in recent years, after major changes and unstable rates in the 1990s. Among females, breast cancer predominated (384 cases, 20%).

Other common cancer types in this age range were colorectal cancer (12% in males, 18% in females) and lung cancer (15%, 11%). These proportions have been relatively stable over recent years. Melanoma of the skin was the fourth most common cancer type in males and in females (8% in both).

Figure 9. Cancer incidence, Western Australia, 2005: common cancers in the 65 years & over age group



**Mortality:** Over the age of 65 years, lung cancer was, as in recent years, the most common cause of cancer-related death in both sexes. Among males, lung cancer caused 368 deaths, at an age-adjusted rate 300 per 100,000; 25% of cancer-related deaths. Among females, it was responsible for 197 deaths at 138 per 100,000, 19% of all cancer deaths. Colorectal cancer ranked third in males (160 deaths, 11%) and second in females (156 deaths, 15%). Deaths due to prostate cancer ranked second in males (219 deaths, 15%). Breast cancer was the third most common cause of cancer-related death in females (124 deaths, 12%). Cancers of unknown primary site were also a major cause of death in this age range (143 deaths) (Figure 10).

Figure 10. Cancer mortality, Western Australia, 2005: common cancers in the 65 years & over age group

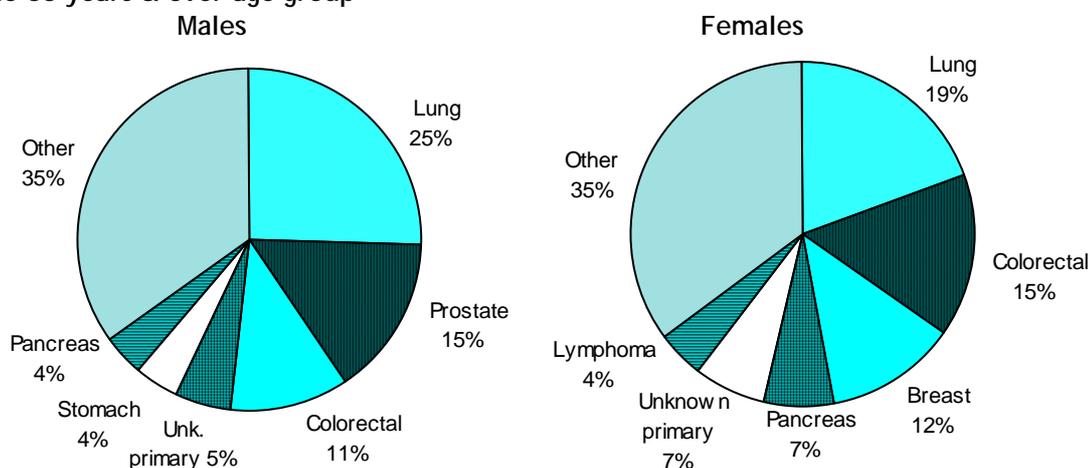


Table 2. Cancer incidence, Western Australia, 2005: leading types by sex and age group (ASR: age-adjusted rate)

15 to 39 years											
Males						Females					
	Cases	%	ASR	95%c.i.	Risk		Cases	%	ASR	95%c.i.	Risk
Melanoma (skin)	72	29.3	17.3	13.3-21.4	205	Breast	66	23.2	15.2	11.5-18.9	222
Testis	46	18.7	12.2	8.6-15.7	315	Melanoma (skin)	57	20.1	14.9	10.9-18.8	251
Lymphoma	30	12.2	7.9	5.0-10.8	489	Thyroid gland	35	12.3	8.9	5.9-11.9	411
Lymphoma NOS	1	0.4	0.2	0 - 0.6	*	Cervix	23	8.1	5.6	3.3-7.9	628
Hodgkin lymphoma	11	4.5	3.1	1.3-5.0	1309	Lymphoma	17	6.0	4.9	2.5-7.3	817
NHL	18	7.3	4.6	2.4-6.7	823	Lymphoma NOS	0				
Colorectal	17	6.9	4.1	2.1-6.1	866	Hodgkin lymphoma	9	3.2	2.8	1.0-4.7	1514
Colon	10	4.1	2.5	0.9-4.1	1462	NHL	8	2.8	2.1	0.6-3.5	1773
Rectum	7	2.8	1.6	0.4-2.8	2125	Leukaemia	11	3.9	2.9	1.2-4.7	1293
Lip, gum & mouth	13	5.3	3.0	1.4-4.7	1130	Leukaemia NOS	0				
Kidney	10	4.1	2.3	0.9-3.7	1476	Lymphoid leukaemia	2	0.7	0.6	0 - 1.5	6786
Thyroid gland	10	4.1	2.7	1.0-4.4	1436	Myeloid leukaemia	9	3.2	2.3	0.8-3.8	1597
Leukaemia	9	3.7	2.4	0.8-3.9	1638	Leukaemia, other	0				
Leukaemia NOS	1	0.4	0.2	0 - 0.6	*	Colorectal	10	3.5	2.7	1.0-4.5	1412
Lymphoid leukaemia	3	1.2	0.9	0 - 1.8	4822	Colon	6	2.1	1.7	0.3-3.2	2331
Myeloid leukaemia	5	2.0	1.3	0.1-2.4	2976	Rectum	4	1.4	1.0	0.0-2.0	3578
Leukaemia, other	0					Uterus	7	2.5	1.6	0.4-2.9	2075
All cancers	246	100.0	62.1	54.2-69.9	60	All cancers	284	100.0	71.7	63.2-80.2	51

40 to 64 years											
Males						Females					
	Cases	%	ASR	95%c.i.	Risk		Cases	%	ASR	95%c.i.	Risk
Prostate	556	29.1	168.1	154-182	21	Breast	704	40.5	217.8	202-234	18
Melanoma (skin)	247	12.9	75.7	66.2-85.2	50	Melanoma (skin)	186	10.7	57.2	48.9-65.4	68
Colorectal	216	11.3	65.2	56.4-74.0	54	Colorectal	146	8.4	46.7	39.1-54.3	76
Colon	123	6.4	37.2	30.6-43.9	94	Colon	97	5.6	31.0	24.8-37.3	114
Rectum	90	4.7	27.0	21.4-32.6	127	Rectum	47	2.7	15.0	10.7-19.3	241
Lung	149	7.8	46.3	38.8-53.8	75	Lung	98	5.6	31.3	25.0-37.5	111
Lymphoma	79	4.1	24.0	18.6-29.3	155	Lymphoma	75	4.3	23.1	17.8-28.3	165
Lymphoma NOS	0					Lymphoma NOS	2	0.1	0.6	0 - 1.4	6842
Hodgkin lymphoma	5	0.3	1.6	0.2-3.0	2339	Hodgkin lymphoma	6	0.3	1.9	0.4-3.5	2029
NHL	74	3.9	22.4	17.3-27.5	166	NHL	67	3.9	20.5	15.6-25.5	184
Kidney	58	3.0	17.4	12.9-21.9	205	Uterus	72	4.1	22.4	17.2-27.7	155
Lip, gum & mouth	56	2.9	16.9	12.5-21.4	224	Ovary	58	3.3	17.7	13.2-22.3	217
Unknown primary	51	2.7	15.6	11.3-19.9	228	Thyroid gland	49	2.8	15.1	10.9-19.3	277
Oesophagus	44	2.3	13.4	9.4-17.4	269	Cervix	36	2.1	11.2	7.5-14.8	384
Leukaemia	44	2.3	13.2	9.3-17.2	267	Kidney	36	2.1	11.6	7.8-15.4	309
						Unknown primary	29	1.7	8.9	5.6-12.1	409
						Myeloma	23	1.3	7.5	4.4-10.6	460
All cancers	1911	100.0	581.8	556-608	7	All cancers	1737	100.0	540.3	515-566	7

65 years and over											
Males						Females					
	Cases	%	ASR	95%c.i.	Risk		Cases	%	ASR	95%c.i.	Risk
Prostate	915	30.7	834.8	779-891	13	Breast	384	19.7	302.0	269-335	34
Lung	442	14.8	371.3	335-407	33	Colorectal	350	18.0	237.8	210-265	48
Colorectal	344	11.6	303.8	271-337	35	Colon	251	12.9	168.0	145-191	69
Colon	227	7.6	198.9	172-226	54	Rectum	97	5.0	67.6	52.9-82.3	158
Rectum	116	3.9	104.4	84.7-124	100	Lung	210	10.8	146.2	125-168	77
Melanoma (skin)	247	8.3	223.5	195-252	48	Melanoma (skin)	148	7.6	109.7	90.3-129	97
Bladder & urinary tract	132	4.4	106.9	87.9-126	148	Unknown primary	91	4.7	55.5	42.8-68.3	239
Unknown primary	101	3.4	84.1	67.0-101	170	Lymphoma	76	3.9	51.8	38.9-64.6	215
Lymphoma	81	2.7	74.4	57.7-91.2	136	Lymphoma NOS	4	0.2	2.5	0 - 5.0	5896
Lymphoma NOS	1	0.0	0.7	0 - 1.9	*	Hodgkin lymphoma	1	0.1	0.4	0 - 1.1	*
Hodgkin lymphoma	2	0.1	1.7	0 - 4.1	5485	NHL	71	3.6	48.9	36.4-61.5	223
NHL	78	2.6	72.1	55.5-88.7	140	Pancreas	68	3.5	46.3	34.2-58.5	249
Kidney	75	2.5	66.5	50.9-82.1	167	Uterus	65	3.3	49.6	36.4-62.7	199
Stomach	71	2.4	58.6	44.4-72.9	211	Bladder & urinary tract	60	3.1	38.5	27.7-49.3	283
Pancreas	71	2.4	63.5	48.1-78.8	174	Leukaemia	49	2.5	31.6	21.7-41.5	413
Mesothelioma	57	1.9	50.1	36.5-63.7	231						
Leukaemia	54	1.8	44.8	32.3-57.4	292						
All cancers	2977	100.0	2614.0	2518-2710	5	All cancers	1946	100.0	1367.6	1301-1434	9

Notes: - no data; \* no data <75 years or risk less than 1 in 10,000

**Table 3. Cancer mortality, Western Australia, 2005: 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
Melanoma (skin)	4	17.4	1.0	0.0-1.9	3634	Brain	9	25.0	2.3	0.8-3.8	1597
Lymphoma	3	13.0	0.7	0 - 1.6	4955	Lung	4	11.1	1.0	0.0-1.9	3636
Lymphoma NOS	0				-	Breast	4	11.1	0.9	0.0-1.7	3689
Hodgkin lymphoma	0				-	Colorectal	3	8.3	0.8	0 - 1.7	4718
NHL	3	13.0	0.7	0 - 1.6	4955	Colon	1	2.8	0.2	0 - 0.7	*
Stomach	2	8.7	0.4	0 - 1.0	7441	Rectum	2	5.6	0.5	0 - 1.3	6973
Lung	2	8.7	0.4	0 - 1.0	7456	Leukaemia	3	8.3	1.0	0 - 2.1	4584
Brain	2	8.7	0.4	0 - 1.0	7441	Leukaemia NOS	0				-
Leukaemia	2	8.7	0.4	0 - 1.0	7441	Lymphoid leukaemia	1	2.8	0.3	0 - 1.0	*
Leukaemia NOS	1	4.3	0.2	0 - 0.6	*	Myeloid leukaemia	2	5.6	0.7	0 - 1.6	7030
Lymphoid leukaemia	1	4.3	0.2	0 - 0.6	*	Leukaemia, other	0				-
Myeloid leukaemia	0				-	Melanoma (skin)	2	5.6	0.4	0 - 1.1	7349
Leukaemia, other	0				-	Cervix	2	5.6	0.4	0 - 1.1	7292
Tongue	1	4.3	0.3	0 - 0.9	*	Ovary	2	5.6	0.4	0 - 1.0	7407
Pharynx	1	4.3	0.2	0 - 0.6	*	Tongue	1	2.8	0.3	0 - 0.9	*
Nasopharynx	1	4.3	0.2	0 - 0.6	*	Stomach	1	2.8	0.2	0 - 0.7	*
Pleura	1	4.3	0.3	0 - 0.9	*	Liver	1	2.8	0.2	0 - 0.6	*
<b>All cancers</b>	<b>23</b>	<b>100.0</b>	<b>5.4</b>	<b>3.2-7.7</b>	<b>645</b>	<b>All cancers</b>	<b>36</b>	<b>100.0</b>	<b>9.1</b>	<b>6.1-12.1</b>	<b>401</b>

40 to 64 years											
Males						Females					
	Deaths	%	ASR	95%c.i.	Risk		Deaths	%	ASR	95%c.i.	Risk
Lung	108	20.3	33.3	27.0-39.7	101	Breast	95	25.9	29.7	23.7-35.7	125
Colorectal	78	14.6	24.0	18.6-29.4	144	Lung	61	16.6	19.5	14.5-24.4	181
Colon	41	7.7	12.5	8.6-16.3	276	Pancreas	30	8.2	9.7	6.2-13.2	344
Rectum	37	6.9	11.6	7.8-15.3	301	Colorectal	29	7.9	9.1	5.8-12.5	402
Melanoma (skin)	45	8.4	13.4	9.4-17.3	278	Colon	21	5.7	6.6	3.7-9.4	544
Stomach	29	5.4	8.7	5.5-11.8	411	Rectum	8	2.2	2.5	0.8-4.3	1534
Oesophagus	27	5.1	8.3	5.2-11.5	449	Ovary	27	7.4	8.1	5.0-11.1	433
Pancreas	26	4.9	7.9	4.8-10.9	467	Brain	17	4.6	5.3	2.8-7.8	660
Brain	25	4.7	7.6	4.6-10.6	495	Unknown primary	12	3.3	3.7	1.6-5.8	976
Unknown primary	25	4.7	7.6	4.6-10.6	453	Melanoma (skin)	11	3.0	3.4	1.4-5.4	1079
Lymphoma	20	3.8	6.2	3.5-9.0	575	Cervix	10	2.7	3.2	1.2-5.1	1274
Lymphoma NOS	0				-	Lymphoma	9	2.5	2.8	0.9-4.6	1343
Hodgkin lymphoma	1	0.2	0.3	0 - 1.0	9238	Lymphoma NOS	0				-
NHL	19	3.6	5.9	3.2-8.5	613	Hodgkin lymphoma	0				-
Liver	16	3.0	5.0	2.5-7.4	699	NHL	9	2.5	2.8	0.9-4.6	1343
Mesothelioma	16	3.0	4.9	2.5-7.4	696	Leukaemia	8	2.2	2.6	0.8-4.4	1442
Prostate	15	2.8	4.8	2.4-7.3	682						
<b>All cancers</b>	<b>533</b>	<b>100.0</b>	<b>162.4</b>	<b>149-176</b>	<b>22</b>	<b>All cancers</b>	<b>367</b>	<b>100.0</b>	<b>115.4</b>	<b>103-127</b>	<b>32</b>

65 years and over											
Males						Females					
	Deaths	%	ASR	95%c.i.	Risk		Deaths	%	ASR	95%c.i.	Risk
Lung	368	25.5	299.8	268-332	45	Lung	197	19.4	137.6	117-159	83
Prostate	219	15.2	174.9	151-199	93	Colorectal	156	15.3	84.8	70.0-99.6	206
Colorectal	160	11.1	134.1	112-156	92	Colon	116	11.4	61.1	48.8-73.4	338
Colon	93	6.4	76.9	60.5-93.3	169	Rectum	40	3.9	23.7	15.5-31.9	525
Rectum	67	4.6	57.2	42.9-71.5	201	Breast	124	12.2	84.1	67.6-101	133
Unknown primary	75	5.2	62.3	47.5-77.0	217	Pancreas	69	6.8	47.1	34.8-59.4	230
Stomach	59	4.1	48.4	35.5-61.3	274	Unknown primary	68	6.7	38.2	28.1-48.4	426
Pancreas	59	4.1	53.0	39.0-67.1	215	Lymphoma	45	4.4	27.4	18.4-36.4	506
Melanoma (skin)	56	3.9	47.1	34.3-60.0	322	Lymphoma NOS	3	0.3	1.9	0 - 4.2	5896
Bladder & urinary tract	51	3.5	40.1	28.7-51.5	430	Hodgkin lymphoma	2	0.2	0.7	0 - 1.7	*
Mesothelioma	44	3.0	37.1	25.6-48.6	371	NHL	40	3.9	24.7	16.1-33.4	553
Oesophagus	41	2.8	35.9	24.5-47.2	327	Ovary	39	3.8	23.8	15.6-32.0	566
Lymphoma	39	2.7	31.4	21.1-41.7	456	Bladder & urinary tract	31	3.0	16.7	10.2-23.2	1049
Lymphoma NOS	1	0.1	0.5	0 - 1.5	*	Stomach	26	2.6	13.6	7.8-19.4	1629
Hodgkin lymphoma	1	0.1	0.7	0 - 1.9	*	Leukaemia	25	2.5	16.0	8.9-23.0	716
NHL	37	2.6	30.2	20.0-40.4	456						
Leukaemia	34	2.4	27.1	17.5-36.7	607						
<b>All cancers</b>	<b>1444</b>	<b>100.0</b>	<b>1195.6</b>	<b>1132-1260</b>	<b>12</b>	<b>All cancers</b>	<b>1018</b>	<b>100.0</b>	<b>640.8</b>	<b>597-684</b>	<b>21</b>

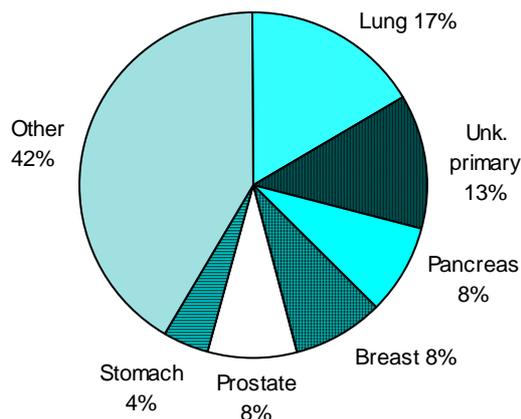
Notes: - no data; \* no data <75 years or risk less than 1 in 10,000

### 3. Cancer in Western Australia: special topics

#### 3.1 Death Certificate Only cancers

"Death certificate only" (DCO) cancer records are those based solely on a death certificate (or electronic mortality record). Having a low proportion of DCO cases is widely regarded as an important index of data quality in a Cancer Registry. In Western Australia, there were 24 DCO cancers recorded for 2005, representing only 0.26% of all cancers (low, but increased from 0.20% since 2004) (Figure 11).

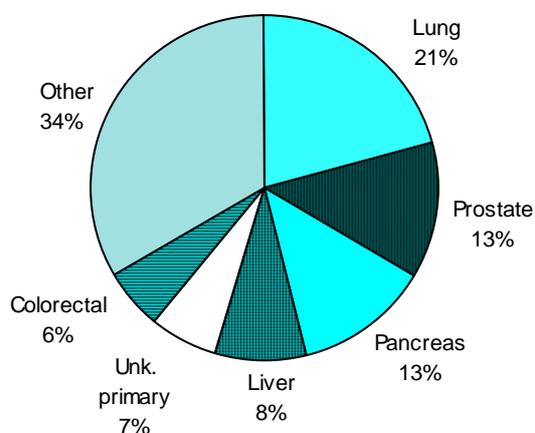
Figure 11. Death Certificate Only (DCO) cancers, 2005: common types (24 cases)



The Registry continues to use computerized hospital discharge data to reduce letter-based enquiries and casenote review, if the data are consistent. There were 197 such "DC and HMDS" cases (0.9%) recorded for 2005, double the number for 2004, and slightly more than for 2003, with the date of diagnosis being taken from the hospital discharge date. The most common types were cancers of the lung, prostate and pancreatic cancers (Figure 12).

As the discharge data lack a true diagnosis date or address at diagnosis, and basis of diagnosis, these data are treated as being less reliable than those sourced from clinical notes and pathology reports. However, the process appears cost-effective in improving timeliness. As noted in our recent reports, an audit was needed - and has been conducted during 2005 (see Section 3.2).

Figure 12. "DC & HMDS" cancers, 2005: common types (197 cases)



## 3.2 Hospital-data-only (HMDS-only) tumour records

Using a hospital discharge date as a proxy for a diagnosis date is unsatisfactory as there are many reasons why it may be wrong. A considerable degree of unreliability of inpatient statistical coding for cancers, noted previously in this registry's data quality investigations,<sup>1</sup> indicates that such hospital-data-only cancer records - especially those un-confirmed by a death record - should be investigated wherever possible.

Such an investigation was carried out during 2006, in which 754 "HMDS-only" records with a hospital discharge date in 2005 were investigated. Letters were written about 480 cases (426 initially directed to individual doctors and 54 to hospital administrators). In total, 706 letters were sent, including reminders, about these 480 cases.

Access to hospital inpatient files was requested from Perth (Public) Teaching Hospitals for a further 274 cases. Bladder and urinary tract cancers were excluded due to previous findings that the majority could not be confirmed as invasive malignancies.

Table 4. Outcomes of enquiries regarding "HMDS-only" cancer records for 2005, by enquiry method.

Outcome of enquiries (after 4 months)	File		Letter		All	
	Cases	%	Cases	%	Cases	%
<b>Group A. Result obtained: Case included in WA incidence data</b>						
Cancer correct, missed pathology report	109	39.8	145	30.2	254	33.7
Cancer correct, imaging diagnosis	16	5.8	20	4.2	36	4.8
Cancer correct, clinical diagnosis	15	5.5	13	2.7	28	3.7
Cancer correct, other non-pathological diagnosis	7	2.6	13	2.7	20	2.7
Cancer confirmed but basis of diagnosis not stated	4	1.5	6	1.3	10	1.3
<b>All</b>	<b>151</b>	<b>55.1</b>	<b>197</b>	<b>41.0</b>	<b>348</b>	<b>46.2</b>
<b>Group B. Result obtained: Case not included in WA incidence data</b>						
No tumour at all	18	6.6	45	9.4	63	8.4
Incorrect coding, not cancer	5	1.8	26	5.4	31	4.1
Miscoded, same tumour as one already on Registry	26	9.5	23	4.8	49	6.5
Cancer correct, diagnosis not made in WA	29	10.6	14	2.9	43	5.7
Miscoded, non-reportable tumour type	3	1.1	15	3.1	18	2.4
Invasive code incorrect (not "cancer")	0	0.0	15	3.1	15	2.0
<b>All</b>	<b>81</b>	<b>29.6</b>	<b>138</b>	<b>28.8</b>	<b>219</b>	<b>29.0</b>
<b>Group C. Partial result only - not included in incidence data</b>						
Follow up elsewhere	0	0.0	6	1.3	6	0.8
Still querying, unresolved	2	0.7	1	0.2	3	0.4
<b>All</b>	<b>2</b>	<b>0.7</b>	<b>7</b>	<b>1.5</b>	<b>9</b>	<b>1.2</b>
<b>Group D. No result - not included in incidence data</b>						
No useful info in file or letter response	2	0.7	10	2.1	12	1.6
No reply / no file seen	0	0.0	4	0.8	4	0.5
No response at all (e.g. bad address, returned)	0	0.0	12	2.5	12	1.6
No outcome of any kind	38	13.9	112	23.3	150	19.9
<b>All</b>	<b>40</b>	<b>14.6</b>	<b>138</b>	<b>28.8</b>	<b>178</b>	<b>23.6</b>
<b>All enquiries</b>	<b>274</b>	<b>(100)</b>	<b>480</b>	<b>(100)</b>	<b>754</b>	<b>(100)</b>

This effort resulted in the confirmation of 348 new cancers on the WACR database, but many were found to have been diagnosed prior to 2005. In 254 (73%) of these newly-validated cases, a pathological diagnosis had been made but was not notified to the Registry (Table 4). Many (25%) of the 348 validated cases were chronic myeloproliferative/ myelodysplastic disorders, polycythaemias and refractory anaemias which have relatively recently been

reclassified as notifiable disorders - which may explain the lack of notification (see Table 5). Increasingly these are being diagnosed by flow cytometry, and an electronic notification system is only now being developed for this type of pathology test.

In 94 cases, our investigations confirmed a cancer diagnosis which had been made by non-histological means.

Of the 754 records investigated, 219 were able to be confidently excluded from WA incidence data. The majority of invalid codes related to hospital information/coding issues, however 20% of cancers were found to have been diagnosed while a person was not resident in Western Australia. For the remaining 187 records, in 9 our investigations are continuing however, in 178, we have failed to verify the diagnosis and these persons have not been included in WA incidence data.

Among the remaining newly-validated cases, the most common cancer types were prostate and colorectal cancers, non-Hodgkin lymphoma (NHL), pancreatic cancers, melanoma and liver cancers (each between 4% and 9% of the validated cases) (Table 5). However, even for these cancers, the proportions of cases found to be invalid were also high - 32% (prostate), 43% (colorectal), 28% (NHL); and for other common cancers such as breast cancer the invalid proportions were also high - 46% for breast cancer, and 59% for cancers of unknown primary site.

In summary, a total of 706 letters sent about 480 persons, and examination of 226 inpatient files, have resulted in 348 newly-confirmed cancer incidence records, elimination of 219 possible cases, and an indeterminate outcome in 187 cases. Estimated time spent on letters/dealing with replies/file examinations / travel to examine files/ database updates/ consideration of queries by medical officers is in excess of 4 weeks of work for one staff member; this return on time invested may not justify continuation of such investigations.

Activities that may reduce the apparent loss of data if such work cannot be done in the future, include:

- Targeting laboratories with a perceived notification deficit in some areas - in progress.
- Working to establish information flows for "flow cytometry" results - in progress.
- Proposing changes to ICD10-AM default codes for the unqualified term "polycythaemia" so that it is not assumed neoplastic - done 2006.
- Enhancing ICD10-AM cancer hospital data "edit" rules in conjunction with other Dept of Health staff, to improve internal consistency of data - ongoing.
- Seeking changes to existing hospital Patient Administration Systems.

Table 5. Outcomes of "HMDS-only" case investigation, by hospital-coded cancer type

Tumour type	Group A - WA cancer		Group B - no WA cancer		Groups B&C - no result		All		Included cases: Pathologic Dx	
	Cases	%	Cases	%	Cases	%	Cases	%	Cases	%
Myelodysplastic syndrome	33	43.4	14	18.4	29	38.2	76	(100)	27	81.8
Prostate	30	50.0	19	31.7	11	18.3	60	"	17	56.7
Colorectal	22	39.3	24	42.9	10	17.9	56	"	20	90.9
Polycythaemia rubra vera	26	51.0	13	25.5	12	23.5	51	"	23	88.5
Non-Hodgkin lymphoma	20	42.6	13	27.7	14	29.8	47	"	18	90.0
Breast cancer	11	31.4	16	45.7	8	22.9	35	"	4	36.4
Melanoma (skin)	14	43.8	8	25.0	10	31.3	32	"	14	100.0
Unknown primary site	4	13.8	17	58.6	8	27.6	29	"	2	50.0
Lung	13	44.8	6	20.7	10	34.5	29	"	7	53.8
Chronic lymphoid leukaemia	16	64.0	3	12.0	6	24.0	25	"	13	81.3
Myeloma	14	56.0	3	12.0	8	32.0	25	"	13	92.9
Pancreas	16	69.6	6	26.1	1	4.3	23	"	5	31.3
Chronic myeloproliferative d/o	11	47.8	4	17.4	8	34.8	23	"	10	90.9
Refract. anaemia/cytopaenia	6	30.0	3	15.0	11	55.0	20	"	6	100.0
Liver	14	73.7	3	15.8	2	10.5	19	"	4	28.6
Kidney	11	57.9	6	31.6	2	10.5	19	"	5	45.5
Ovary	6	40.0	5	33.3	4	26.7	15	"	5	83.3
Soft tissues	1	6.7	11	73.3	3	20.0	15	"	1	100.0
Eye / lacrimal gland	10	83.3	0	0.0	2	16.7	12	"	1	10.0
Mouth	9	75.0	1	8.3	2	16.7	12	"	9	100.0
Thyroid	8	66.7	4	33.3	0	0.0	12	"	8	100.0
Brain	7	63.6	3	27.3	1	9.1	11	"	3	42.9
Lymphoma NOS	2	20.0	5	50.0	3	30.0	10	"		0.0
Small intestine	3	33.3	3	33.3	3	33.3	9	"	3	100.0
Immunoproliferative neoplasm	8	88.9	0	0.0	1	11.1	9	"	7	87.5
Lymphoid leukaemia	3	42.9	4	57.1	0	0.0	7	"	3	100.0
Myelofibrosis/sclerosis	4	57.1	2	28.6	1	14.3	7	"	4	100.0
Chronic myeloid leukaemia	3	50.0	1	16.7	2	33.3	6	"	2	66.7
Testis	1	20.0	2	40.0	2	40.0	5	"	1	100.0
Hodgkin lymphoma	3	75.0	0	0.0	1	25.0	4	"	3	100.0
Mesothelioma	1	25.0	3	75.0	0	0.0	4	"	1	100.0
Myeloid leukaemia	4	100.0	0	0.0	0	0.0	4	"	4	100.0
Non-melanoma skin cancer	2	50.0	1	25.0	1	25.0	4	"	2	100.0
Oesophagus	1	25.0	2	50.0	1	25.0	4	"		0.0
Uterus	1	25.0	1	25.0	2	50.0	4	"	1	100.0
Acute myeloid leukaemia	0	0.0	2	66.7	1	33.3	3	"		
Bone	0	0.0	2	66.7	1	33.3	3	"		
Salivary gland	2	66.7	1	33.3	0	0.0	3	"	2	100.0
Gallbladder/biliary	0	0.0	2	100.0	0	0.0	2	"		
Tongue	0	0.0	1	50.0	1	50.0	2	"		
Vulva	1	50.0	1	50.0	0	0.0	2	"	1	100.0
Cervix	1	50.0	0	0.0	1	50.0	2	"	1	100.0
Leukaemia NOS	1	50.0	0	0.0	1	50.0	2	"	1	100.0
Acute lymphoid leukaemia	0	0.0	1	100.0	0	0.0	1	"		
Periph./autonomic NS	0	0.0	0	0.0	1	100.0	1	"		
Anus	0	0.0	0	0.0	1	100.0	1	"		
Larynx	0	0.0	1	100.0	0	0.0	1	"		
Meninges	1	100.0	0	0.0	0	0.0	1	"	1	100.0
Penis/male genitals	1	100.0	0	0.0	0	0.0	1	"		0.0
Pharynx	1	100.0	0	0.0	0	0.0	1	"	1	100.0
Thymus	1	100.0	0	0.0	0	0.0	1	"	1	100.0
Malig. histiocytic/dendritic neo.	0	0.0	1	100.0	0	0.0	1	"		
Nasal / sinus	0	0.0	1	100.0	0	0.0	1	"		
Peritoneum / retroperitoneum	1	100.0	0	0.0	0	0.0	1	"		0.0
Stomach	0	0.0	0	0.0	1	100.0	1	"		
Total	348	46.2	219	29.0	187	24.8	754	(100)	254	73.0

### 3.3 Revised projections of cancer incidence

#### 3.3.1 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. In particular, mesothelioma projections do not take asbestos exposure into account. Reliance on any mathematical procedure (in isolation from knowledge of changes in medical practice and risk factors) is risky, and it is likely that in males, cancer projections are still being affected by the large changes in prostate cancer incidence in the early 1990s.

Using an exponentially-weighted moving average method as described in *Cancer incidence and mortality in Western Australia 2002*,<sup>5</sup> updated projections for "All cancers" and selected cancer types have been revised and are presented here in Tables 6-11.

#### 3.3.2 Projections - incidence

*Males:* On the basis of recent years, a small increase in all-cancers incidence is projected, from an ASR of 356 cases per 100,000 in 2005, to 364 per 100,000 by 2010 (Table 6).

*Females:* On the basis of recent years, all-cancers incidence in females is expected to remain relatively stable, changing only from an ASR of 261 per 100,000 in 2005 to 270 per 100,000 by 2010.

Both these are similar to the most recent published projections from this Registry

Table 6. Cancer incidence, Western Australia, 1986-2005, and projections to 2015: all cancers

Year	MALES				FEMALES			
	Cases	95% c.i.	ASR	95% c.i.	Cases	95% c.i.	ASR	95% c.i.
1986	2488		307.6	295-320	2146		243.0	232-254
1987	2637		315.7	304-328	2255		245.4	235-256
1988	2682		314.3	302-326	2396		250.6	240-261
1989	2703		306.0	294-318	2470		253.1	243-264
1990	2834		310.9	299-322	2478		249.3	239-260
1991	3059		323.5	312-335	2630		254.5	244-265
1992	3221		332.3	321-344	2778		261.8	252-272
1993	3671		368.5	356-381	2810		259.3	249-269
1994	4266		420.4	408-433	2950		266.4	256-277
1995	4100		396.6	384-409	3245		285.9	276-296
1996	3925		365.5	354-377	3058		259.2	250-269
1997	3583		320.9	310-332	3121		257.0	248-267
1998	3665		317.3	307-328	3190		253.4	244-263
1999	4212		352.5	342-363	3415		263.5	254-273
2000	4198		341.0	331-352	3435		259.9	251-269
2001	4292		337.1	327-347	3642		263.0	254-272
2002	4814		366.3	356-377	3896		276.3	267-286
2003	4885		359.9	350-370	3910		270.2	261-279
2004	5241		373.7	363-384	4084		275.5	267-285
2005	5163		356.1	346-366	3988		260.9	252-270
2006	5278	5203-5353	355.0	345-365	4120	4024-4217	265.9	257-275
2007	5477	5399-5555	357.3	348-367	4238	4139-4337	266.9	258-275
2008	5676	5596-5757	359.6	350-369	4356	4255-4458	267.9	260-276
2009	5884	5801-5967	361.9	352-371	4478	4374-4582	269.0	261-277
2010	6094	6009-6179	364.2	355-374	4604	4497-4710	270.0	262-278
2015	7275	7182-7367	375.9	367-385	5279	5163-5395	275.2	267-283

Table 7. Incidence and projections to 2015: prostate cancer (males) and breast cancer (females)

Year	Prostate cancer (males)				Breast cancer (females)			
	Cases	95% c.i.	ASR	95% c.i.	Cases	95% c.i.	ASR	95% c.i.
1986	398		46.0	41-51	531		62.4	57-68
1987	434		48.8	44-54	592		67.1	62-73
1988	390		43.2	39-48	610		67.1	62-73
1989	441		47.9	43-52	695		75.4	70-81
1990	533		55.4	51-60	684		72.6	67-78
1991	574		58.3	53-63	694		71.5	66-77
1992	657		64.3	59-69	751		75.0	69-81
1993	1039		101.0	95-107	772		74.3	69-80
1994	1432		139.6	132-147	844		81.8	76-88
1995	1253		121.4	115-128	946		88.5	83-94
1996	952		89.4	84-95	877		79.0	74-85
1997	730		64.5	60-69	917		80.5	75-86
1998	717		61.8	57-66	926		79.2	74-84
1999	937		77.7	73-83	1025		85.3	80-91
2000	821		65.4	61-70	1023		82.4	77-88
2001	956		74.8	70-80	1107		87.1	82-92
2002	1241		94.8	89-100	1148		87.4	82-93
2003	1252		91.6	86-97	1136		84.6	80-90
2004	1518		108.5	103-114	1153		82.8	78-88
2005	1471		100.5	95-106	1154		81.2	76-86
2006	1339	1266-1411	88.4	84-93	1201	1141-1261	82.7	78-88
2007	1421	1347-1496	91.3	86-96	1242	1181-1302	83.7	79-89
2008	1506	1431-1581	94.1	89-99	1282	1220-1344	84.6	80-89
2009	1597	1521-1673	97.1	92-102	1324	1261-1387	85.6	81-90
2010	1691	1614-1768	100.1	95-105	1367	1302-1432	86.5	82-91
2015	2249	2157-2341	116.6	112-122	1592	1523-1662	91.3	87-96

Table 8. Incidence and projections to 2015: colorectal cancer

Year	MALES				FEMALES			
	Cases	95% c.i.	ASR	95% c.i.	Cases	95% c.i.	ASR	95% c.i.
1986	354		44.0	39-49	327		34.0	30-38
1987	338		41.1	37-46	327		33.2	29-37
1988	382		45.2	41-50	318		31.2	28-35
1989	318		36.2	32-40	305		28.7	25-32
1990	363		40.0	36-44	342		32.5	29-36
1991	417		44.3	40-49	401		36.0	32-40
1992	415		43.2	39-47	369		32.0	29-36
1993	438		44.2	40-48	361		30.1	27-33
1994	454		44.5	40-49	369		30.5	27-34
1995	464		44.1	40-48	419		33.0	30-36
1996	524		48.6	44-53	372		28.6	25-32
1997	520		46.4	42-51	410		31.5	28-35
1998	518		44.7	41-49	425		31.8	29-35
1999	522		43.4	40-47	430		29.7	27-33
2000	633		51.1	47-55	441		30.0	27-33
2001	616		47.4	44-51	493		31.1	28-34
2002	571		41.9	38-46	455		28.2	25-31
2003	624		45.0	41-49	477		29.0	26-32
2004	617		42.7	39-46	483		29.5	27-32
2005	577		39.1	36-42	507		29.5	27-32
2006	667	629-706	43.7	40-47	519	484-554	29.7	27-33
2007	691	652-730	43.8	41-47	530	495-565	29.5	27-32
2008	715	675-755	43.9	41-47	541	505-577	29.4	27-32
2009	740	699-781	44.0	41-47	553	516-589	29.2	27-32
2010	765	723-808	44.1	41-47	565	527-602	29.0	27-32
2015	908	857-958	44.7	42-48	630	588-672	28.2	26-31

Table 9. Incidence and projections to 2015: lung cancer

Year	MALES				FEMALES			
	Cases	95% c.i.	ASR	95% c.i.	Cases	95% c.i.	ASR	95% c.i.
1986	436		54.7	50-60	142		15.9	13-19
1987	464		55.8	51-61	171		18.6	16-22
1988	433		50.6	46-55	173		17.5	15-20
1989	471		53.5	49-58	169		16.5	14-19
1990	425		46.8	42-51	182		17.7	15-20
1991	424		45.6	41-50	204		19.1	16-22
1992	447		46.8	42-51	184		16.8	14-19
1993	418		42.1	38-46	199		17.6	15-20
1994	492		47.6	43-52	188		16.2	14-19
1995	464		43.8	40-48	223		19.1	16-22
1996	486		44.5	40-49	211		17.0	15-20
1997	456		40.1	36-44	237		18.8	16-21
1998	475		40.7	37-44	247		18.3	16-21
1999	510		40.8	37-45	260		18.3	16-21
2000	496		39.7	36-43	265		18.5	16-21
2001	504		38.1	35-42	260		17.5	15-20
2002	536		39.5	36-43	306		19.7	17-22
2003	517		35.5	32-39	312		19.4	17-22
2004	530		34.7	32-38	320		19.8	18-22
2005	595		37.9	35-41	312		18.4	16-21
2006	608	573-643	38.7	36-42	313	286-339	18.5	16-21
2007	618	582-654	37.9	35-41	325	298-353	18.7	17-21
2008	627	591-664	37.1	34-40	337	309-365	18.8	17-21
2009	637	600-675	36.4	34-39	349	320-379	19.0	17-21
2010	647	608-685	35.7	33-39	362	332-392	19.1	17-21
2015	701	655-747	32.1	30-35	436	402-470	19.6	18-22

Table 10. Incidence and projections to 2015: melanoma (skin)

Year	MALES				FEMALES			
	Cases	95% c.i.	ASR	95% c.i.	Cases	95% c.i.	ASR	95% c.i.
1986	225		27.7	24-31	184		22.9	20-26
1987	265		32.2	28-36	213		24.1	21-28
1988	295		35.1	31-39	249		28.6	25-32
1989	262		29.9	26-34	220		24.2	21-28
1990	296		32.9	29-37	214		22.8	20-26
1991	338		36.1	32-40	269		27.6	24-31
1992	355		36.8	33-41	252		25.9	23-29
1993	386		39.9	36-44	332		33.4	30-37
1994	424		42.6	39-47	349		33.3	30-37
1995	478		47.9	44-52	356		33.5	30-37
1996	430		40.9	37-45	312		29.3	26-33
1997	396		36.1	33-40	293		25.9	23-29
1998	429		37.6	34-41	326		27.7	25-31
1999	551		47.7	44-52	395		33.8	30-37
2000	529		44.5	41-48	372		30.8	28-34
2001	509		41.3	38-45	393		30.9	28-34
2002	640		50.8	47-55	442		34.2	31-38
2003	671		50.9	47-55	415		31.3	28-35
2004	579		42.6	39-46	411		29.9	27-33
2005	588		42.5	39-46	402		28.2	25-31
2006	615	563-668	43.8	40-47	425	401-450	30.4	27-33
2007	645	592-698	44.7	41-48	441	416-467	30.9	28-34
2008	675	621-729	45.7	42-49	457	431-483	31.2	28-34
2009	706	651-761	46.5	43-50	473	446-499	31.6	29-35
2010	738	681-794	47.3	44-51	489	462-517	31.9	29-35
2015	918	853-983	51.4	48-55	583	552-614	33.7	31-37

Table 11. Incidence and projections to 2015: mesothelioma

Year	MALES				FEMALES			
	Cases	95% c.i.	ASR	95% c.i.	Cases	95% c.i.	ASR	95% c.i.
1986	27		3.4	2-5	4		0.4	0-1
1987	28		3.5	2-5	4		0.4	0-1
1988	33		3.9	3-5	6		0.6	0-1
1989	34		4.1	3-5	5		0.4	0-1
1990	34		4.0	3-5	6		0.7	0-1
1991	38		4.2	3-6	3		0.3	0-1
1992	44		4.6	3-6	5		0.5	0-1
1993	57		5.8	4-7	13		1.3	1-2
1994	48		4.8	3-6	5		0.4	0-1
1995	57		5.4	4-7	5		0.5	0-1
1996	57		5.5	4-7	7		0.5	0-1
1997	57		5.1	4-7	6		0.5	0-1
1998	58		5.3	4-7	7		0.6	0-1
1999	55		4.4	3-6	8		0.6	0-1
2000	51		4.0	3-5	9		0.7	0-1
2001	66		5.0	4-6	14		1.1	1-2
2002	66		4.9	4-6	7		0.3	0-1
2003	58		4.2	3-5	13		0.7	0-1
2004	65		4.4	3-6	13		1.0	0-2
2005	75		4.9	4-6	14		0.9	0-1
2006	71	60-81	4.6	4-6	10	5-14	0.6	0-1
2007	75	64-85	4.6	4-6	11	7-16	0.7	0-1
2008	80	68-91	4.8	4-6	12	7-17	0.7	0-1
2009	84	72-96	4.9	4-6	13	8-18	0.8	0-1
2010	90	77-102	5.1	4-6	14	9-19	0.8	0-1
2015	120	106-135	5.6	5-7	19	13-25	0.9	1-1

### 3.3.3 Projections - mortality

Mortality projections are shown only for the most common cancers, as numbers are lower than for incidence, and predicting mortality in the future has an added uncertainty in that it should depend on cancer incidence. The statistics here are based solely on known mortality rates and projected population growth. In all cases shown, except for lung cancer in females, mortality rates are expected to fall, although annual case numbers are expected to increase with population growth.

Table 12. Cancer mortality, Western Australia, 1990-2005, and projections to 2015: all cancers

Year	MALES				FEMALES			
	Deaths	95% c.i.	ASR	95% c.i.	Deaths	95% c.i.	ASR	95% c.i.
1990	1394		150.8	143-159	1077		99.9	93.6-106
1991	1412		148.3	140-156	1098		96.0	89.9-102
1992	1475		148.6	141-156	1193		102.6	96.4-109
1993	1552		152.2	144-160	1237		102.3	96.2-108
1994	1648		158.1	150-166	1212		99.7	93.7-106
1995	1633		150.7	143-158	1266		97.7	91.9-103
1996	1718		153.4	146-161	1253		94.0	88.4-99.6
1997	1707		147.8	141-155	1337		97.4	91.8-103
1998	1684		141.0	134-148	1253		86.5	81.3-91.7
1999	1793		143.6	137-150	1347		89.3	84.1-94.5
2000	1787		137.2	131-144	1333		87.4	82.3-92.5
2001	1781		132.2	126-139	1372		84.6	79.7-89.5
2002	1882		133.6	127-140	1425		86.4	81.5-91.4
2003	1866		127.6	122-134	1511		88.3	83.4-93.1
2004	1870		122.9	117-129	1474		83.9	79.2-88.6
2005	2004		126.9	121-133	1428		78.1	73.6-82.6
2006	2144	2065-2222	133.6	128-140	1573	1513-1633	86.4	81.7-91.1
2007	2194	2112-2276	131.9	126-138	1599	1536-1662	85.2	80.6-89.8
2008	2242	2157-2327	130.2	125-136	1624	1558-1689	84.0	79.5-88.5
2009	2292	2203-2381	128.5	123-134	1649	1581-1716	82.8	78.5-87.2
2010	2341	2248-2434	126.9	122-132	1675	1605-1745	81.7	77.4-85.9
2015	2611	2493-2729	118.7	114-124	1820	1737-1904	76.0	72.1-79.8

Table 13. Mortality and projections to 2015: prostate cancer (males) and breast cancer (females)

Year	Prostate cancer (males)				Breast cancer (females)			
	Deaths	95% c.i.	ASR	95% c.i.	Deaths	95% c.i.	ASR	95% c.i.
1990	165		16.4	13.8-19.0	196		19.8	16.8-22.7
1991	167		16.5	13.9-19.1	187		17.5	14.9-20.2
1992	183		17.2	14.7-19.8	214		19.9	17.1-22.7
1993	218		19.3	16.7-21.9	211		18.4	15.7-21.0
1994	173		15.6	13.2-18.0	228		19.8	17.1-22.5
1995	219		19.0	16.4-21.5	233		19.4	16.8-22.1
1996	243		19.9	17.3-22.4	216		18.0	15.5-20.6
1997	181		14.2	12.1-16.3	230		18.4	15.9-21.0
1998	169		12.9	10.9-14.9	202		15.1	12.9-17.4
1999	189		13.6	11.6-15.5	239		17.8	15.4-20.3
2000	207		14.4	12.4-16.4	205		14.1	12.1-16.2
2001	191		12.5	10.7-14.3	233		15.8	13.6-17.9
2002	186		11.7	10.0-13.5	231		16.0	13.8-18.2
2003	202		12.4	10.6-14.1	256		16.2	14.1-18.4
2004	206		12.1	10.4-13.8	223		14.1	12.1-16.1
2005	234		13.4	11.7-15.2	223		13.6	11.7-15.5
2006	242	234-250	13.3	11.6-15.1	256	239-273	15.5	13.4-17.5
2007	246	237-254	13.0	11.3-14.7	257	240-275	15.2	13.2-17.1
2008	248	239-257	12.7	11.0-14.3	259	240-277	14.8	12.9-16.8
2009	251	242-261	12.3	10.7-13.9	260	240-279	14.5	12.6-16.4
2010	254	244-264	12.0	10.5-13.5	261	241-280	14.2	12.4-16.1
2015	270	259-280	10.5	9.2-11.8	265	243-288	12.7	11.1-14.4

Table 14. Mortality and projections to 2015: colorectal cancer

Year	MALES				FEMALES			
	Deaths	95% c.i.	ASR	95% c.i.	Deaths	95% c.i.	ASR	95% c.i.
1990	158		17.2	14.5-19.9	157		13.7	11.4-16.0
1991	171		18.2	15.4-20.9	182		15.0	12.6-17.3
1992	164		16.4	13.8-18.9	161		13.2	11.0-15.4
1993	193		18.9	16.2-21.6	165		12.9	10.8-15.1
1994	214		20.7	17.9-23.5	184		14.5	12.2-16.8
1995	191		17.5	15.0-20.0	192		13.9	11.8-16.1
1996	226		20.8	18.0-23.5	177		12.8	10.7-14.8
1997	230		20.5	17.8-23.2	159		10.7	8.9-12.5
1998	228		19.4	16.9-22.0	178		11.4	9.5-13.2
1999	226		18.2	15.7-20.6	198		12.5	10.6-14.4
2000	228		17.9	15.5-20.2	185		12.0	10.1-13.9
2001	241		18.2	15.8-20.5	180		10.4	8.7-12.1
2002	230		16.2	14.0-18.4	180		10.7	9.0-12.5
2003	257		17.5	15.3-19.7	185		9.6	8.0-11.1
2004	207		14.0	12.0-16.0	176		9.1	7.6-10.6
2005	238		15.4	13.4-17.4	188		8.5	7.1-9.9
2006	267	253-281	16.8	14.8-18.9	205	190-220	10.3	8.7-11.8
2007	275	261-289	16.7	14.7-18.8	205	190-220	10.0	8.4-11.5
2008	282	268-296	16.6	14.6-18.6	206	190-221	9.7	8.2-11.1
2009	290	275-304	16.4	14.5-18.4	206	190-221	9.4	7.9-10.8
2010	298	283-312	16.3	14.4-18.2	206	190-222	9.1	7.7-10.4
2015	339	323-355	15.6	13.9-17.3	208	191-225	7.7	6.5-8.8

Table 15. Mortality and projections to 2015: lung cancer

Year	MALES				FEMALES			
	Deaths	95% c.i.	ASR	95% c.i.	Deaths	95% c.i.	ASR	95% c.i.
1990	362		39.7	35.6-43.9	150		14.2	11.8-16.6
1991	384		41.3	37.1-45.5	151		13.6	11.3-15.9
1992	350		35.7	31.9-39.5	153		13.5	11.2-15.8
1993	365		36.6	32.7-40.4	170		14.1	11.9-16.4
1994	408		39.3	35.4-43.2	150		12.9	10.7-15.1
1995	404		37.0	33.4-40.7	178		14.3	12.1-16.5
1996	392		35.2	31.6-38.7	190		14.9	12.6-17.1
1997	381		32.9	29.5-36.3	188		14.4	12.2-16.7
1998	403		34.1	30.7-37.5	189		13.2	11.2-15.2
1999	443		35.5	32.1-38.9	214		14.4	12.4-16.5
2000	428		32.7	29.5-35.9	226		15.3	13.1-17.4
2001	420		31.9	28.8-35.0	202		12.7	10.8-14.6
2002	466		33.3	30.2-36.4	222		13.4	11.5-15.3
2003	430		29.5	26.6-32.4	253		15.4	13.4-17.5
2004	439		28.3	25.5-31.0	250		14.7	12.7-16.6
2005	478		29.5	26.7-32.2	262		14.9	12.9-16.8
2006	507	485-528	31.5	28.7-34.3	252	233-270	14.2	12.3-16.1
2007	516	494-538	30.9	28.1-33.6	261	242-280	14.3	12.4-16.2
2008	525	503-548	30.3	27.6-33.0	270	251-289	14.3	12.5-16.2
2009	534	511-558	29.7	27.1-32.3	280	260-299	14.4	12.6-16.2
2010	543	519-567	29.1	26.5-31.6	290	269-310	14.5	12.7-16.2
2015	594	566-622	26.2	24.0-28.4	347	323-371	14.7	13.1-16.4

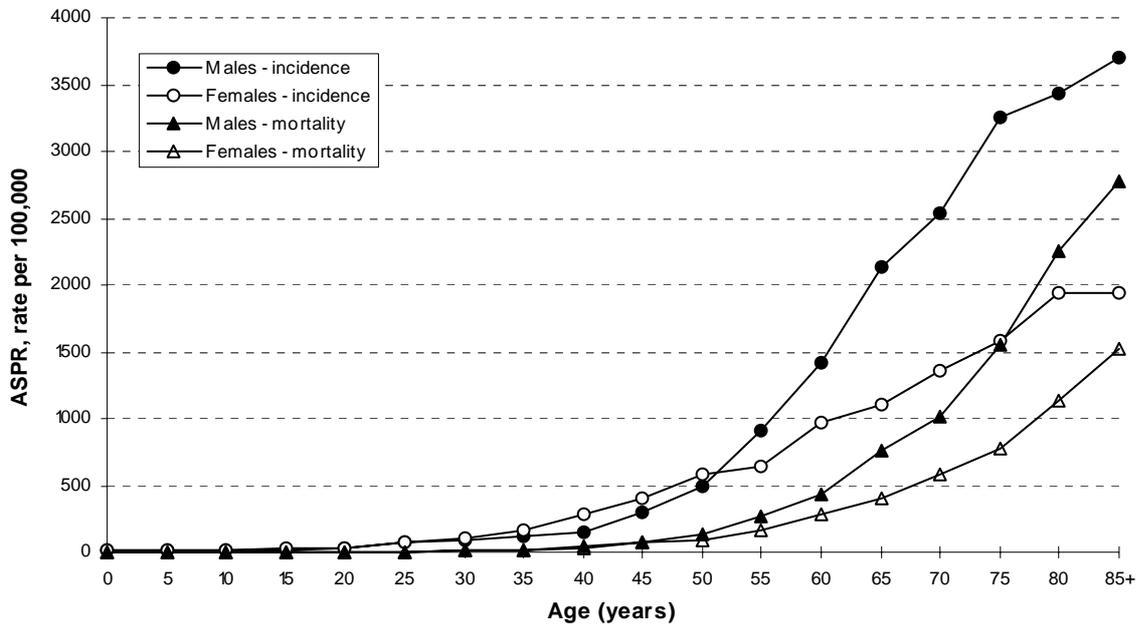
### 3.4 Cancer incidence and mortality: age distributions

Cancer is widely regarded as a disease which most often affects older people and this is supported by Figure 13. However there are well-known exceptions, notably testicular cancer in men, thyroid cancer in women, and primary bone cancers in both. In this section of the report, we present graphs to illustrate the variation in cancer incidence and mortality with age for the most common incident cancers, and for other cancers of common interest. These data are presented with minimal comment, as a discussion of possible reasons for the different patterns seen for different cancer types is beyond the scope of this report.

#### All cancers combined

Male all-cancers incidence and mortality rates generally exceed those in females after the age of 50 years; the higher rates in younger women are primarily due to breast cancer.

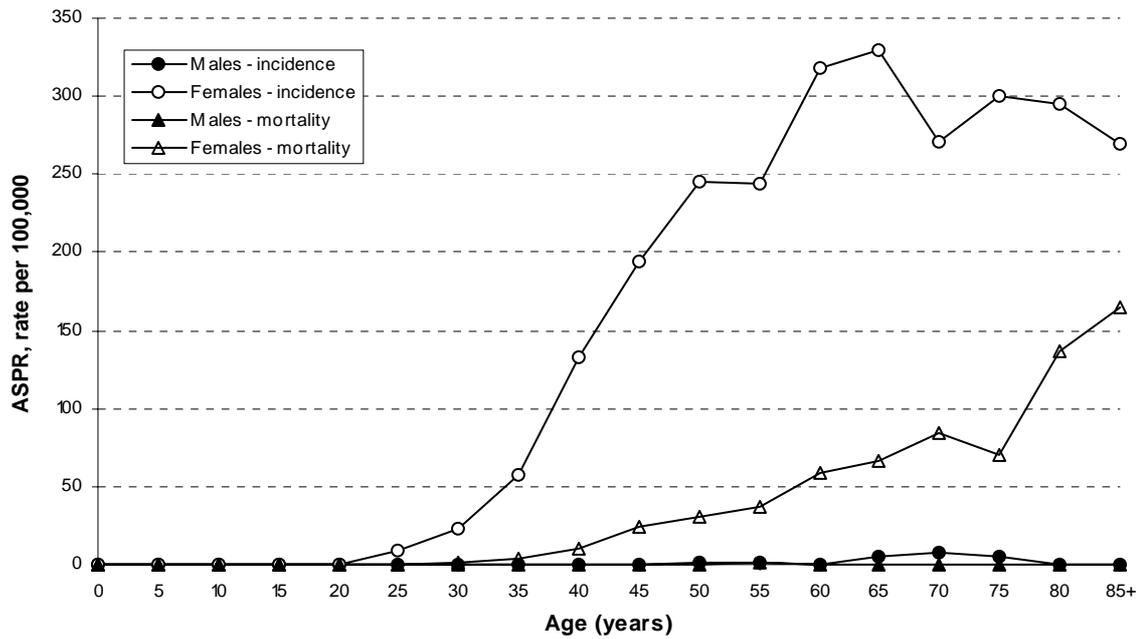
Figure 13. Age-specific all-cancers incidence and mortality rates, Western Australia, 2005.



#### Breast cancer

Women aged 50-69 years are actively targeted by BreastScreen WA's mammography screening service, and one of the measures of success is the early detection of small tumours.<sup>5,6</sup> It appears likely that the drop in incidence in the 70-79 age range is associated with the end of active screening, and is followed by a later rise with an associated increase in mortality (Figure 14).

Figure 14. Age-specific breast cancer incidence and mortality rates, Western Australia, 2005.



### Cervical cancer

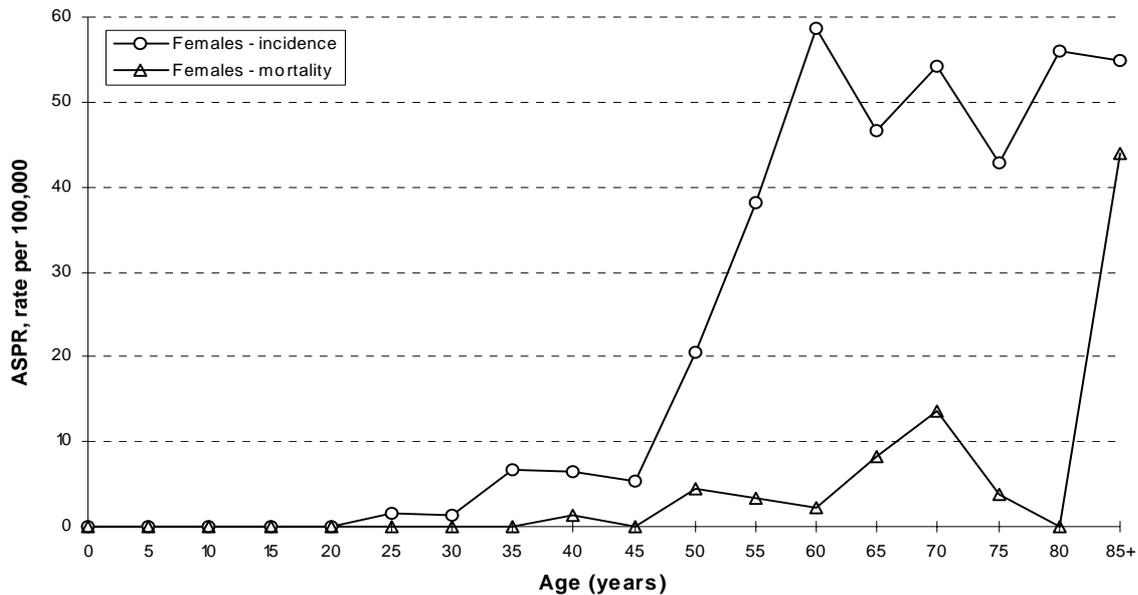
Pap-smear detected cervical cancers are likely to be diagnosed at a relatively early stage of the disease, and this condition has a low mortality / incidence rate ratio except in women aged over 75.

Figure 15. Age-specific cervical cancer incidence and mortality rates, Western Australia, 2005.



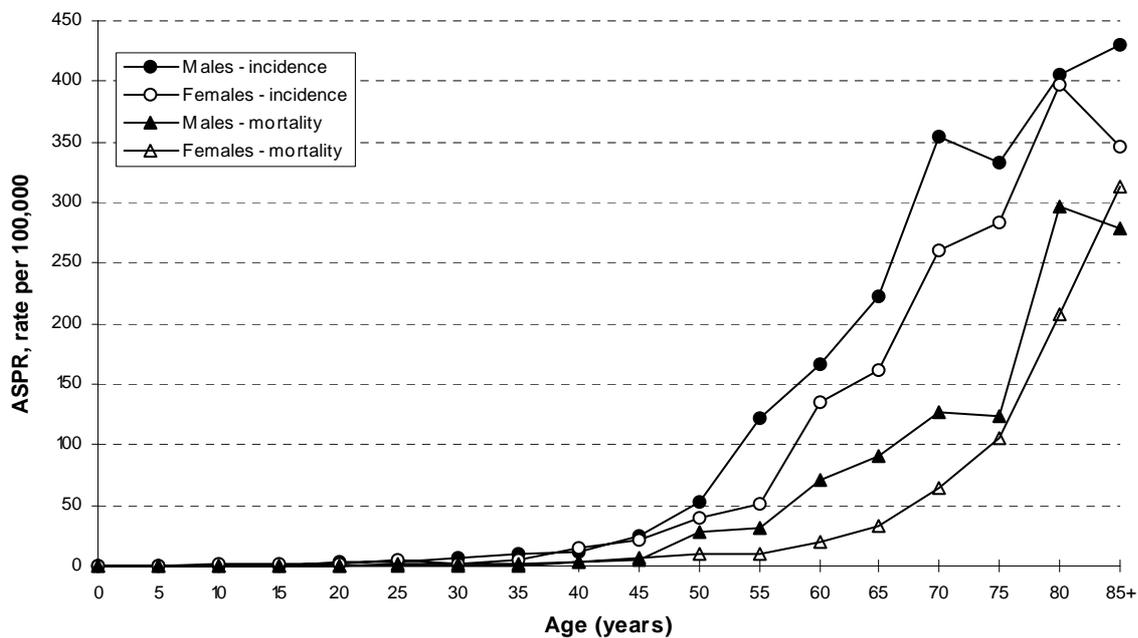
## Uterine cancer

Figure 16. Age-specific uterine cancer incidence and mortality rates, Western Australia, 2005.



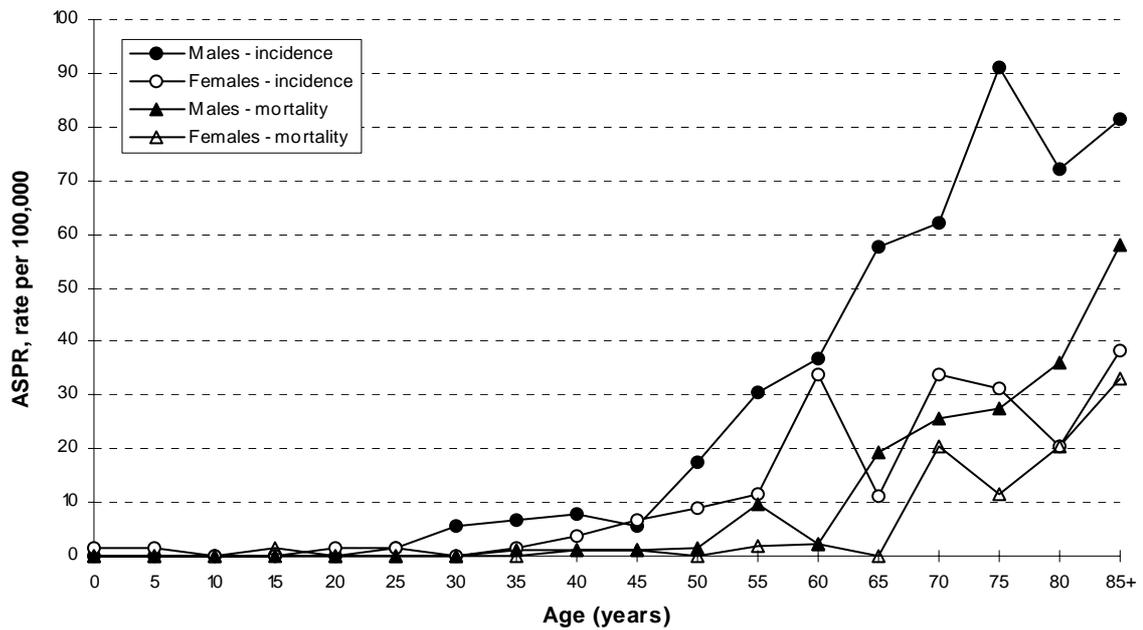
## Colorectal cancer

Figure 17. Age-specific colorectal cancer incidence and mortality rates, Western Australia, 2005.



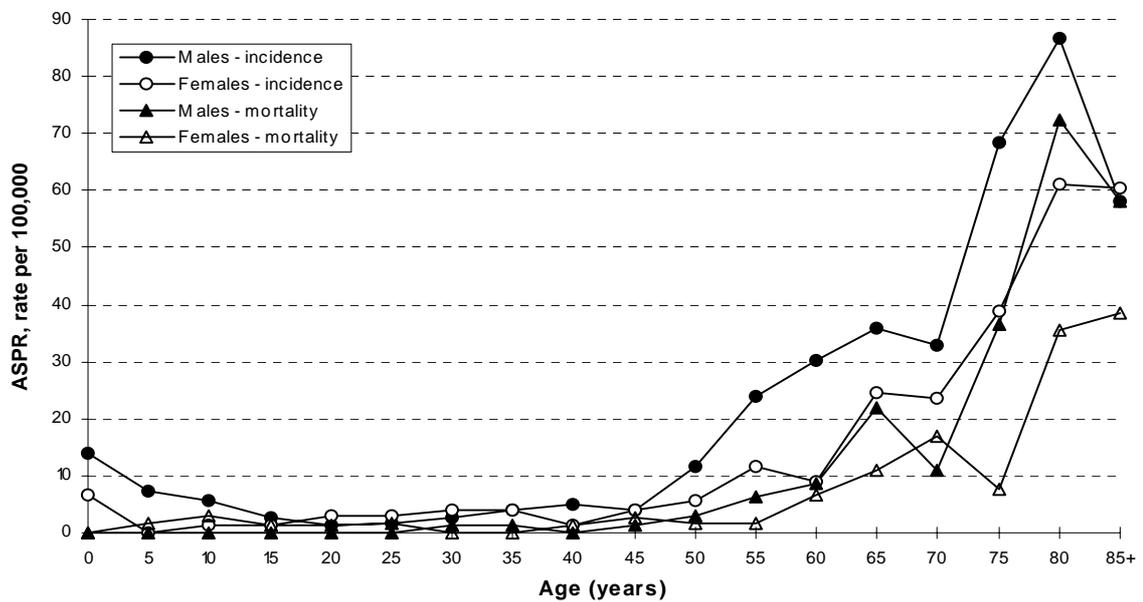
## Kidney cancer

Figure 18. Age-specific kidney cancer incidence and mortality rates, Western Australia, 2005.



## Leukaemia (all types combined)

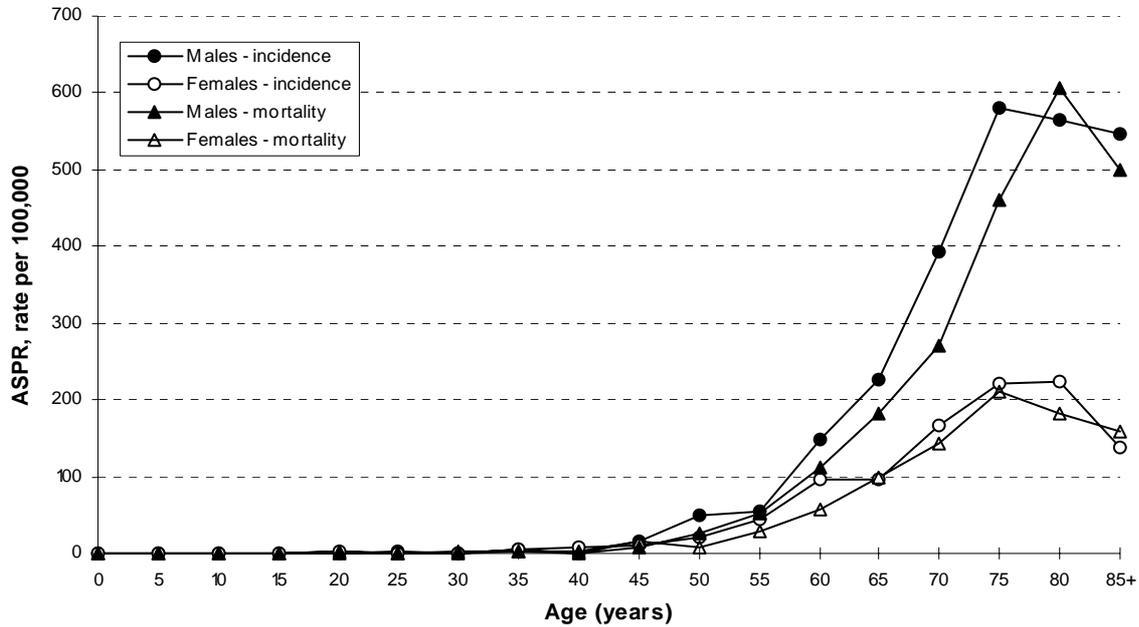
Figure 19. Age-specific leukaemia incidence and mortality rates, Western Australia, 2005.



## Lung cancer

Lung cancer is more usually fatal than many other cancer types in males and females, and incidence and mortality lines are not widely separated.

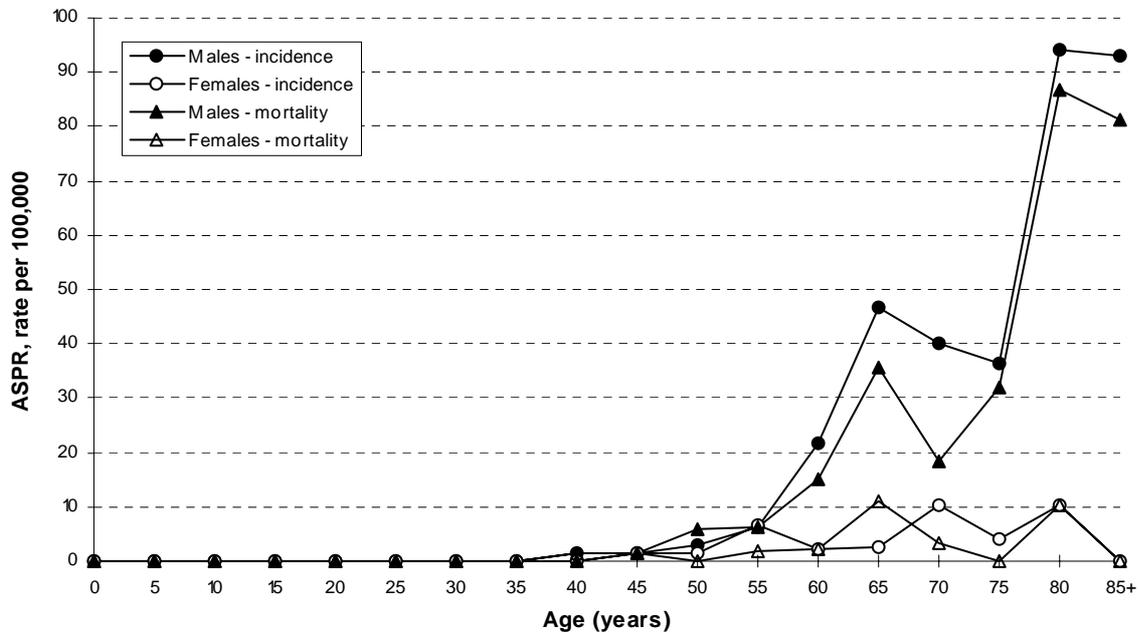
Figure 20. Age-specific lung cancer incidence and mortality rates, Western Australia, 2005.



## Mesothelioma

Mesothelioma is usually a fatal disease, and incidence and mortality lines are close and often overlap.

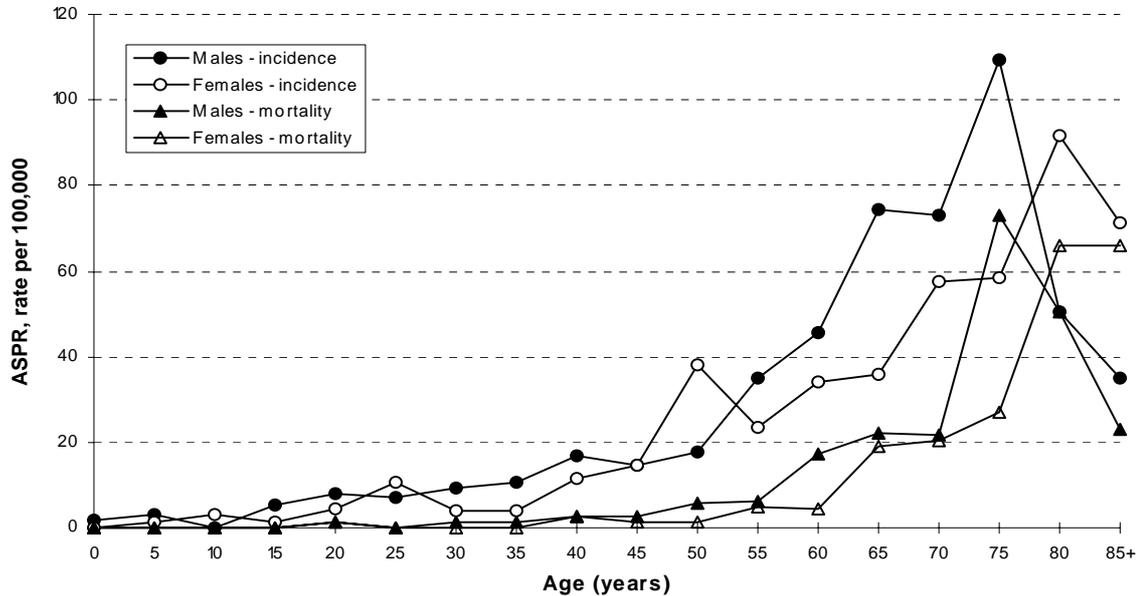
Figure 21. Age-specific mesothelioma incidence and mortality rates, Western Australia, 2005.



## Lymphoma (all types combined)

Lymphoma in both males and females is, more often than many cancer types, diagnosed in people under 50 years of age. It does occur in childhood, and incidence increases gradually with age.

Figure 22. Age-specific lymphoma incidence and mortality rates, Western Australia, 2005.



## Myeloma

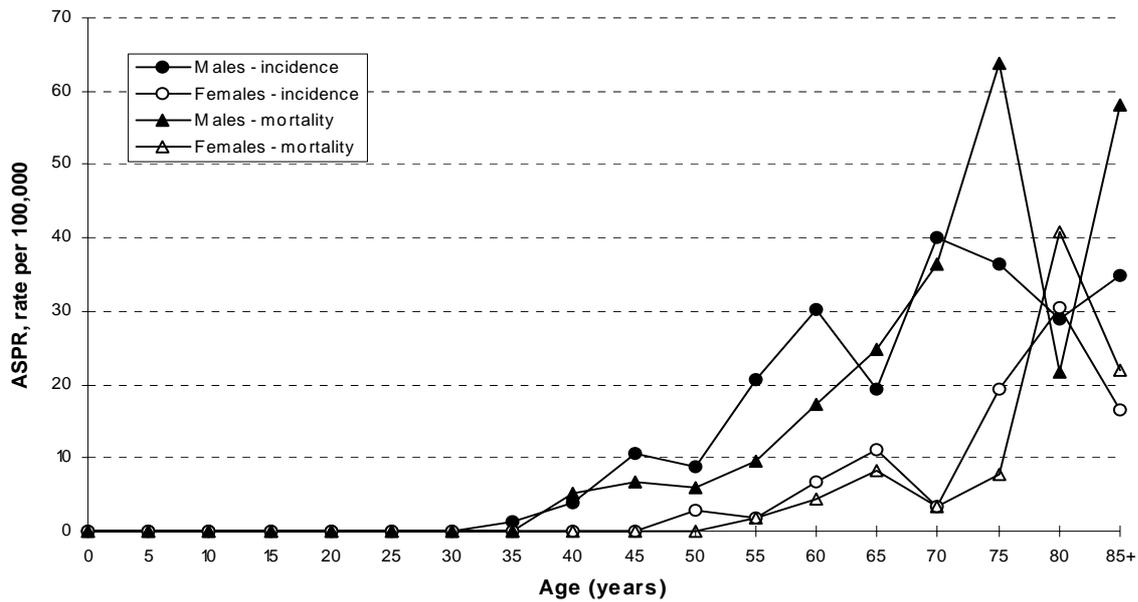
Myeloma is predominantly a disease of older people. Incidence and mortality rates for males are often similar to those seen among females, which is unusual.

Figure 23. Age-specific myeloma incidence and mortality rates, Western Australia, 2005.



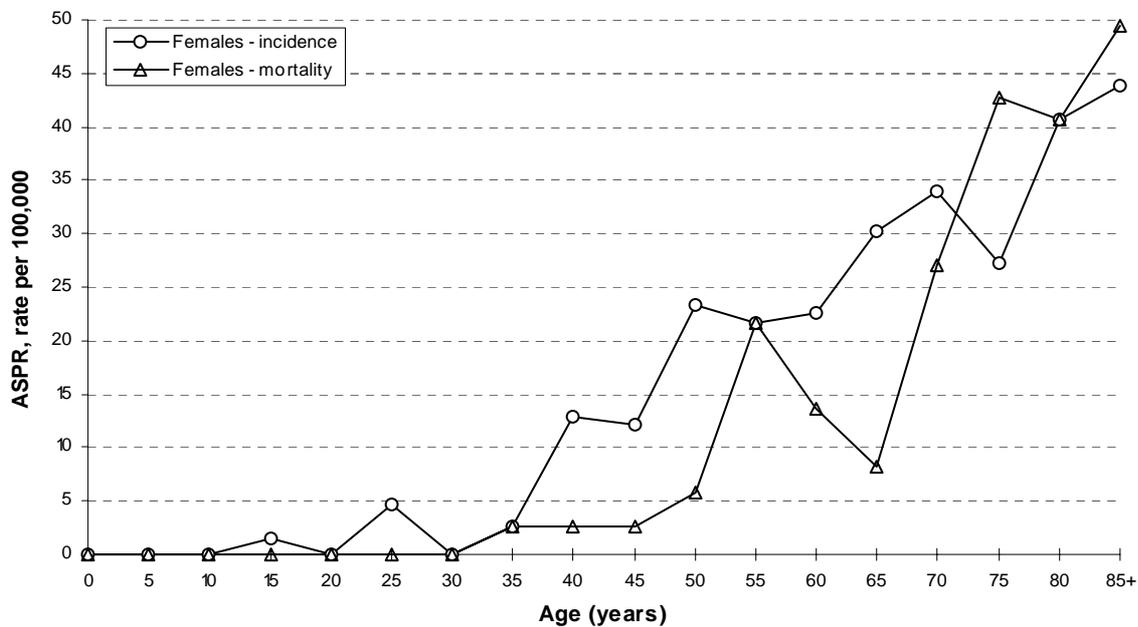
## Oesophageal cancer

Figure 24. Age-specific oesophageal cancer incidence and mortality rates, Western Australia, 2005.



## Ovarian cancer

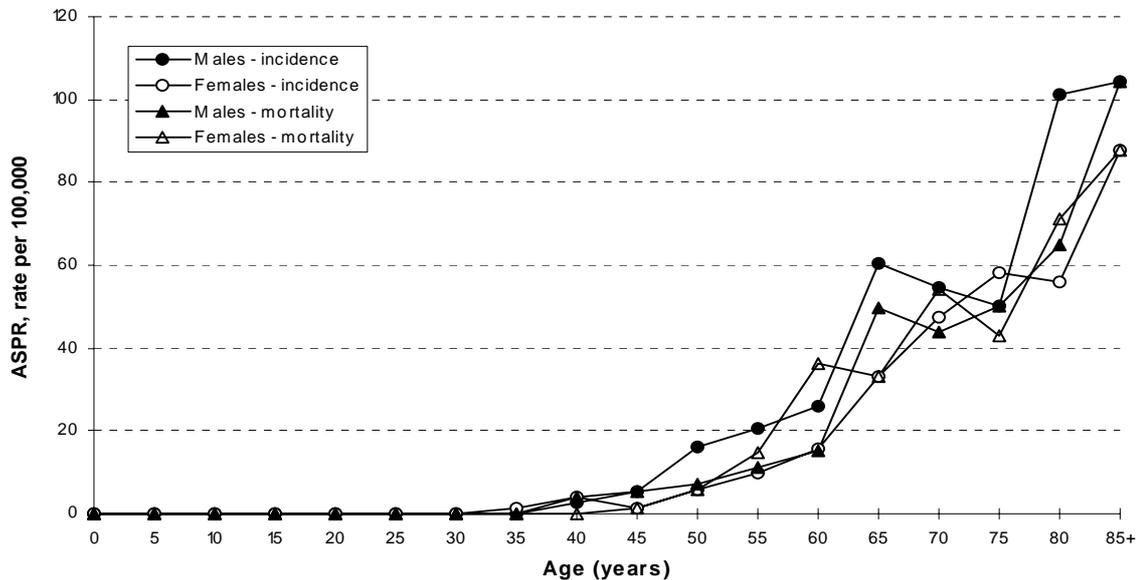
Figure 25. Age-specific ovarian cancer incidence and mortality rates, Western Australia, 2005.



## Pancreatic cancer

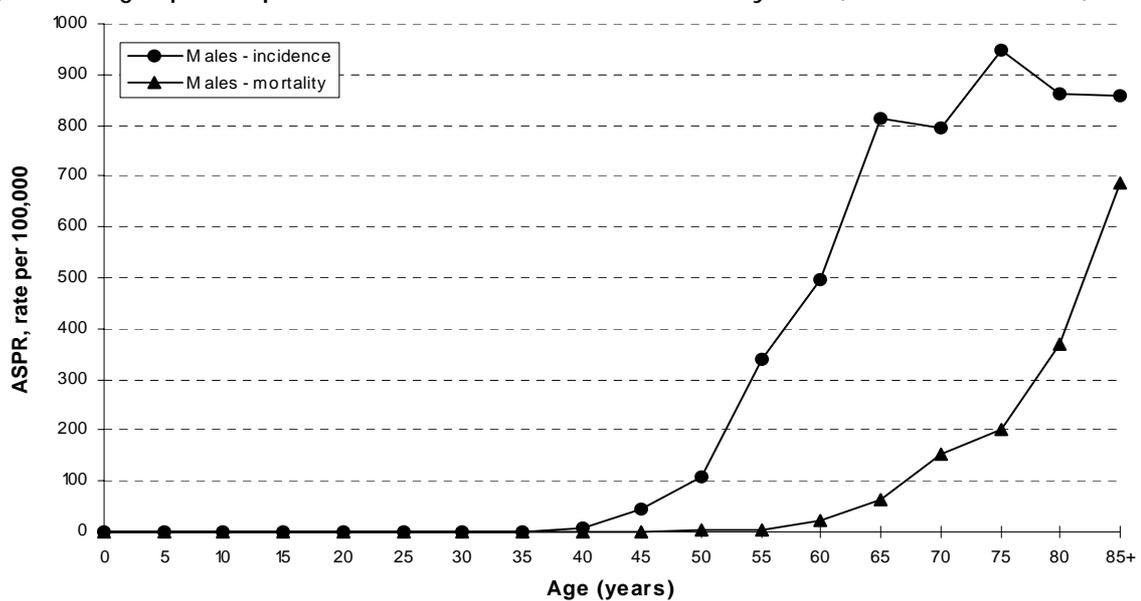
Both incidence and mortality rates for pancreatic cancer among males are unusually similar to those seen among females; female incidence is often higher than incidence in males at the same age but the 2005 data do not show this pattern.

Figure 26. Age-specific pancreatic cancer incidence and mortality rates, Western Australia, 2005.



## Prostate cancer

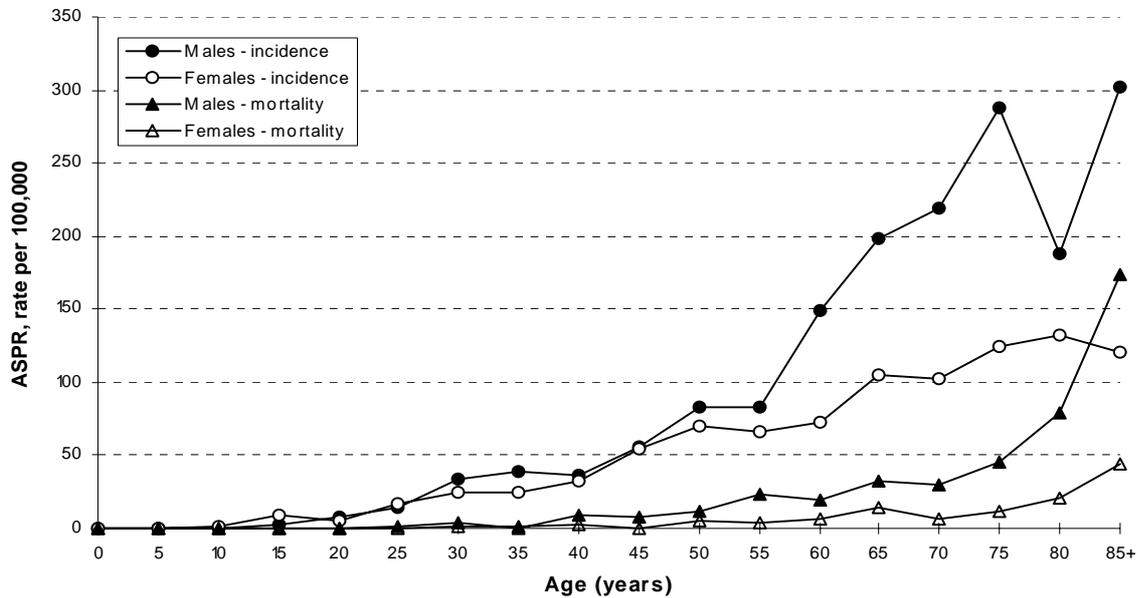
Figure 27. Age-specific prostate cancer incidence and mortality rates, Western Australia, 2005.



## Melanoma

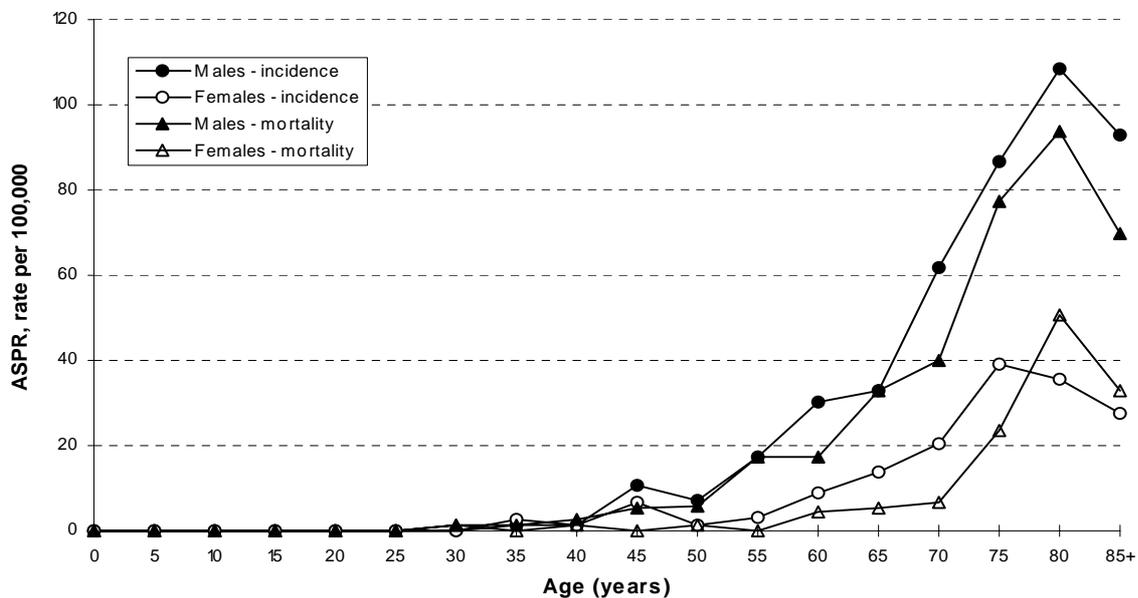
Skin melanoma incidence rates are similar in males and females until the 40-49 age range, with male rates up to double female rates in the oldest age groups.

Figure 28. Age-specific melanoma incidence and mortality rates, Western Australia, 2005.



## Stomach cancer

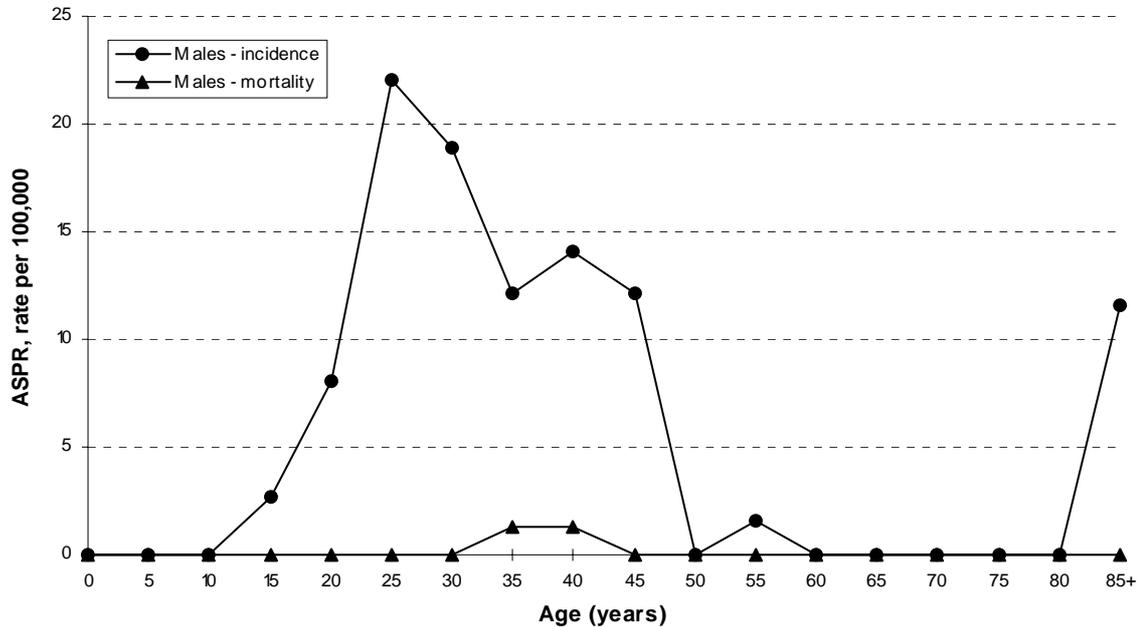
Figure 29. Age-specific stomach cancer incidence and mortality rates, Western Australia, 2005.



## Testicular cancer

Testicular cancer is predominantly a disease of men under the age of 45 years, and survival is better than for most other forms of cancer.

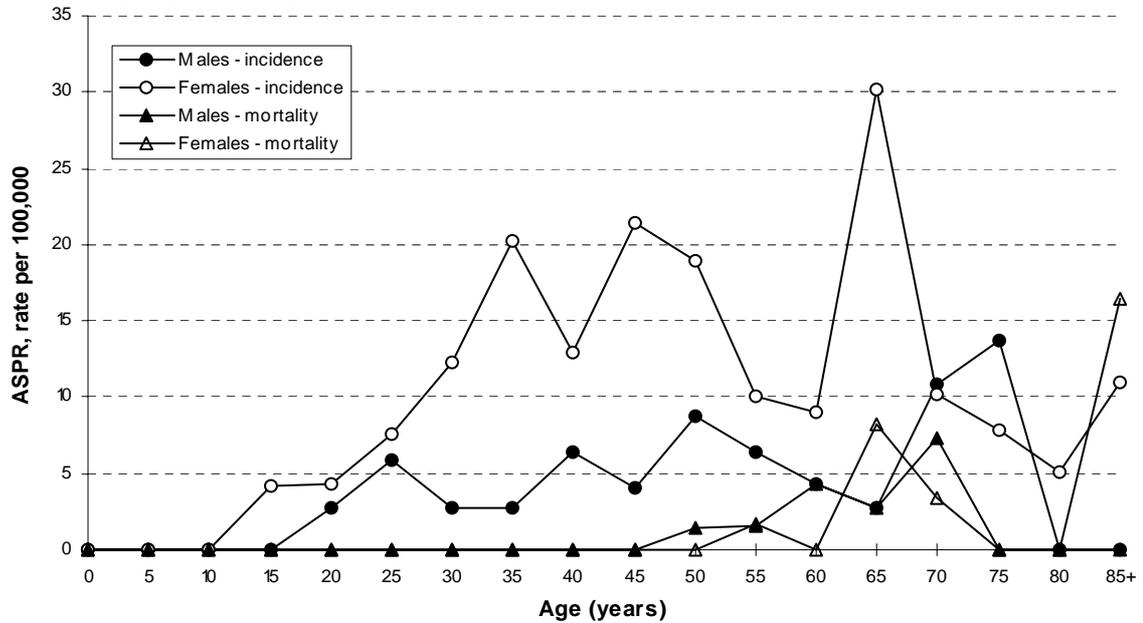
Figure 30. Age-specific testicular cancer incidence and mortality rates, Western Australia, 2005.



## Thyroid cancer

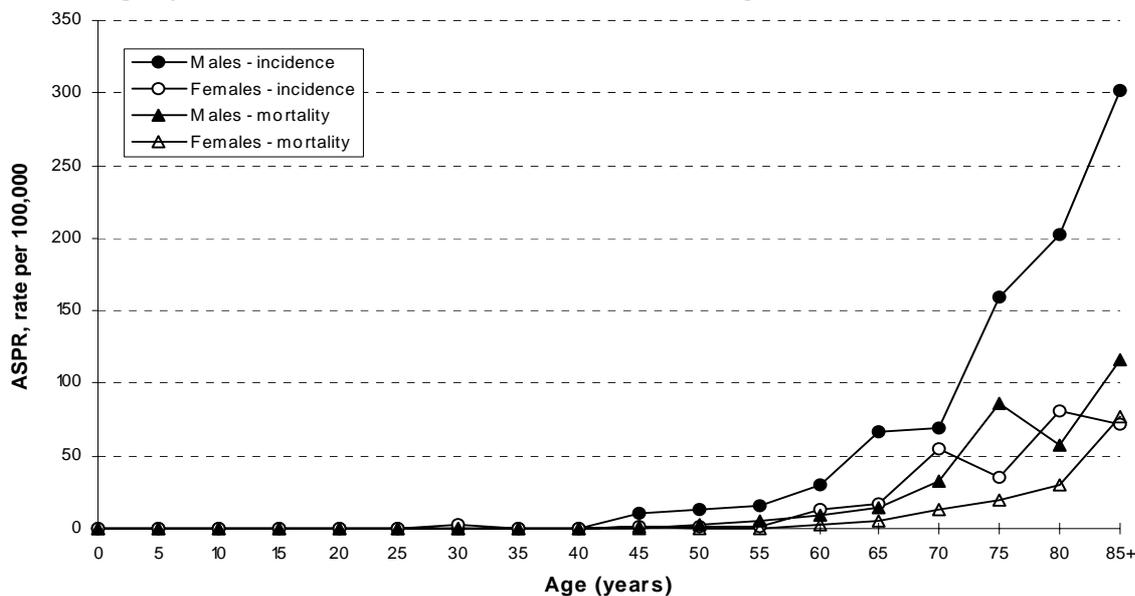
Thyroid cancer is more common among women than men throughout life, but male and female mortality rates are similar.

Figure 31. Age-specific thyroid cancer incidence and mortality rates, Western Australia, 2005.



## Bladder cancer

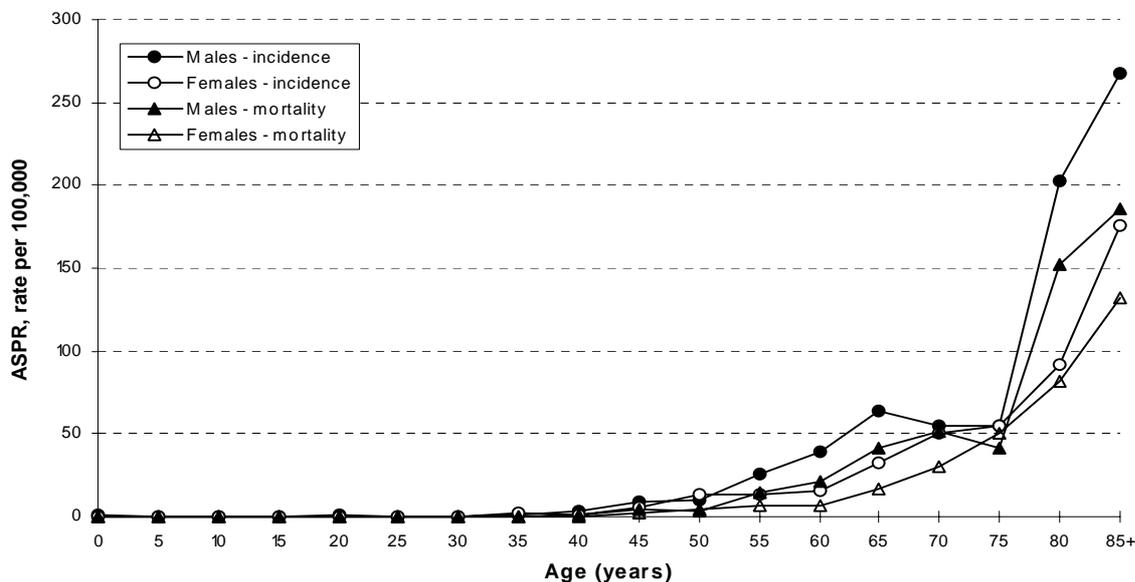
Figure 32. Age-specific bladder cancer incidence and mortality rates, Western Australia, 2005.



## Cancers of unknown primary site

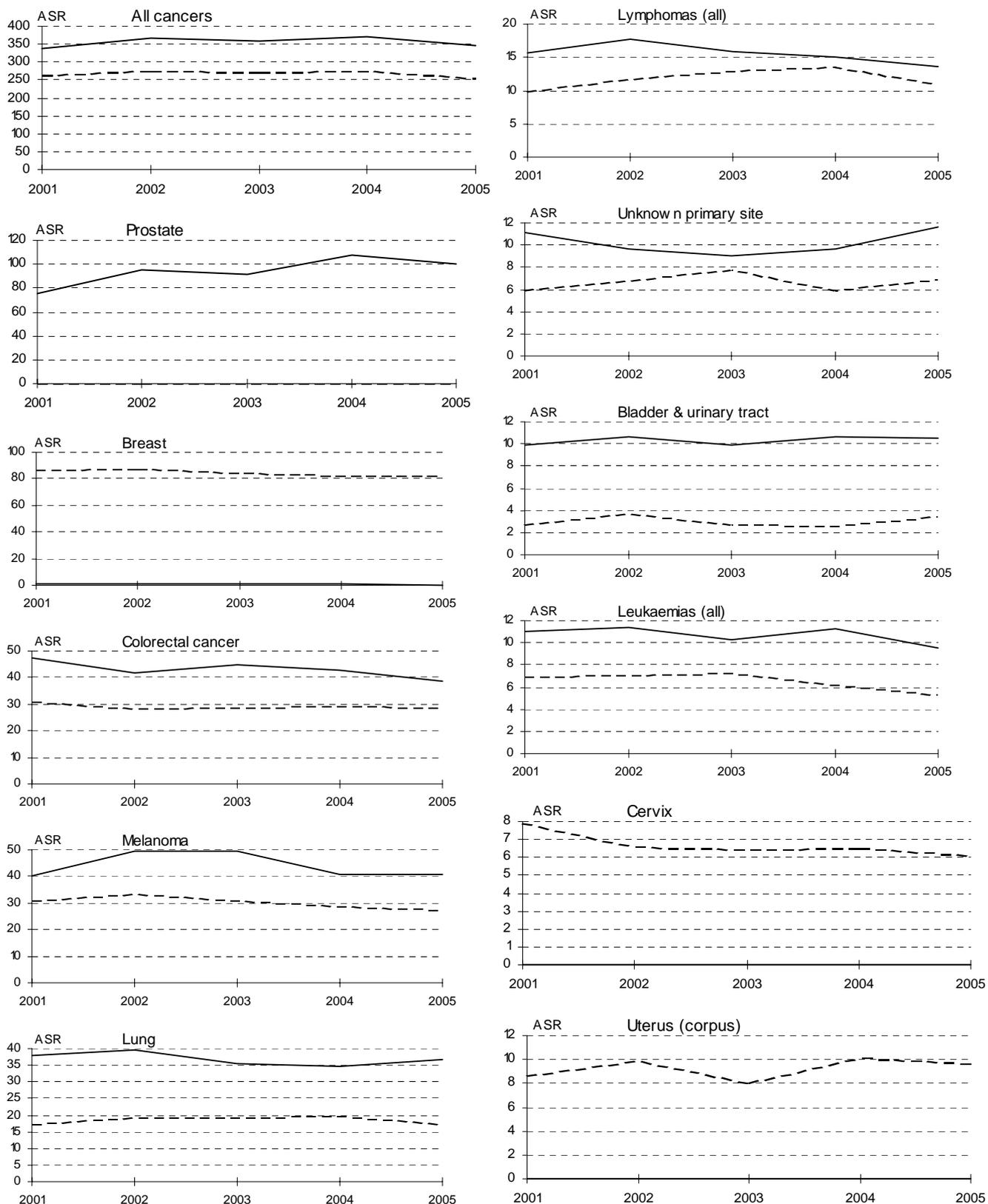
While cancers of unknown primary site are more common among males than among females in most age groups, male and female mortality rates are usually similar.

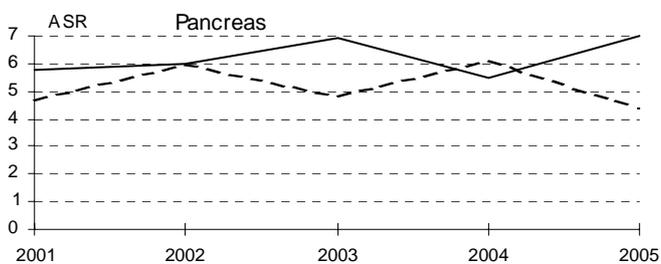
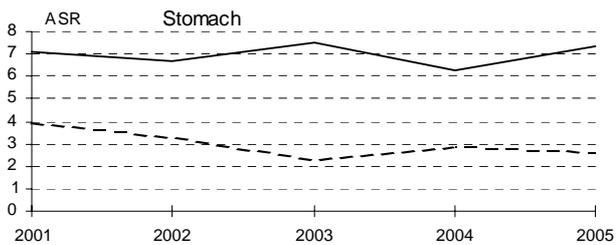
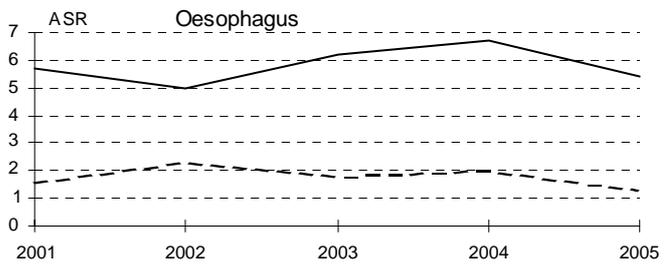
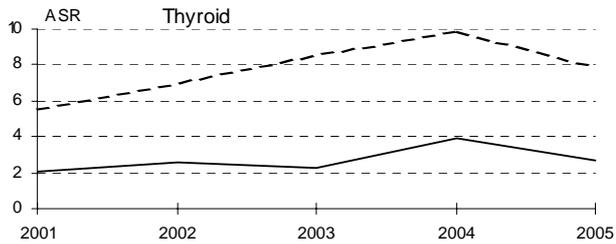
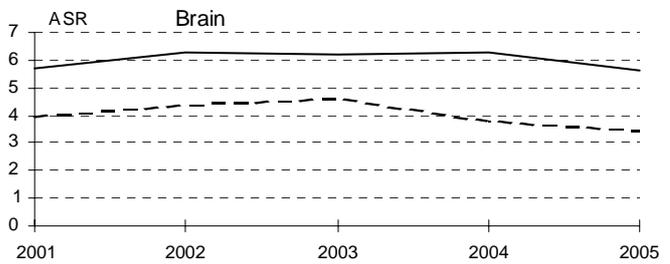
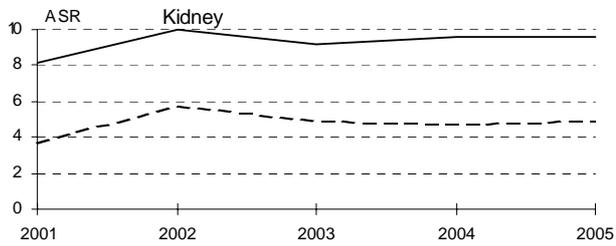
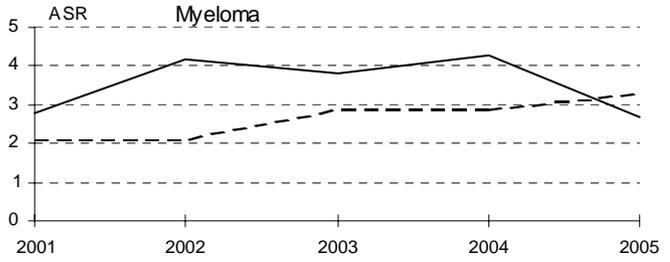
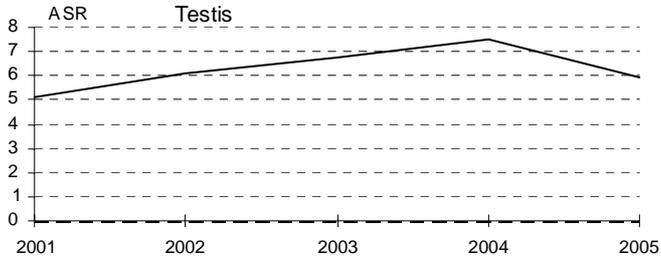
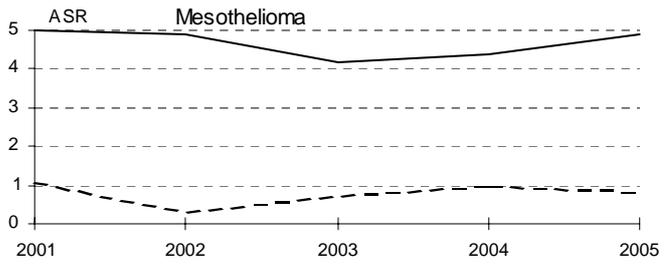
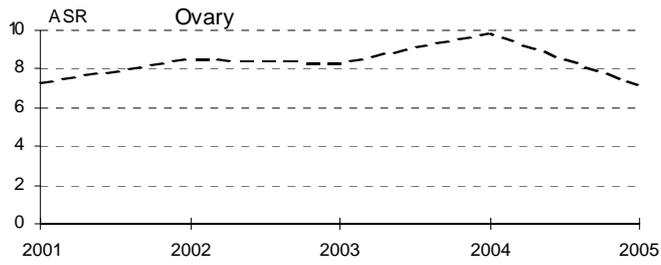
Figure 33. Age-specific unknown primary site cancer incidence and mortality rates, Western Australia, 2005.



### 3.5 Cancer incidence by year, 2001-2005

Figure 34. Selected cancers, Western Australia, 2001-2005: trends in incidence rates for males (—) and females (----)





## 4. References

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### - Notes -

**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 National Cancer Statistics Clearing House (NCSCCH) (a central cancer data collection for the whole of Australia based at the Australian Institute of Health and Welfare 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 acts with the delegated authority of the Executive Director of Public Health with respect to the Health (Notification of Cancer) Regulations 1981. These, as amended in February 1996, 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 benign CNS tumours (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 Unit in the Health Information Centre. 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

The Registry still maintains paper records for individual cases, although as pathology reports are increasingly being received in electronic form, on-screen-only coding is still being considered. A computer software re-engineering process is currently in progress.

New registrations and updates are made on a locally-designed computerized multi-user database installed on an IBM-compatible microcomputer network. In general, cancer cases are recorded with one demographic record for each person with a separate, linked, record for each tumour. Records which are incomplete or which are found to be inaccurate in the light of new information are progressively updated, and the data are thus subject to continual enhancement 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),<sup>a</sup> 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).<sup>b</sup>

WACR now uses the ICDO-3-based table as promulgated by the International Association of Cancer Registries. xxWebsite address. 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 differently,

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

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

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.

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

<sup>b</sup> 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<sup>a</sup> Clark *et al* 1975<sup>b</sup>), 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,<sup>5</sup> 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 Confidentiality of Health Information Committee (CHIC) which is responsible to the Minister for Health.

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 1.9 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

Western Australia is the only Australian State in which there is 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. This Report contains related material in Section 3.2.

These findings are being made available 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 these data items are to be considered when choosing potential replacement systems. It is also likely that changes to the existing PAS may be sought if delays in its replacement are extensive.

## 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) <sup>a</sup>
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 $n$ ). In some tables, "-" indicates no data, "*" indicates a risk of less than 1 in 1,000.
TD%	Percentage of diagnoses made on basis of tissue examination (histology, haematology or cytology).

<sup>a</sup> 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<sup>a</sup> 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<sup>b</sup>). 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:

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

where  $w_i$  is the World Standard Population<sup>b</sup> 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<sup>c</sup>) 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.

<sup>a</sup> Rothman KJ (1986) *Modern epidemiology*. Little, Brown & Company, Boston.

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

<sup>c</sup> 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.* <sup>a</sup>

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.

<sup>a</sup> 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 2005 rates in this report

Age	Males	(%)	Females	(%)	Total	(%)
0- 4	63703	6.3	60610	6.0	124313	6.2
5- 9	68477	6.8	64930	6.5	133407	6.6
10-14	72452	7.2	69102	6.9	141554	7.0
15-19	74469	7.4	70639	7.0	145108	7.2
20-24	74144	7.4	69951	7.0	144095	7.2
25-29	68289	6.8	65875	6.6	134164	6.7
30-34	74261	7.4	72913	7.3	147174	7.3
35-39	74558	7.4	74063	7.4	148621	7.4
40-44	77746	7.7	77324	7.7	155070	7.7
45-49	74451	7.4	74656	7.4	149107	7.4
50-54	68219	6.8	68411	6.8	136630	6.8
55-59	62731	6.2	60150	6.0	122881	6.1
60-64	46189	4.6	44260	4.4	90449	4.5
65-69	36311	3.6	36391	3.6	72702	3.6
70-74	27421	2.7	29475	2.9	56896	2.8
75-79	21936	2.2	25690	2.6	47626	2.4
80-84	13832	1.4	19667	2.0	33499	1.7
85 +	8609	0.9	18208	1.8	26817	1.3
<b>TOTAL</b>	<b>1007798</b>	<b>(100)</b>	<b>1002315</b>	<b>(100)</b>	<b>2010113</b>	<b>(100)</b>

(Data from Australian Bureau of Statistics as collated by Information Collection & Management, 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, comprising 7 Regions. Overall, the area is divided into 34 Health Districts (HD). Each Health District (HD) lies entirely within an Area Health Service (AHS) or a Health Region (HR) (for Country areas). Areas have been re-named, and there have been boundary changes. These changes have been incorporated in data files and in the population files used for calculation of incidence and mortality rates in this report.

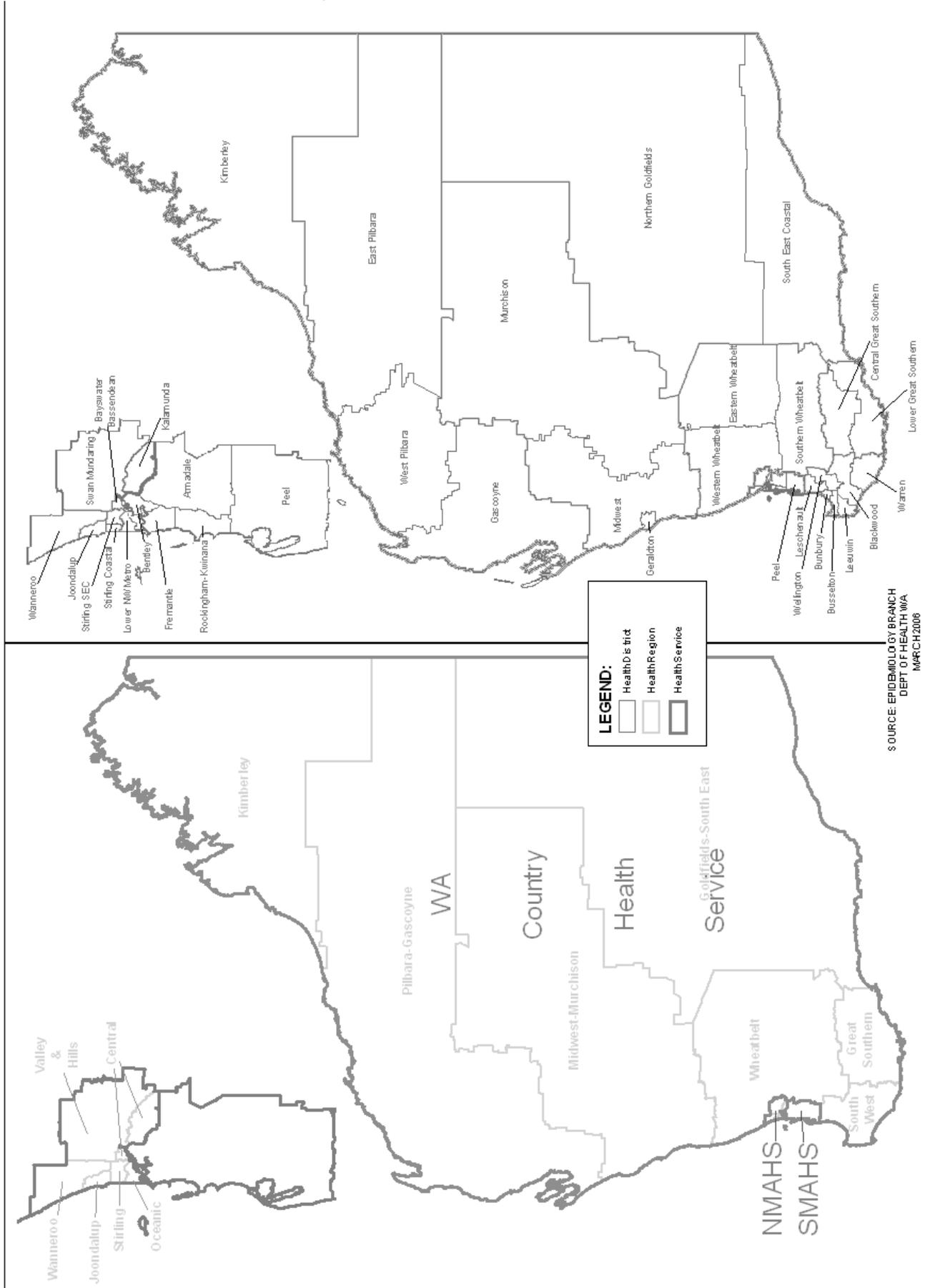
The table and maps below should assist comparison of boundaries and area names with those used in previous reports.

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

<b>CHS Kimberley HR</b>	<b>CHS Goldfields HR</b>	<b>North Metro AHS</b>
Kimberley HD	Northern Goldfields HD	NMAHS Central HD
<b>CHS Pilbara HR</b>	South East Coastal HD	NMAHS Stirling HD
East Pilbara HD	<b>CHS Great Southern HR</b>	NMAHS Oceanic HD
West Pilbara HD	Central Great Southern HD	NMAHS Valley and Hills HD
<b>CHS Midwest HR</b>	Lower Great Southern HD	NMAHS Joondalup HD
Gascoyne HD	<b>CHS South West HR</b>	NMAHS Wanneroo HD
Geraldton HD	Blackwood HD	
Midwest HD	Bunbury HD	<b>South Metro AHS</b>
Murchison HD	Busselton HD	SMAHS Armadale HD
<b>CHS Wheatbelt HR</b>	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 National Cancer Statistics Clearing House at the Australian Institute of Health and Welfare, for the purposes of improving data quality and consistency. Data are released to the N.C.S.C.H. 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 Confidentiality of Health Information 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 Confidentiality of Health Information 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 current Code of Practice of the Confidentiality of Health Information Committee. This Code includes requirements for written protocols, signed confidentiality declarations, contact with treating doctors prior to any contact with named individuals, and consent. The approach of the Committee is summarized by the Code's general statement -

"Names are only released by the Confidentiality of Health Information Committee on behalf of the Commissioner for medical and public health research which is intended to provide important benefit for the health care of the community and which adheres to stringent guidelines for preserving confidentiality and privacy."

## Appendix 2E. Cancer notification regulations

### 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 - Interpretation.
  - (a) all *in situ* 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.
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. Notification by pathologist.  
(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.
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 - Notification by radiation oncologist.
  - (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.
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. Executive Director of Public Health may require further particulars.  
(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.
9. (1) A person who contravenes a provision of the regulations specified in the Table to this subregulation commits an offence.

(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.

As in our last two reports, 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)

	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
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.

## 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, 2005

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		
<b>Lip. gum &amp; mouth (C000-C069) (not C01 C02)</b>																											
M						2	4	7	8	11	10	15	12	4	7	7	5	6		<b>98</b>	<b>7.0</b>	5.6-8.5	99.0	0.7	140	10.1 (8.1-12.2)	
						2.9	5.4	9.4	10.3	14.8	14.7	23.9	26.0	11.0	25.5	31.9	36.1	69.7									
F							2	1	2	4	3	3	5	1	8	3	1	7		<b>40</b>	<b>2.6</b>	1.7-3.4	98.0	0.3	320	3.8 (2.6-5.0)	
							2.7	1.4	2.6	5.4	4.4	5.0	11.3	2.7	27.1	11.7	5.1	38.4									
<b>Tongue (C010-C029)</b>																											
M										3	3	3	2	2	5	2				<b>20</b>	<b>1.4</b>	0.8-2.1	100.0	0.2	485	2.0 (1.1-3.0)	
										4.0	4.4	4.8	4.3	5.5	18.2	9.1											
F							1	1	3	1	5			2	2	3		1		<b>19</b>	<b>1.3</b>	0.7-1.8	100.0	0.1	697	1.8 (1.0-2.6)	
							1.4	1.3	4.0	1.5	8.3			5.5	6.8	11.7		5.5									
<b>Parotid gland (C070-C079)</b>																											
M									2		1		1				2			<b>6</b>	<b>0.4</b>	0.1-0.7	100.0	0.0	3225	0.6 (0.1-1.1)	
									2.6		1.5		2.2				14.5										
F			1		1	1				2				1	1		1	1		<b>9</b>	<b>0.7</b>	0.2-1.2	100.0	0.1	1524	0.9 (0.3-1.4)	
			1.4		1.5	1.4				2.7				2.7	3.4		5.1	5.5									
<b>Major salivary glands (not parotid) (C080-C089)</b>																											
M								1					1			1				<b>3</b>	<b>0.2</b>	0 - 0.5	100.0	0.0	5705	0.3 (0 - 0.7)	
								1.3					2.2			4.6											
F							1				2	1								<b>4</b>	<b>0.3</b>	0.0-0.6	100.0	0.0	3358	0.4 (0.0-0.8)	
							1.4				2.9	1.7															
<b>Pharynx (C090-C149) (not C11)</b>																											
M								2	1	8	5	8	7	2	2	2	1			<b>38</b>	<b>2.8</b>	1.9-3.7	100.0	0.3	319	3.7 (2.5-4.8)	
								2.7	1.3	10.7	7.3	12.8	15.2	5.5	7.3	9.1	7.2										
F									1	1			1	2		3	2			<b>10</b>	<b>0.6</b>	0.2-1.0	90.0	0.1	1895	1.0 (0.4-1.6)	
									1.3	1.5			2.3	5.5		11.7	10.2										
<b>Nasopharynx (C110-C119)</b>																											
M						1		1	1		2		3							<b>8</b>	<b>0.7</b>	0.2-1.2	100.0	0.1	1480	0.8 (0.2-1.3)	
						1.5		1.3	1.3		2.9		6.5														
F																				<b>0</b>							
<b>Oesophagus (C150-C159)</b>																											
M							1	3	8	6	13	14	7	11	8	4	3			<b>78</b>	<b>5.5</b>	4.3-6.7	97.0	0.7	148	8.0 (6.2-9.8)	
							1.3	3.9	10.7	8.8	20.7	30.3	19.3	40.1	36.5	28.9	34.8										
F										2	1	3	4	1	5	6	3			<b>25</b>	<b>1.3</b>	0.7-1.9	92.0	0.1	777	2.3 (1.4-3.3)	
										2.9	1.7	6.8	11.0	3.4	19.5	30.5	16.5										
<b>Stomach (C160-C169)</b>																											
M							1	1	8	5	11	14	12	17	19	15	8			<b>111</b>	<b>7.2</b>	5.8-8.6	95.0	0.8	123	12.3 (10.0-14.6)	
							1.3	1.3	10.7	7.3	17.5	30.3	33.0	62.0	86.6	108.4	92.9										
F								2	1	5	1	2	4	5	6	10	7	5		<b>48</b>	<b>2.7</b>	1.9-3.6	94.0	0.3	342	4.6 (3.3-5.9)	
								2.7	1.3	6.7	1.5	3.3	9.0	13.7	20.4	38.9	35.6	27.5									
<b>Small intestine (C170-C179)</b>																											
M						1		1	2	2		3	1	5	1	1	1	1		<b>19</b>	<b>1.4</b>	0.8-2.1	95.0	0.2	617	1.9 (1.1-2.8)	
						1.5		1.3	2.6	2.7		4.8	2.2	13.8	3.6	4.6	7.2	11.6									
F								1	1			1	3	2	2	2	2	2		<b>16</b>	<b>1.0</b>	0.5-1.5	88.0	0.1	856	1.5 (0.8-2.3)	
								1.4	1.3			1.7	6.8	5.5	6.8	7.8	10.2	11.0									



### Appendix 3A. Cancer incidence, Western Australia, 2005

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		3	1	11	34	35	68	82	108	127	78	47		<b>595</b>	<b>37.9</b>	34.8-41.1	87.0	4.5	23	67.4 (62.0-72.9)	
						1.5		4.0	1.3	14.8	49.8	55.8	147.2	225.8	393.9	579.0	563.9	545.9									
F					1			3	6	8	15	26	43	35	49	57	44	25		<b>312</b>	<b>18.4</b>	16.2-20.6	83.0	2.2	45	30.0 (26.7-33.4)	
					1.4			4.1	7.8	10.7	21.9	43.2	97.2	96.2	166.2	221.9	223.7	137.3									
Thymus (C370-C379)																											
M											1		1							<b>3</b>	<b>0.2</b>	0 - 0.4	100.0	0.0	5509	0.3 (0 - 0.7)	
											1.5		2.2														
F														1	1					<b>2</b>	<b>0.2</b>	0 - 0.4	100.0	0.0	3257	0.2 (0 - 0.5)	
														2.7	3.4												
Pleura, heart & mediastinum (C380-C389)																											
M				1	1							1	1					1		<b>5</b>	<b>0.4</b>	0.0-0.8	100.0	0.0	3101	0.5 (0.1-0.9)	
				1.3	1.3							1.6	2.2					7.2									
F											1				1					<b>2</b>	<b>0.1</b>	0 - 0.3	100.0	0.0	4120	0.2 (0 - 0.5)	
											1.5				3.4												
Bones, joints & articular cartilages (C400-C419)																											
M		1		2	1	1			1			2	1							<b>9</b>	<b>0.9</b>	0.3-1.5	100.0	0.1	1471	0.8 (0.3-1.4)	
		1.5		2.7	1.3	1.5			1.3			3.2	2.2														
F			1	1			1				1				1	1		1		<b>7</b>	<b>0.5</b>	0.1-1.0	86.0	0.0	2201	0.7 (0.2-1.2)	
			1.4	1.4			1.4				1.5				3.4	3.9		5.5									
Skin (melanoma only) (C440-C449; M-8720 - 8790)																											
M				2	6	10	25	29	28	41	57	52	69	72	60	63	26	26		<b>566</b>	<b>41.0</b>	37.5-44.5	99.0	4.6	22	59.3 (54.4-64.3)	
				2.7	8.1	14.6	33.7	38.9	36.0	55.1	83.6	82.9	149.4	198.3	218.8	287.2	188.0	302.0									
F			1	6	4	11	18	18	25	41	48	40	32	38	30	32	26	22		<b>392</b>	<b>27.6</b>	24.7-30.5	100.0	2.9	35	37.8 (34.0-41.5)	
			1.4	8.5	5.7	16.7	24.7	24.3	32.3	54.9	70.2	66.5	72.3	104.4	101.8	124.6	132.2	120.8									
Skin (not melanoma/SCC/BCC) (C440-C449)																											
M						1		1		4	2	3	2	2	4	7	9	4		<b>39</b>	<b>2.4</b>	1.6-3.1	100.0	0.2	497	4.5 (3.1-5.9)	
						1.5		1.3		5.4	2.9	4.8	4.3	5.5	14.6	31.9	65.1	46.5									
F		1				1		4	1	2	1		2		1	3	3	7		<b>26</b>	<b>1.5</b>	0.9-2.2	96.0	0.1	918	2.4 (1.5-3.4)	
		1.5				1.5		5.4	1.3	2.7	1.5		4.5		3.4	11.7	15.3	38.4									
Mesothelioma (M905; ICD10 C45)																											
M							1	1	2	4	10	17	11	8	13	8				<b>75</b>	<b>4.9</b>	3.8-6.1	97.0	0.6	166	8.4 (6.5-10.4)	
							1.3	1.3	2.9	6.4	21.7	46.8	40.1	36.5	94.0	92.9											
F								1	1	4	1	1	3	1	2					<b>14</b>	<b>0.9</b>	0.4-1.4	100.0	0.1	812	1.3 (0.6-2.0)	
								1.3	1.5	6.7	2.3	2.7	10.2	3.9	10.2												
Kaposi sarcoma (M914; ICD10 C46)																											
M									1	1							2			<b>4</b>	<b>0.2</b>	0 - 0.4	100.0	0.0	6537	0.4 (0.0-0.9)	
									1.5	1.6							14.5										
F																	1			<b>1</b>	<b>0.0</b>	0 - 0.1	100.0	0.0	*	0.1 (0 - 0.3)	
																	5.1										
Nervous system, peripheral & autonomic (C470-C479)																											
M							1	1							1					<b>3</b>	<b>0.2</b>	0 - 0.4	100.0	0.0	7607	0.3 (0 - 0.7)	
							1.3	1.3							4.6												
F																				<b>1</b>	<b>0.1</b>	0 - 0.4	100.0	0.0	*	0.1 (0 - 0.3)	



### Appendix 3A. Cancer incidence, Western Australia, 2005

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	
<b>Other male genital (C630-C639)</b>																										
M															1					<b>1</b>	<b>0.1</b>	0 - 0.2	100.0	0.0	5485	0.1 (0 - 0.4)
															3.6											
<b>Kidney (C640-C649)</b>																										
M						1	4	5	6	4	12	19	17	21	17	20	10	7		<b>143</b>	<b>9.8</b>	8.2-11.5	90.0	1.2	87	15.2 (12.6-17.7)
						1.5	5.4	6.7	7.7	5.4	17.6	30.3	36.8	57.8	62.0	91.2	72.3	81.3								
F	1	1			1	1		1	3	5	6	7	15	4	10	8	4	7		<b>74</b>	<b>5.2</b>	3.9-6.5	85.0	0.6	171	7.1 (5.5-8.8)
	1.6	1.5			1.4	1.5		1.4	3.9	6.7	8.8	11.6	33.9	11.0	33.9	31.1	20.3	38.4								
<b>Bladder &amp; urinary tract (C650-C689)</b>																										
M										8	9	10	14	24	19	35	28	26		<b>173</b>	<b>10.6</b>	9.0-12.3	98.0	1.0	98	20.2 (17.1-23.2)
										10.7	13.2	15.9	30.3	66.1	69.3	159.6	202.4	302.0								
F						2			1	1	1	6	6	16	9	16	13			<b>71</b>	<b>3.6</b>	2.7-4.6	96.0	0.5	219	6.7 (5.1-8.3)
						2.7			1.3	1.5	1.7	13.6	16.5	54.3	35.0	81.4	71.4									
<b>Eye &amp; lacrimal gland (C690-C699)</b>																										
M	1	1									3	2	1	3		2	1			<b>14</b>	<b>1.1</b>	0.5-1.8	71.0	0.1	951	1.4 (0.7-2.2)
	1.6	1.5									4.4	3.2	2.2	8.3		9.1	7.2									
F						1	1						1	1	2		1			<b>7</b>	<b>0.5</b>	0.1-0.9	43.0	0.1	1378	0.7 (0.2-1.2)
						1.4	1.4						2.3	2.7	6.8		5.1									
<b>Meninges (cerebral &amp; spinal) (C700-C709)</b>																										
M																				<b>0</b>						
F																1				<b>1</b>	<b>0.0</b>	0 - 0.1	100.0	0.0	*	0.1 (0 - 0.3)
																3.9										
<b>Brain (C710-C719)</b>																										
M	2		1	2		2	3	1	3	7	6	5	8	15	9	6		1		<b>71</b>	<b>5.8</b>	4.4-7.2	86.0	0.7	146	7.2 (5.5-8.9)
	3.1		1.4	2.7		2.9	4.0	1.3	3.9	9.4	8.8	8.0	17.3	41.3	32.8	27.4		11.6								
F	1	1			1	3	1	2	2	1	4	6	9	2	4	5	4	6		<b>52</b>	<b>3.7</b>	2.6-4.8	83.0	0.4	277	5.0 (3.6-6.3)
	1.6	1.5			1.4	4.6	1.4	2.7	2.6	1.3	5.8	10.0	20.3	5.5	13.6	19.5	20.3	33.0								
<b>Spinal cord &amp; cranial nerves (C720-C729)</b>																										
M										1					1					<b>2</b>	<b>0.2</b>	0 - 0.4	100.0	0.0	4882	0.2 (0 - 0.5)
										1.3					2.8											
F						1														<b>1</b>	<b>0.1</b>	0 - 0.2	100.0	0.0	*	0.1 (0 - 0.3)
						1.4																				
<b>Thyroid gland (C730-C739)</b>																										
M					2	4	2	2	5	3	6	4	2	1	3	3				<b>37</b>	<b>2.9</b>	2.0-3.9	100.0	0.3	348	3.7 (2.5-4.9)
					2.7	5.9	2.7	2.7	6.4	4.0	8.8	6.4	4.3	2.8	10.9	13.7										
F					3	3	5	9	15	10	16	13	6	4	11	3	2	1	2	<b>103</b>	<b>8.3</b>	6.7-10.0	99.0	0.8	124	10.1 (8.2-12.1)
					4.2	4.3	7.6	12.3	20.3	12.9	21.4	19.0	10.0	9.0	30.2	10.2	7.8	5.1	11.0							
<b>Adrenal gland (C740-C749)</b>																										
M										1										<b>1</b>	<b>0.1</b>	0 - 0.2	100.0	0.0	*	0.1 (0 - 0.3)
										1.3																
F	1									1	1				1					<b>4</b>	<b>0.4</b>	0 - 0.9	100.0	0.0	2550	0.4 (0.0-0.8)
	1.6									1.3	1.5				3.4											
<b>Endocrine glands (not adrenal) (C750-C759)</b>																										
M						1											1			<b>2</b>	<b>0.2</b>	0 - 0.4	50.0	0.0	*	0.2 (0 - 0.5)
						1.5											7.2									
F																				<b>0</b>						



### Appendix 3A. Cancer incidence, Western Australia, 2005

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	
<b>LEUKAEMIAS</b>																										
Leukaemias, NOS/unclassifiable																										
M		1						1							1			1		<b>4</b>	<b>0.4</b>	0 - 0.7	100.0	0.0	3099	0.5 (0.0-1.0)
		1.5						1.3							3.6			11.6								
F															1		1	1		<b>3</b>	<b>0.1</b>	0 - 0.3	67.0	0.0	5896	0.3 (0 - 0.6)
															3.4		5.1	5.5								
Leukaemias, lymphoid, all																										
M	7	4	4	1		1		1	2	1	5	11	5	7	5	8	4			<b>66</b>	<b>5.9</b>	4.3-7.5	97.0	0.5	194	6.7 (5.1-8.3)
	11.0	5.8	5.5	1.3		1.5		1.3	2.6	1.3	7.3	17.5	10.8	19.3	18.2	36.5	28.9									
F			1		1	1				1	2	3	2	4	4	8	6	5		<b>38</b>	<b>2.2</b>	1.4-3.0	92.0	0.2	469	3.6 (2.5-4.8)
			1.4		1.4	1.5				1.3	2.9	5.0	4.5	11.0	13.6	31.1	30.5	27.5								
Leukaemias, lymphoid, acute																										
M	7	4	4	1				1			1	2				1	2			<b>23</b>	<b>2.9</b>	1.6-4.2	96.0	0.1	674	2.3 (1.4-3.3)
	11.0	5.8	5.5	1.3				1.3			1.5	3.2				4.6	14.5									
F			1		1	1				1		1			1		1	1		<b>8</b>	<b>0.6</b>	0.1-1.1	100.0	0.1	1854	0.8 (0.2-1.3)
			1.4		1.4	1.5				1.3		1.7			3.4		5.1	5.5								
Leukaemias, lymphoid, chronic																										
M									2	1	2	8	5	6	4	7	2			<b>37</b>	<b>2.5</b>	1.7-3.3	97.0	0.3	326	3.8 (2.5-5.0)
									2.6	1.3	2.9	12.8	10.8	16.5	14.6	31.9	14.5									
F											2	1	2	4	3	8	3	4		<b>27</b>	<b>1.4</b>	0.8-2.0	89.0	0.2	661	2.6 (1.6-3.6)
											2.9	1.7	4.5	11.0	10.2	31.1	15.3	22.0								
Leukaemias, lymphoid, other/NOS																										
M						1					2	1		1	1					<b>6</b>	<b>0.5</b>	0.1-0.9	100.0	0.1	1615	0.6 (0.1-1.1)
						1.5					2.9	1.6		2.8	3.6											
F												1					2			<b>3</b>	<b>0.1</b>	0 - 0.3	100.0	0.0	*	0.3 (0 - 0.6)
												1.7					10.2									
Leukaemias, myeloid, all																										
M	2			1	1		1	2	2	2	3	4	9	6	3	7	8	4		<b>55</b>	<b>4.0</b>	2.8-5.1	95.0	0.4	275	5.9 (4.3-7.5)
	3.1			1.3	1.3		1.3	2.7	2.6	2.7	4.4	6.4	19.5	16.5	10.9	31.9	57.8	46.5								
F	4			1	1	1	3	3	1	2	2	4	2	5	2	2	5	5		<b>43</b>	<b>3.4</b>	2.2-4.5	98.0	0.3	347	4.1 (2.9-5.3)
	6.6			1.4	1.4	1.5	4.1	4.1	1.3	2.7	2.9	6.7	4.5	13.7	6.8	7.8	25.4	27.5								
Leukaemias, myeloid, acute																										
M	1						1	2		2	3	3	8	5	3	2	6			<b>36</b>	<b>2.6</b>	1.7-3.6	94.0	0.3	337	3.7 (2.5-4.9)
	1.6						1.3	2.7		2.7	4.4	4.8	17.3	13.8	10.9	9.1	43.4									
F	4				1	1	2	1		2	2	3	2	3	1	1	2	2		<b>27</b>	<b>2.4</b>	1.4-3.5	100.0	0.2	496	2.6 (1.6-3.6)
	6.6				1.4	1.5	2.7	1.4		2.7	2.9	5.0	4.5	8.2	3.4	3.9	10.2	11.0								
Leukaemias, myeloid, chronic																										
M				1	1				2			1				2	1	1		<b>9</b>	<b>0.6</b>	0.2-1.1	100.0	0.0	2917	1.0 (0.3-1.6)
				1.3	1.3				2.6			1.6				9.1	7.2	11.6								
F							1	2				1		1		1	3	1		<b>10</b>	<b>0.5</b>	0.2-0.9	90.0	0.0	2358	0.9 (0.4-1.5)
							1.4	2.7				1.7		2.7		3.9	15.3	5.5								
Leukaemias, myeloid, other/NOS																										
M	1												1	1		3	1	3		<b>10</b>	<b>0.7</b>	0.2-1.2	90.0	0.0	3083	1.3 (0.5-2.1)
	1.6												2.2	2.8		13.7	7.2	34.8								
F					1			1						1	1			2		<b>6</b>	<b>0.4</b>	0.0-0.8	100.0	0.0	2261	0.6 (0.1-1.0)
					1.4			1.3						2.7	3.4			11.0								

### Appendix 3A. Cancer incidence, Western Australia, 2005

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											
<b>Leukaemias, other</b>																																				
M																				<b>0</b>																
F																				<b>0</b>																
<b>Leukaemias (all)</b>																																				
M	9	5	4	2	1	1	2	3	4	3	8	15	14	13	9	15	12	5	<b>125</b>	<b>10.2</b>	8.2-12.2	96.0	0.9	110	13.1 (10.8-15.5)											
	14.1	7.3	5.5	2.7	1.3	1.5	2.7	4.0	5.1	4.0	11.7	23.9	30.3	35.8	32.8	68.4	86.8	58.1																		
F	4		1	1	2	2	3	3	1	3	4	7	4	9	7	10	12	11	<b>84</b>	<b>5.7</b>	4.2-7.1	94.0	0.5	193	8.0 (6.3-9.7)											
	6.6		1.4	1.4	2.9	3.0	4.1	4.1	1.3	4.0	5.8	11.6	9.0	24.7	23.7	38.9	61.0	60.4																		
<b>MYELODYSPLASTIC DISEASES</b>																																				
<b>Refractory anaemias/cytopenias</b>																																				
M																				<b>27</b>	<b>1.7</b>	1.0-2.3	93.0	0.2	624	3.2 (2.0-4.4)										
																				1.3		2.9	1.6	4.3	11.0	10.9	22.8	28.9	58.1							
F																				<b>21</b>	<b>1.1</b>	0.6-1.6	86.0	0.1	1099	2.0 (1.1-2.8)										
																				1		1.5		1.5	1.7	6.8		6.8	19.5	20.3	22.0					
<b>Myelodysplastic syndromes</b>																																				
M																				<b>32</b>	<b>1.8</b>	1.1-2.4	81.0	0.2	655	3.8 (2.5-5.2)										
																				1.3		1.5		2.2	11.0	14.6	36.5	72.3	34.8							
F																				<b>33</b>	<b>1.8</b>	1.0-2.5	67.0	0.1	773	3.0 (2.0-4.0)										
	1																				1		1.4	1.4		2.9	1.7	13.6		3.4	19.5	35.6	43.9			
	1.6																																			
<b>Myelodysplastic diseases, all</b>																																				
M																				<b>59</b>	<b>3.4</b>	2.5-4.4	86.0	0.3	320	7.0 (5.2-8.9)										
																				1.3		1.3		4.4	1.6	6.5	22.0	25.5	59.3	101.2	92.9					
F																				<b>54</b>	<b>2.9</b>	2.0-3.8	74.0	0.2	454	5.0 (3.6-6.3)										
	1																				1		1.5	1.4	1.4		4.4	3.3	20.3		10.2	38.9	55.9	65.9		
	1.6																																			
<b>CHRONIC MYELOPROLIFERATIVE DISEASES</b>																																				
<b>Chronic myeloproliferative disorder, NOS</b>																																				
M																				<b>4</b>	<b>0.2</b>	0 - 0.5	100.0	0.0	4055	0.5 (0.0-0.9)										
																				1.3				3.6		14.5										
F																				<b>4</b>	<b>0.1</b>	0.0-0.2	100.0	0.0	*	0.3 (0.0-0.6)										
																										2	2									
																										10.2	11.0									
<b>Polycythaemia rubra vera</b>																																				
M																				<b>19</b>	<b>1.4</b>	0.7-2.0	89.0	0.2	628	1.9 (1.1-2.8)										
																				1.3		1.3	4.0		1.6	10.8	5.5	7.3	13.7	7.2						
F																				<b>10</b>	<b>0.6</b>	0.2-1.0	100.0	0.1	1130	0.9 (0.3-1.5)										
																								2		4	1		2	1						
																								3.3		11.0	3.4		10.2	5.5						
<b>Myelofibrosis/sclerosis</b>																																				
M																				<b>5</b>	<b>0.2</b>	0.0-0.4	60.0	0.0	*	0.7 (0.1-1.3)										
																										1	2	2								
																								4.6		14.5	23.2									
F																				<b>3</b>	<b>0.2</b>	0 - 0.5	67.0	0.0	4689	0.3 (0 - 0.7)										
																				1		1.5				1	1		3.9							
																										2.7	3.9									
<b>Other chronic myeloproliferative d/o</b>																																				
M																				<b>5</b>	<b>0.3</b>	0.0-0.6	100.0	0.0	3407	0.5 (0.1-0.9)										
																				2		2.7				2			1							
																										3.2			7.2							
F																				<b>11</b>	<b>0.5</b>	0.2-0.8	82.0	0.0	2087	1.0 (0.4-1.6)										
																										1	1		2	1	4	2				
																										1.3	1.5		6.8	3.9	20.3	11.0				

### Appendix 3A. Cancer incidence, Western Australia, 2005

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	
<b>Chronic myeloproliferative d/o, all</b>																										
M								3	2	3		3	5	2	3	4	6	2		<b>33</b>	<b>2.2</b>	1.4-2.9	88.0	0.2	469	3.6 (2.3-4.8)
								4.0	2.6	4.0		4.8	10.8	5.5	10.9	18.2	43.4	23.2								
F						1				1	1	2		5	3	2	8	5		<b>28</b>	<b>1.4</b>	0.8-2.0	89.0	0.2	634	2.6 (1.6-3.5)
						1.5				1.3	1.5	3.3		13.7	10.2	7.8	40.7	27.5								
<b>OTHER CHRONIC IMMUNOPROLIFERATIVE DISEASES</b>																										
<b>Mast cell tumours</b>																										
M											2									<b>2</b>	<b>0.1</b>	0 - 0.3	100.0	0.0	6822	0.2 (0 - 0.5)
											2.9															
F																				<b>0</b>						
<b>Histiocytic/dendritic cell malignancies</b>																										
M																				<b>0</b>						
F																				<b>0</b>						
<b>Other &amp; U/S immunoproliferative neoplasms</b>																										
M									2				1					2		<b>5</b>	<b>0.4</b>	0.0-0.7	80.0	0.0	4123	0.6 (0.1-1.1)
									2.7				2.2					23.2								
F														1			2			<b>3</b>	<b>0.1</b>	0 - 0.3	100.0	0.0	7279	0.3 (0 - 0.6)
														2.7			10.2									
<b>Other chronic immunoproliferative d/o, all</b>																										
M								2		2			1					2		<b>7</b>	<b>0.5</b>	0.1-0.9	86.0	0.0	2570	0.8 (0.2-1.4)
								2.7		2.9			2.2					23.2								
F														1			2			<b>3</b>	<b>0.1</b>	0 - 0.3	100.0	0.0	7279	0.3 (0 - 0.6)
														2.7			10.2									
<b>Unknown primary site (C26, C39, C76, C80; Behaviour 6/9)</b>																										
M	1					1			1	3	7	7	16	18	23	15	12	28	23	<b>155</b>	<b>10.2</b>	8.5-11.8	77.0	1.1	96	17.5 (14.7-20.3)
	1.6					1.3			1.3	3.9	9.4	10.3	25.5	39.0	63.3	54.7	54.7	202.4	267.2							
F									2	1	4	9	8	7	12	15	14	18	32	<b>122</b>	<b>6.3</b>	5.0-7.5	66.0	0.7	148	11.2 (9.2-13.2)
									2.7	1.3	5.4	13.2	13.3	15.8	33.0	50.9	54.5	91.5	175.7							
<b>All cancers</b>																										
M	14	9	6	16	27	48	69	86	118	222	341	572	658	777	694	713	474	319		<b>5163</b>	<b>356.1</b>	346-366	94.0	41.7	3	555.8 (541-571)
	22.0	13.1	8.3	21.5	36.4	70.3	92.9	115.3	151.8	298.2	499.9	911.8	1425	2140	2531	3250	3427	3705								
F	10	5	6	16	19	51	74	124	220	304	399	383	431	403	402	408	381	352		<b>3988</b>	<b>260.9</b>	252-270	93.0	28.9	4	381.0 (369-393)
	16.5	7.7	8.7	22.7	27.2	77.4	101.5	167.4	284.5	407.2	583.2	636.7	973.8	1107	1364	1588	1937	1933								



### Appendix 3B. Cancer mortality, Western Australia, 2005

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										2	1	1		4	3	2	1		<b>14</b>	<b>1.0</b>	0.5-1.5	122	0.1	722	1.5 (0.7-2.3)	
										2.7	1.5	1.6		11.0	10.9	9.1	7.2									
F															1		2	3	<b>6</b>	<b>0.2</b>	0.0-0.4	2	0.0	5896	0.5 (0.1-0.9)	
															3.4		10.2	16.5								
Tongue (C010-C029)																										
M				1					2		1	3			2				<b>9</b>	<b>0.7</b>	0.2-1.2	164	0.1	1037	0.9 (0.3-1.5)	
				1.3					2.6		1.6	6.5			7.3											
F				1								1	1		1			1	<b>4</b>	<b>0.3</b>	0 - 0.6	65	0.0	2825	0.4 (0.0-0.8)	
				1.4								2.3			3.4			5.5								
Parotid gland (C070-C079)																										
M															1				<b>1</b>	<b>0.1</b>	0 - 0.2	2	0.0	5485	0.1 (0 - 0.4)	
															3.6											
F																		1	<b>1</b>	<b>0.1</b>	0 - 0.2	7	0.0	7279	0.1 (0 - 0.3)	
																		2.7								
Major salivary glands (not parotid) (C080-C089)																										
M																			<b>0</b>						-	
F																			<b>0</b>						-	
Pharynx (C090-C149) (not C11)																										
M								1		2	1	4	2	2	1	2	1	1	<b>17</b>	<b>1.2</b>	0.6-1.7	208	0.1	789	1.7 (0.9-2.6)	
								1.3		2.7	1.5	6.4	4.3	5.5	3.6	9.1	7.2	11.6								
F											1				2	1			<b>4</b>	<b>0.2</b>	0 - 0.3	17	0.0	*	0.4 (0.0-0.8)	
											1.7				7.8	5.1										
Nasopharynx (C110-C119)																										
M								1											<b>1</b>	<b>0.1</b>	0 - 0.2	35	0.0	*	0.1 (0 - 0.3)	
								1.3																		
F																			<b>0</b>						-	
Oesophagus (C150-C159)																										
M								4	5	4	6	8	9	10	14	3	5		<b>68</b>	<b>4.6</b>	3.5-5.7	601	0.5	189	7.4 (5.6-9.2)	
								5.1	6.7	5.9	9.6	17.3	24.8	36.5	63.8	21.7	58.1									
F											1	2	3	1	2	8	4		<b>21</b>	<b>1.0</b>	0.5-1.4	64	0.1	1123	1.9 (1.1-2.7)	
											1.7	4.5	8.2	3.4	7.8	40.7	22.0									
Stomach (C160-C169)																										
M								1	1	2	4	4	11	8	12	11	17	13	<b>90</b>	<b>5.7</b>	4.5-6.9	693	0.6	161	9.9 (7.8-12.0)	
								1.3	1.3	2.6	5.4	5.9	17.5	17.3	33.0	40.1	77.5	94.0	69.7							
F								1	1	1	1		2	2	2	6	10	6	<b>31</b>	<b>1.4</b>	0.8-1.9	136	0.1	956	2.8 (1.8-3.9)	
								1.4	1.3	1.5			4.5	5.5	6.8	23.4	50.8	33.0								
Small intestine (C170-C179)																										
M													2	2	1	1	2	1	<b>9</b>	<b>0.6</b>	0.2-1.0	39	0.1	1484	1.0 (0.3-1.7)	
													4.3	5.5	3.6	4.6	14.5	11.6								
F											2	1	1	1	1	1	2		<b>9</b>	<b>0.5</b>	0.1-0.8	55	0.1	1706	0.8 (0.3-1.4)	
											3.3	2.3	2.7	3.4	3.9	5.1	11.0									

## Appendix 3B. Cancer mortality, Western Australia, 2005

Age	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85+	Total	ASR	95% c.i.	PYLL	CumInc	Risk	ASR2		
Colorectal cancer (C18-C20, C218)																											
M									2	4	19	20	33	33	35	27	41	24	<b>238</b>	<b>15.4</b>	13.4-17.4	1565	1.8	56	26.7 (23.2-30.1)		
									2.6	5.4	27.9	31.9	71.4	90.9	127.6	123.1	296.4	278.8									
F						1	1	1	2	5	7	6	9	12	19	27	41	57	<b>188</b>	<b>8.5</b>	7.1-9.9	803	0.8	133	17.0 (14.5-19.4)		
						1.5	1.4	1.4	2.6	6.7	10.2	10.0	20.3	33.0	64.5	105.1	208.5	313.0									
Colon (C180-C189)																											
M									1	1	11	12	16	18	19	12	27	17	<b>134</b>	<b>8.5</b>	7.0-10.0	827	1.0	105	15.2 (12.6-17.9)		
									1.3	1.3	16.1	19.1	34.6	49.6	69.3	54.7	195.2	197.5									
F							1		2	3	3	6	7	8	11	24	33	40	<b>138</b>	<b>6.0</b>	4.9-7.1	511	0.5	206	12.4 (10.3-14.5)		
							1.4		2.6	4.0	4.4	10.0	15.8	22.0	37.3	93.4	167.8	219.7									
Rectosigmoid junction & rectum (C190-C209)																											
M									1	3	8	8	17	15	16	15	14	7	<b>104</b>	<b>6.9</b>	5.5-8.3	735	0.8	121	11.4 (9.2-13.6)		
									1.3	4.0	11.7	12.8	36.8	41.3	58.3	68.4	101.2	81.3									
F						1		1		2	4		2	4	8	3	8	17	<b>50</b>	<b>2.5</b>	1.7-3.3	291	0.3	371	4.5 (3.3-5.8)		
						1.5		1.4		2.7	5.8		4.5	11.0	27.1	11.7	40.7	93.4									
Anus (C210-C219)																											
M									1			1	1	1			1	2	<b>7</b>	<b>0.5</b>	0.1-0.8	64	0.0	2565	0.8 (0.2-1.4)		
									1.3			1.6	2.2	2.8			7.2	23.2									
F															1	1	1	1	<b>3</b>	<b>0.1</b>	0 - 0.2	0	0.0	*	0.3 (0 - 0.6)		
															3.9	5.1	5.5										
Liver & intrahepatic bile ducts (C220-C229)																											
M	1									2	3	4	7	7	6	8	6	4	<b>48</b>	<b>3.3</b>	2.3-4.2	389	0.4	281	5.3 (3.8-6.8)		
	1.6									2.7	4.4	6.4	15.2	19.3	21.9	36.5	43.4	46.5									
F							1		1	2				1	3	3	1	5	<b>17</b>	<b>0.9</b>	0.4-1.3	119	0.1	1079	1.6 (0.8-2.4)		
							1.4		1.3	2.9				2.7	10.2	11.7	5.1	27.5									
Gallbladder & bile ducts (C230-C249)																											
M											1	3	1	4	5	2	4	4	<b>20</b>	<b>1.2</b>	0.7-1.8	67	0.1	787	2.4 (1.3-3.5)		
											1.6	6.5	2.8	14.6	22.8	14.5	46.5										
F											3	2		5	3	5	5	5	<b>18</b>	<b>0.8</b>	0.4-1.3	50	0.1	1630	1.6 (0.9-2.4)		
											6.8	5.5		19.5	15.3	27.5											
Pancreas (C250-C259)																											
M								3	4	5	7	7	18	12	11	9	9	9	<b>85</b>	<b>5.7</b>	4.4-6.9	638	0.7	147	9.4 (7.4-11.5)		
								3.9	5.4	7.3	11.2	15.2	49.6	43.8	50.1	65.1	104.5										
F									1	4	9	16	12	16	11	14	16	16	<b>99</b>	<b>5.7</b>	4.5-6.9	575	0.7	138	9.3 (7.5-11.1)		
									1.3	5.8	15.0	36.2	33.0	54.3	42.8	71.2	87.9										
Nasal cavity & sinuses, middle & inner ear (C300-C319)																											
M									1				1				1	4	<b>3</b>	<b>0.2</b>	0 - 0.4	37	0.0	5701	0.3 (0 - 0.7)		
									1.3				2.2				7.2										
F											1			2		1	1	1	<b>4</b>	<b>0.2</b>	0 - 0.5	21	0.0	2368	0.4 (0.0-0.8)		
											1.7			6.8		5.1											
Larynx (C320-C329)																											
M											3	1	1	4	1	2	1	1	<b>13</b>	<b>0.8</b>	0.4-1.3	76	0.1	824	1.4 (0.6-2.2)		
											4.8	2.2	2.8	14.6	4.6	14.5	11.6										
F															2				<b>2</b>	<b>0.1</b>	0 - 0.3	5	0.0	2948	0.2 (0 - 0.5)		
															6.8												

### Appendix 3B. Cancer mortality, Western Australia, 2005

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								2		6	17	33	52	66	74	101	84	43	<b>478</b>	<b>29.5</b>	26.7-32.2	2343	3.3	31	54.7 (49.7-59.6)	
								2.7		8.1	24.9	52.6	112.6	181.8	269.9	460.4	607.3	499.5								
F				1		1	2	2	11	6	17	25	36	42	54	36	29		<b>262</b>	<b>14.9</b>	12.9-16.8	1583	1.8	56	25.2 (22.1-28.2)	
				1.4		1.4	2.7	2.6	14.7	8.8	28.3	56.5	98.9	142.5	210.2	183.0	159.3									
Thymus (C370-C379)																										
M																1			<b>1</b>	<b>0.0</b>	0 - 0.1	0	0.0	*	0.1 (0 - 0.4)	
																4.6										
F																			<b>0</b>					-		
Pleura, heart & mediastinum (C380-C389)																										
M				1													1		<b>2</b>	<b>0.1</b>	0 - 0.4	49	0.0	*	0.2 (0 - 0.5)	
				1.3													7.2									
F								1	1										<b>2</b>	<b>0.2</b>	0 - 0.4	47	0.0	7140	0.2 (0 - 0.5)	
								1.3	1.5																	
Bones, joints & articular cartilages (C400-C419)																										
M				1						1	1	2	1						<b>6</b>	<b>0.5</b>	0.1-0.9	120	0.1	1742	0.6 (0.1-1.0)	
				1.3						1.5	1.6	4.3	2.8													
F															1				<b>1</b>	<b>0.1</b>	0 - 0.2	2	0.0	5896	0.1 (0 - 0.3)	
															3.4											
Skin (melanoma only) (C430-C439)																										
M				1	3		7	6	8	15	9	12	8	10	11	15			<b>105</b>	<b>7.0</b>	5.6-8.4	1133	0.7	143	11.6 (9.3-13.9)	
				1.5	4.0		9.0	8.1	11.7	23.9	19.5	33.0	29.2	45.6	79.5	174.2										
F					1	1	2		4	2	3	5	2	3	4	8			<b>35</b>	<b>2.0</b>	1.3-2.7	333	0.2	479	3.2 (2.1-4.3)	
					1.4	1.4	2.6		5.8	3.3	6.8	13.7	6.8	11.7	20.3	43.9										
Skin (not melanoma; includes SCC-BCC) (C440-C449)																										
M							1		1	3	1	4	2	6	4	9			<b>31</b>	<b>1.8</b>	1.2-2.5	142	0.1	715	3.8 (2.4-5.2)	
							1.3		1.5	4.8	2.2	11.0	7.3	27.4	28.9	104.5										
F														1	3	4			<b>8</b>	<b>0.2</b>	0.1-0.4	0	0.0	*	0.7 (0.2-1.1)	
														3.9	15.3	22.0										
Mesothelioma (M905; ICD10 C45)																										
M							1	4	4	7	13	5	7	12	7				<b>60</b>	<b>3.8</b>	2.8-4.8	353	0.4	242	6.8 (5.0-8.5)	
							1.3	5.9	6.4	15.2	35.8	18.2	31.9	86.8	81.3											
F							1	1	1	1	4	1		2					<b>11</b>	<b>0.8</b>	0.3-1.2	116	0.1	956	1.0 (0.4-1.7)	
							1.3	1.3		1.7	2.3	11.0	3.4		10.2											
Kaposi sarcoma (M914; ICD10 C46)																										
M										1									<b>1</b>	<b>0.1</b>	0 - 0.2	16	0.0	*	0.1 (0 - 0.2)	
										1.6																
F																			<b>0</b>					-		
Nervous system, peripheral & autonomic (C470-C479)																										
M								1											<b>1</b>	<b>0.1</b>	0 - 0.2	35	0.0	*	0.1 (0 - 0.3)	
								1.3																		
F																			<b>0</b>					-		



### Appendix 3B. Cancer mortality, Western Australia, 2005

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																				<b>0</b>																									
Kidney (C640-C649)																																													
M																										1	1	1	1	6	1	7	7	6	5	5	<b>41</b>	<b>2.6</b>	1.8-3.4	283	0.3	323	4.6 (3.2-6.1)		
																										1.3	1.3	1.3	1.5	9.6	2.2	19.3	25.5	27.4	36.1	58.1									
F																							1				1	1		1	1		6	3	4	6	<b>24</b>	<b>1.2</b>	0.7-1.8	155	0.1	707	2.3 (1.3-3.2)		
																							1.4				1.3	1.3		1.7	2.3		20.4	11.7	20.3	33.0									
Bladder & urinary tract (C650-C689)																																													
M																													2	3	4	5	9	19	8	10	<b>60</b>	<b>3.5</b>	2.6-4.4	191	0.3	318	7.3 (5.4-9.1)		
																													2.9	4.8	8.7	13.8	32.8	86.6	57.8	116.2									
F																											1				1	2	4	5	6	14	<b>33</b>	<b>1.3</b>	0.8-1.9	62	0.1	883	2.9 (1.9-3.9)		
																											1.3				2.3	5.5	13.6	19.5	30.5	76.9									
Eye & lacrimal gland (C690-C699)																																													
M																						1							1	1							<b>3</b>	<b>0.3</b>	0 - 0.7	91	0.0	3832	0.3 (0 - 0.6)		
																						1.5							1.6	2.2															
F																																	1			1	<b>2</b>	<b>0.1</b>	0 - 0.2	2	0.0	5896	0.2 (0 - 0.5)		
																																	3.4			5.5									
Meninges (cerebral & spinal) (C700-C709)																																				1		<b>1</b>	<b>0.0</b>	0 - 0.1	0	0.0	*	0.1 (0 - 0.4)	
																																				7.2									
F																													1						1		<b>2</b>	<b>0.1</b>	0 - 0.3	12	0.0	8853	0.2 (0 - 0.4)		
																													2.3						5.1										
Brain (C710-C719)																																													
M																						1			1	1	4	5	3	7	6	15	5	9	1	1	<b>59</b>	<b>4.3</b>	3.2-5.4	742	0.5	193	6.0 (4.5-7.6)		
																						1.5			1.3	1.3	5.1	6.7	4.4	11.2	13.0	41.3	18.2	41.0	7.2	11.6									
F																					1		1	1	1	1	3	3	1	1	4	5	6	4	4	6	2	4	<b>48</b>	<b>3.5</b>	2.4-4.6	849	0.4	284	4.7 (3.3-6.0)
																					1.6		1.4	1.4	1.4	1.5	4.1	4.1	1.3	1.3	5.8	8.3	13.6	11.0	13.6	23.4	10.2	22.0							
Spinal cord & cranial nerves (C720-C729)																																													
M																				<b>0</b>																									
F																				<b>0</b>																									
Thyroid gland (C730-C739)																																													
M																													1	1	2	1	2				<b>7</b>	<b>0.5</b>	0.1-0.9	71	0.1	1147	0.7 (0.2-1.2)		
																													1.5	1.6	4.3	2.8	7.3												
F																													1			3	1			3	<b>8</b>	<b>0.5</b>	0.1-0.8	40	0.1	1504	0.7 (0.2-1.2)		
																													1.7		8.2	3.4				16.5									
Adrenal gland (C740-C749)																																													
M																											1										<b>1</b>	<b>0.1</b>	0 - 0.2	25	0.0	*	0.1 (0 - 0.3)		
																											1.3																		
F																					1		1										1				<b>3</b>	<b>0.4</b>	0 - 0.9	135	0.0	3082	0.3 (0 - 0.7)		
																					1.6		1.4										3.4												
Endocrine glands (not adrenal) (C750-C759)																																													
M																																				1	<b>1</b>	<b>0.0</b>	0 - 0.1	0	0.0	*	0.1 (0 - 0.4)		
																																					7.2								
F																																					<b>1</b>	<b>0.1</b>	0 - 0.2	41	0.0	*	0.1 (0 - 0.3)		
																																					1.4								

**Appendix 3B. Cancer mortality, Western Australia, 2005**

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	
<b>LYMPHOMAS</b>																										
Lymphoma, NOS / unclassifiable																										
M																	1 7.2		1	0.0	0 - 0.1	0	0.0	*	0.1 (0 - 0.4)	
F															1 3.4	1 3.9		1 5.5	3	0.1	0 - 0.3	2	0.0	5896	0.3 (0 - 0.6)	
Hodgkin lymphoma																										
M													1 2.2			1 4.6			2	0.1	0 - 0.3	11	0.0	9238	0.2 (0 - 0.5)	
F																	2 10.2		2	0.1	0 - 0.1	0	0.0	*	0.2 (0 - 0.4)	
All NHL																										
M					1 1.3		1 1.3	1 1.3	2 2.6	2 2.7	4 5.9	4 6.4	7 15.2	8 22.0	6 21.9	15 68.4	6 43.4	2 23.2	59	3.9	2.8-4.9	529	0.4	249	6.4 (4.8-8.1)	
F					1 1.4			2 2.6	1 1.3	1 1.5	3 5.0	2 4.5	7 19.2	5 17.0	6 23.4	11 55.9	11 60.4		50	2.5	1.7-3.3	296	0.3	381	4.6 (3.3-5.8)	
NHL, mature B cell																										
M					1 1.3		1 1.3	1 1.3	2 2.6	2 2.7	4 5.9	3 4.8	4 8.7	5 13.8	3 10.9	11 50.1	5 36.1	1 11.6	43	2.8	1.9-3.7	451	0.3	376	4.6 (3.2-6.1)	
F					1 1.4			2 2.6	1 1.3		3 5.0	1 2.3	6 16.5	3 10.2	4 15.6	9 45.8	8 43.9		38	1.9	1.2-2.6	250	0.2	510	3.5 (2.3-4.6)	
NHL, mature T/NK cell																										
M											1 1.6	3 6.5	1 2.8	1 3.6	3 13.7				9	0.6	0.2-1.0	60	0.1	1381	0.9 (0.3-1.6)	
F								1 1.5						1 3.4					2	0.1	0 - 0.3	24	0.0	4120	0.2 (0 - 0.5)	
NHL, precursor cell lymphoblastic																										
M																			0						-	
F																			0						-	
NHL, other/unclassifiable																										
M														2 5.5	2 7.3	1 4.6	1 7.2	1 11.6	7	0.5	0.1-0.8	19	0.1	1563	0.8 (0.2-1.5)	
F											1 2.3	1 2.7	1 3.4	1 7.8	2 10.2	2 16.5	3 16.5		10	0.5	0.1-0.8	21	0.0	2381	0.9 (0.3-1.5)	
Lymphomas (all)																										
M					1 1.3		1 1.3	1 1.3	2 2.6	2 2.7	4 5.9	4 6.4	8 17.3	8 22.0	6 21.9	16 72.9	7 50.6	2 23.2	62	4.0	3.0-5.1	541	0.4	242	6.8 (5.1-8.5)	
F					1 1.4			2 2.6	1 1.3	1 1.5	3 5.0	2 4.5	7 19.2	6 20.4	7 27.2	13 66.1	12 65.9		55	2.7	1.9-3.5	298	0.3	358	5.0 (3.7-6.4)	
<b>MYELOMA</b>																										
Myeloma/plasma cell tumours																										
M									1 1.3	1 1.5	4 6.4	3 6.5	2 5.5	4 14.6	6 27.4	3 21.7	5 58.1		29	1.8	1.1-2.5	167	0.2	560	3.4 (2.1-4.6)	
F								1 1.4	1 1.3	1 1.3	1 1.7	4 9.0	3 8.2	2 8.2	5 19.5	5 25.4	8 43.9		31	1.6	1.0-2.2	183	0.1	674	2.8 (1.8-3.8)	

### Appendix 3B. Cancer mortality, Western Australia, 2005

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	
<b>LEUKAEMIAS</b>																										
Leukaemias, NOS/unclassifiable																										
M							1	1.3							1				1	3	0.2	0-0.5	37	0.0	4010	0.4 (0-0.8)
F																			1	1	0.0	0-0.1	0	0.0	*	0.1 (0-0.2)
Leukaemias, lymphoid, all																										
M							1	1.3			1	2	1	4	1	4	4	2		20	1.2	0.7-1.8	133	0.1	877	2.3 (1.3-3.3)
F		2				1				1	1	1	2	2	1	1	3	4		16	1.0	0.4-1.6	226	0.1	1227	1.5 (0.7-2.2)
Leukaemias, lymphoid, acute																										
M							1	1.3			1	1	1	2	1	2				6	0.3	0.1-0.6	62	0.0	3513	0.6 (0.1-1.2)
F		2				1				1							1	1		6	0.5	0.0-1.0	193	0.0	3478	0.6 (0.1-1.0)
Leukaemias, lymphoid, chronic																										
M											1	1	1	3	1	2	2	1		12	0.8	0.3-1.2	71	0.1	1168	1.3 (0.6-2.1)
F												1	2	2	1	1	2	3		10	0.5	0.1-0.8	33	0.1	1896	0.9 (0.3-1.5)
Leukaemias, lymphoid, other/NOS																										
M																1		1		2	0.1	0-0.2	0	0.0	*	0.3 (0-0.7)
F																				0						-
Leukaemias, myeloid, all																										
M							1	1	2	3	4	1	4	6	2					24	1.5	0.8-2.1	142	0.1	737	2.7 (1.6-3.8)
F		1		1	1		1	1	1	3	2	4	1	4	2					22	1.5	0.8-2.2	310	0.2	583	2.1 (1.2-3.0)
Leukaemias, myeloid, acute																										
M							1	1	1	1	1	1	3	4						13	0.7	0.3-1.2	82	0.1	1543	1.4 (0.7-2.2)
F		1			1		1	1	3	2	2	2	1	2	1					15	1.1	0.5-1.7	223	0.1	807	1.5 (0.7-2.2)
Leukaemias, myeloid, chronic																										
M									2	1				1						4	0.3	0-0.6	30	0.0	2824	0.4 (0.0-0.8)
F																	2			2	0.1	0-0.1	0	0.0	*	0.2 (0-0.4)
Leukaemias, myeloid, other/NOS																										
M									1	2		1	1	2						7	0.4	0.1-0.8	30	0.0	2817	0.8 (0.2-1.5)
F				1				1					2					1		5	0.4	0.0-0.7	86	0.0	2097	0.5 (0.1-0.9)



### Appendix 3B. Cancer mortality, Western Australia, 2005

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		3	1		<b>6</b>	<b>0.3</b>	0.1-0.6	14	0.0	3632	0.7 (0.1-1.2)	
														5.5		13.7	7.2									
F											1	1	1	1	3	1			<b>7</b>	<b>0.4</b>	0.1-0.6	26	0.0	2564	0.7 (0.2-1.2)	
											1.7	2.7	3.4	11.7	5.1											
<b>OTHER CHRONIC IMMUNOPROLIFERATIVE DISEASES</b>																										
Mast cell tumours																										
M																			<b>0</b>					-		
F																			<b>0</b>					-		
Histiocytic/dendritic cell malignancies																										
M																			<b>0</b>					-		
F																			<b>0</b>					-		
Other & U/S immunoproliferative neoplasms																										
M														1		1	1		<b>3</b>	<b>0.2</b>	0 - 0.4	7	0.0	7263	0.3 (0 - 0.7)	
														2.8		4.6	7.2									
F														1					<b>1</b>	<b>0.1</b>	0 - 0.2	7	0.0	7279	0.1 (0 - 0.3)	
														2.7												
Other chronic immunoproliferative d/o, all																										
M														1		1	1		<b>3</b>	<b>0.2</b>	0 - 0.4	7	0.0	7263	0.3 (0 - 0.7)	
														2.8		4.6	7.2									
F														1					<b>1</b>	<b>0.1</b>	0 - 0.2	7	0.0	7279	0.1 (0 - 0.3)	
														2.7												
Unknown primary site (C80 or Behaviour 6/9)																										
M								1	3	2	9	10	15	14	9	21	16		<b>100</b>	<b>6.3</b>	5.0-7.5	542	0.7	147	11.6 (9.3-13.9)	
								1.3	4.0	2.9	14.3	21.7	41.3	51.1	41.0	151.8	185.9									
F									2	3	4	3	6	9	13	16	24		<b>80</b>	<b>3.6</b>	2.7-4.5	283	0.3	297	7.2 (5.6-8.8)	
									2.7	4.4	6.7	6.8	16.5	30.5	50.6	81.4	131.8									
<b>Total deaths due to cancer</b>																										
<b>M</b>	1	3		1	3	1	7	11	31	51	89	165	197	276	278	339	312	239	<b>2004</b>	<b>126.9</b>	121-133	13114	13.7	8	228.7 (219-239)	
	1.6	4.4		1.3	4.0	1.5	9.4	14.8	39.9	68.5	130.5	263.0	427	760	1014	1545	2256	2776								
<b>F</b>	2	1	4	3	5	3	11	14	28	53	65	97	124	148	172	198	224	276	<b>1428</b>	<b>78.1</b>	73.6-82.6	10360	8.5	12	132.9 (126-140)	
	3.3	1.5	5.8	4.2	7.1	4.6	15.1	18.9	36.2	71.0	95.0	161.3	280.2	407	584	771	1139	1516								



### Appendix 3C. Childhood cancer, Western Australia, 2005 (WHO International Classification, version 3)

	Males								Females								All									
	Age Group				Total	ASR	95%c.i.	TD%	Age Group				Total	ASR	95%c.i.	TD%	Age Group				Total	ASR	95%c.i.	TD%		
	0	1-4	5-9	10-14					0	1-4	5-9	10-14					0	1-4	5-9	10-14						
<b>I. LEUKAEMIAS, MYELOPROLIFERATIVE AND MYELOYDYSPLASTIC DISEASES</b>																										
All	9	5	4		<b>18</b>	<b>9.5</b>	5.0-13.9	100	2	4		1		<b>7</b>	<b>4.3</b>	1.1-7.5	100	2	13	5	5		<b>25</b>	<b>6.9</b>	4.2-9.7	100
	17.8	7.3	5.5						16.8	8.2		1.4						8.3	13.1	3.8	3.5					
Lymphoid leukaemia	8	4	4		<b>16</b>	<b>8.4</b>	4.2-12.6	100				1		<b>1</b>	<b>0.4</b>	0 - 1.2	100		8	4	5		<b>17</b>	<b>4.5</b>	2.3-6.7	100
	15.8	5.9	5.5									1.4							8.1	3.0	3.5					
Acute myeloid leukaemia	1				<b>1</b>	<b>0.6</b>	0 - 1.8	100	2	3				<b>5</b>	<b>3.2</b>	0.4-6.0	100	2	4				<b>6</b>	<b>1.9</b>	0.4-3.4	100
	2.0								16.8	6.2								8.3	4.0							
Chronic MPDs					<b>0</b>									<b>0</b>									<b>0</b>			
MDS & other MPDs					<b>0</b>							1.0		<b>1</b>	<b>0.6</b>	0 - 1.9	100		1.0				<b>1</b>	<b>0.3</b>	0 - 0.9	100
												2.1							1.0							
Unspecified/other leukaemia			1		<b>1</b>	<b>0.5</b>	0 - 1.4	100						<b>0</b>							1		<b>1</b>	<b>0.2</b>	0 - 0.7	100
			1.5																		0.8					
<b>II. LYMPHOMAS</b>																										
All		1	2		<b>3</b>	<b>1.6</b>	0 - 3.3	100			1	2		<b>3</b>	<b>1.3</b>	0 - 2.9	100		1	3	2		<b>6</b>	<b>1.5</b>	0.3-2.6	100
		2.0	2.9								1.5	2.9							1.0	2.3	1.4					
Hodgkin lymphoma			1		<b>1</b>	<b>0.5</b>	0 - 1.4	100			1	2		<b>3</b>	<b>1.3</b>	0 - 2.9	100			2	2		<b>4</b>	<b>0.9</b>	0.0-1.8	100
			1.5								1.5	2.9								1.5	1.4					
Non-Hodgkin lymphoma exc Burkitt			1		<b>1</b>	<b>0.5</b>	0 - 1.4	100						<b>0</b>							1		<b>1</b>	<b>0.2</b>	0 - 0.7	100
			1.5																		0.8					
Burkitt lymphoma	1				<b>1</b>	<b>0.6</b>	0 - 1.8	100						<b>0</b>					1				<b>1</b>	<b>0.3</b>	0 - 0.9	100
	2.0																		1.0							
Misc. lymphoreticular neoplasms					<b>0</b>									<b>0</b>									<b>0</b>			
Unspecified lymphoma					<b>0</b>									<b>0</b>									<b>0</b>			
<b>III. CNS AND INTRACRANIAL/SPINAL</b>																										
All	2	1	1		<b>4</b>	<b>2.1</b>	0.0-4.2	100	2		1	1		<b>4</b>	<b>2.2</b>	0.0-4.4	100	2	2	2	2		<b>8</b>	<b>2.2</b>	0.6-3.7	100
	4.0	1.5	1.4						16.8		1.5	1.4							8.3	2.0	1.5	1.4				
Ependymoma/choroid plexus	1				<b>1</b>	<b>0.6</b>	0 - 1.8	100						<b>0</b>						1			<b>1</b>	<b>0.3</b>	0 - 0.9	100
	2.0																		1.0							
Astrocytoma					<b>0</b>						1			<b>1</b>	<b>0.5</b>	0 - 1.5	100				1		<b>1</b>	<b>0.2</b>	0 - 0.7	100
											1.5										0.8					
Embryonal tumours	1				<b>1</b>	<b>0.6</b>	0 - 1.8	100	1					<b>1</b>	<b>0.7</b>	0 - 1.9	100	1	1				<b>2</b>	<b>0.6</b>	0 - 1.5	100
	2.0								8.4										4.2	1.0						
Other gliomas					<b>0</b>									<b>0</b>									<b>0</b>			
Other intracranial/spinal			1	1	<b>2</b>	<b>0.9</b>	0 - 2.1	100	1			1		<b>2</b>	<b>1.1</b>	0 - 2.6	100	1		1	2		<b>4</b>	<b>1.0</b>	0.0-1.9	100
			1.5	1.4					8.4			1.4							4.2		0.8	1.4				
Unspecified					<b>0</b>									<b>0</b>									<b>0</b>			

**Appendix 3C. Childhood cancer, Western Australia, 2005 (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%
<b>IV. NEUROBLASTOMA &amp; PERIPHERAL NERVOUS SYSTEM TUMOURS</b>																								
All		1			1	0.6	0 - 1.8	100	1	1			2	1.1	0 - 2.7	100	2	1			3	0.9	0 - 1.9	100
		2.0							2.1	1.5							2.0	0.8						
Neuroblastoma/ganglioneurobl.		1			1	0.6	0 - 1.8	100	1	1			2	1.1	0 - 2.7	100	2	1			3	0.9	0 - 1.9	100
		2.0							2.1	1.5							2.0	0.8						
Other					0								0								0			
<b>V. RETINOBLASTOMA</b>																								
All		1		1	2	1.1	0 - 2.7	100					0				1		1		2	0.6	0 - 1.4	100
		8.3		1.5													4.2		0.8					
<b>VI. RENAL TUMOURS</b>																								
All					0				1	1			2	1.1	0 - 2.7	100	1	1			2	0.6	0 - 1.3	100
									2.1	1.5							1.0	0.8						
Nephroblastoma/other non-epithel.					0				1	1			2	1.1	0 - 2.7	100	1	1			2	0.6	0 - 1.3	100
									2.1	1.5							1.0	0.8						
Renal carcinoma					0								0								0			
Unspecified					0								0								0			
<b>VII. HEPATIC TUMOURS</b>																								
All					0				1				1	0.6	0 - 1.9	0	1				1	0.3	0 - 0.9	0
									2.1								1.0							
Hepatoblastoma					0				1				1	0.6	0 - 1.9	0	1				1	0.3	0 - 0.9	0
									2.1								1.0							
Hepatic carcinoma					0								0								0			
Unspecified					0								0								0			
<b>VIII. BONE</b>																								
All			1		1	0.5	0 - 1.4	100			1		1	0.4	0 - 1.2	100		1	1		2	0.4	0 - 1.1	100
			1.5								1.4						0.8	0.7						
Osteosarcoma			1		1	0.5	0 - 1.4	100			1		1	0.4	0 - 1.2	100		1	1		2	0.4	0 - 1.1	100
			1.5								1.4						0.8	0.7						
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, 2005 (WHO International Classification, version 3)

	Males								Females								All							
	Age Group				Total	ASR	95%c.i.	TD%	Age Group				Total	ASR	95%c.i.	TD%	Age Group				Total	ASR	95%c.i.	TD%
	0	1-4	5-9	10-14					0	1-4	5-9	10-14					0	1-4	5-9	10-14				
<b>IX. SOFT TISSUE SARCOMA</b>																								
All				1	<b>1</b>	<b>0.4</b>	0 - 1.2	100			1	<b>1</b>	<b>0.5</b>	0 - 1.5	100			1	1	<b>2</b>	<b>0.4</b>	0 - 1.1	100	
				1.4							1.5							0.8	0.7					
Rhabdomyosarcoma				1	<b>1</b>	<b>0.4</b>	0 - 1.2	100				<b>0</b>								1	<b>0.2</b>	0 - 0.6	100	
				1.4																0.7				
Fibrosarcoma/Neurofibrosarc.					<b>0</b>							<b>0</b>									<b>0</b>			
Kaposi sarcoma					<b>0</b>							<b>0</b>									<b>0</b>			
Other specified					<b>0</b>						1	<b>1</b>	<b>0.5</b>	0 - 1.5	100			1		<b>1</b>	<b>0.2</b>	0 - 0.7	100	
											1.5							0.8						
Unspecified					<b>0</b>							<b>0</b>									<b>0</b>			
<b>X. GONADAL AND GERM CELL</b>																								
All					<b>0</b>						1	<b>1</b>	<b>0.6</b>	0 - 1.9	100			1		<b>1</b>	<b>0.3</b>	0 - 0.9	100	
											2.1							1.0						
Intracranial/spinal					<b>0</b>							<b>0</b>									<b>0</b>			
Other/unspecified non-gonadal					<b>0</b>						1	<b>1</b>	<b>0.6</b>	0 - 1.9	100			1		<b>1</b>	<b>0.3</b>	0 - 0.9	100	
											2.1							1.0						
Gonadal germ cell					<b>0</b>							<b>0</b>									<b>0</b>			
Gonadal carcinoma					<b>0</b>							<b>0</b>									<b>0</b>			
Other and unspecified					<b>0</b>							<b>0</b>									<b>0</b>			
<b>XI. OTHER EPITHELIAL / MELANOMA</b>																								
All					<b>0</b>						2	<b>2</b>	<b>0.8</b>	0 - 2.0	100					2	<b>2</b>	<b>0.4</b>	0 - 1.0	100
											2.9									1.4				
Adrenocortical carcinoma					<b>0</b>							<b>0</b>									<b>0</b>			
Thyroid carcinoma					<b>0</b>							<b>0</b>									<b>0</b>			
Nasopharyngeal carcinoma					<b>0</b>							<b>0</b>									<b>0</b>			
Malignant melanoma					<b>0</b>						1	<b>1</b>	<b>0.4</b>	0 - 1.2	100					1	<b>1</b>	<b>0.2</b>	0 - 0.6	100
											1.4									0.7				
Skin carcinomas					<b>0</b>							<b>0</b>									<b>0</b>			
Other/unspecified carcinoma					<b>0</b>						1	<b>1</b>	<b>0.4</b>	0 - 1.2	100					1	<b>1</b>	<b>0.2</b>	0 - 0.6	100
											1.4									0.7				



## Appendix 3D. Cancer incidence, Western Australia, 2005: Leading types by sex and geographic area

### CHS Kimberley Region

Males						Females					
	Cases	%	ASR	95%c.i.	Risk		Cases	%	ASR	95%c.i.	Risk
Lung	10	20.0	66.3	23.9-109	11	Breast	11	35.5	71.9	28.0-116	14
Prostate	10	20.0	70.4	26.2-115	9	Colorectal	4	12.9	25.3	0 - 51.1	105
Colorectal	4	8.0	23.7	0 - 48.1	32	Colon	3	9.7	20.9	0 - 45.2	170
Colon	4	8.0	23.7	0 - 48.1	32	Rectum	1	3.2	4.4	0 - 13.1	271
Rectum	0					Lung	4	12.9	38.5	0 - 77.1	16
Pharynx	3	6.0	14.5	0 - 31.0	78	Melanoma (skin)	2	6.5	16.0	0 - 38.9	54
Lip, gum & mouth	2	4.0	9.6	0 - 22.8	94	Tongue	1	3.2	4.4	0 - 13.1	271
Oesophagus	2	4.0	8.9	0 - 21.4	135	Major salivary glands	1	3.2	6.1	0 - 18.2	131
Melanoma (skin)	2	4.0	8.1	0 - 19.5	133	Oesophagus	1	3.2	10.1	0 - 29.9	80
Brain	2	4.0	12.8	0 - 31.0	123	Stomach	1	3.2	9.5	0 - 28.1	*
Unknown primary	2	4.0	11.9	0 - 28.7	74	Nasal cavity & sinuses	1	3.2	6.1	0 - 18.2	131
Lymphoma	2	4.0	11.9	0 - 28.7	74	Vagina	1	3.2	5.9	0 - 17.4	170
Lymphoma NOS	0					Cervix	1	3.2	4.4	0 - 13.1	271
Hodgkin lymphoma	0					Unknown primary	1	3.2	11.4	0 - 33.6	36
NHL	2	4.0	11.9	0 - 28.7	74	Lymphoma	1	3.2	4.1	0 - 12.1	295
Leukaemia	2	4.0	11.2	0 - 27.4	136						
All cancers	50	100.0	306.6	219-394	3	All cancers	31	100.0	219.7	139-301	5

### CHS Pilbara Region

Males						Females					
	Cases	%	ASR	95%c.i.	Risk		Cases	%	ASR	95%c.i.	Risk
Prostate	13	31.0	101.7	36.9-167	7	Breast	13	33.3	80.3	28.1-132	10
Colorectal	4	9.5	37.6	0 - 75.1	18	Colorectal	4	10.3	43.5	0 - 91.4	13
Colon	1	2.4	7.3	0 - 21.7	110	Colon	3	7.7	23.7	0 - 52.1	36
Rectum	3	7.1	30.2	0 - 64.9	22	Rectum	1	2.6	19.8	0 - 58.4	21
Lung	4	9.5	21.3	0 - 43.6	41	Lung	4	10.3	70.6	1.0-140	9
Melanoma (skin)	4	9.5	20.6	0 - 45.3	38	Melanoma (skin)	4	10.3	17.7	0.3-35.0	68
Larynx	2	4.8	6.9	0 - 16.6	173	Cervix	3	7.7	12.2	0 - 26.3	110
Mesothelioma	2	4.8	17.3	0 - 41.5	110	Oesophagus	2	5.1	24.7	0 - 64.6	19
Testis	2	4.8	5.5	0 - 13.2	217	Myeloma	2	5.1	23.5	0 - 56.0	35
Unknown primary	2	4.8	21.5	0 - 51.1	53	Lip, gum & mouth	1	2.6	4.1	0 - 12.3	290
Leukaemia	2	4.8	23.7	0 - 59.4	22	Pharynx	1	2.6	4.9	0 - 14.6	203
Leukaemia NOS	1	2.4	17.1	0 - 50.5	24	Nervous system	1	2.6	5.0	0 - 14.9	319
Lymphoid leukaemia	1	2.4	6.6	0 - 19.4	367	Peritoneum/retro-p.	1	2.6	11.8	0 - 34.8	69
Myeloid leukaemia	0					Ovary	1	2.6	4.7	0 - 13.9	257
Leukaemia, other	0					Lymphoma	1	2.6	5.8	0 - 17.3	308
Lip, gum & mouth	1	2.4	3.3	0 - 9.9	300						
Oesophagus	1	2.4	7.3	0 - 21.7	110						
All cancers	42	100.0	298.6	195-402	3	All cancers	39	100.0	313.6	196-431	3

### CHS Midwest Region

Males						Females					
	Cases	%	ASR	95%c.i.	Risk		Cases	%	ASR	95%c.i.	Risk
Prostate	40	22.9	82.3	56.1-108	10	Breast	33	29.5	80.6	52.5-109	12
Lung	26	14.9	53.4	32.2-74.6	17	Melanoma (skin)	17	15.2	47.5	24.2-70.7	19
Colorectal	15	8.6	29.8	14.3-45.3	31	Lung	16	14.3	36.1	17.7-54.5	21
Colon	9	5.1	17.4	5.8-29.0	45	Colorectal	13	11.6	30.4	12.5-48.2	29
Rectum	6	3.4	12.4	2.2-22.6	97	Colon	8	7.1	20.7	5.2-36.1	35
Melanoma (skin)	15	8.6	35.2	17.2-53.2	25	Rectum	5	4.5	9.7	0.7-18.6	149
Unknown primary	13	7.4	28.8	13.0-44.6	26	Bladder & urinary tract	4	3.6	7.1	0 - 14.7	260
Lip, gum & mouth	10	5.7	23.7	9.0-38.5	32	Lymphoma	4	3.6	11.2	0 - 23.2	124
Mesothelioma	8	4.6	18.5	5.5-31.4	44	Lymphoma NOS	0				
Lymphoma	8	4.6	19.2	5.7-32.8	50	Hodgkin lymphoma	1	0.9	4.7	0 - 14.0	339
Lymphoma NOS	0					NHL	3	2.7	6.5	0 - 14.0	196
Hodgkin lymphoma	1	0.6	2.7	0 - 8.1	293	Ovary	3	2.7	8.4	0 - 18.9	198
NHL	7	4.0	16.5	4.1-28.9	61	Thyroid gland	3	2.7	8.3	0 - 17.7	136
Tongue	5	2.9	11.0	1.2-20.8	71	Brain	2	1.8	7.2	0 - 17.4	134
Kidney	4	2.3	8.4	0 - 16.8	168	Unknown primary	2	1.8	3.7	0 - 9.1	166
Bladder & urinary tract	4	2.3	8.8	0 - 17.6	81	Leukaemia	2	1.8	5.6	0 - 13.4	142
Pharynx	3	1.7	8.0	0 - 17.0	129						
All cancers	175	100.0	382.0	325-439	3	All cancers	112	100.0	279.0	225-333	4

## Appendix 3D. Cancer incidence, Western Australia, 2005: 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	72	35.1	110.0	84.3-136	7	Breast	42	29.2	85.0	58.3-112	11
Colorectal	27	13.2	41.0	25.3-56.7	23	Colorectal	20	13.9	33.0	18.0-48.0	19
Colon	19	9.3	27.6	15.0-40.2	40	Colon	16	11.1	26.7	13.1-40.2	23
Rectum	8	3.9	13.4	4.0-22.7	52	Rectum	4	2.8	6.3	0 - 12.7	92
Lung	24	11.7	35.6	21.1-50.2	21	Melanoma (skin)	17	11.8	29.0	14.6-43.5	35
Melanoma (skin)	17	8.3	31.9	15.6-48.2	28	Pancreas	7	4.9	10.1	2.4-17.9	65
Lip, gum & mouth	8	3.9	13.9	4.2-23.6	62	Lung	7	4.9	10.3	2.1-18.6	125
Kidney	7	3.4	11.8	2.9-20.6	77	Uterus	6	4.2	11.8	2.3-21.3	53
Bladder & urinary tract	7	3.4	9.9	2.4-17.4	83	Ovary	6	4.2	11.7	2.0-21.3	90
Oesophagus	5	2.4	8.2	1.0-15.3	64	Unknown primary	5	3.5	7.0	0.5-13.6	101
Unknown primary	5	2.4	7.5	0.8-14.2	118	Lip, gum & mouth	4	2.8	9.1	0.2-18.1	107
Lymphoma	5	2.4	13.9	0.4-27.4	97	Cervix	3	2.1	7.0	0 - 14.9	149
Lymphoma NOS	0					Brain	3	2.1	4.5	0 - 9.8	373
Hodgkin lymphoma	1	0.5	3.7	0 - 10.8	548	Lymphoma	3	2.1	5.2	0 - 11.5	221
NHL	4	2.0	10.3	0 - 21.7	117						
Leukaemia	5	2.4	8.0	0.8-15.2	174						
<b>All cancers</b>	<b>205</b>	<b>100.0</b>	<b>329.6</b>	<b>283-376</b>	<b>3</b>	<b>All cancers</b>	<b>144</b>	<b>100.0</b>	<b>259.4</b>	<b>215-304</b>	<b>4</b>

### CHS Goldfields Region

Males						Females					
	Cases	%	ASR	95%c.i.	Risk		Cases	%	ASR	95%c.i.	Risk
Prostate	25	29.1	89.4	53.9-125	9	Breast	16	25.4	57.2	28.5-86.0	19
Lung	10	11.6	35.4	13.1-57.6	25	Melanoma (skin)	8	12.7	27.9	8.2-47.7	38
Bladder & urinary tract	8	9.3	24.4	7.4-41.3	105	Colorectal	7	11.1	27.0	6.1-47.8	35
Melanoma (skin)	7	8.1	25.2	6.2-44.3	30	Colon	4	6.3	16.7	0 - 33.5	52
Colorectal	6	7.0	17.3	3.3-31.4	58	Rectum	3	4.8	10.3	0 - 22.7	104
Colon	4	4.7	10.8	0.2-21.4	132	Lung	6	9.5	19.8	3.0-36.6	40
Rectum	2	2.3	6.5	0 - 15.8	102	Gallbladder / bile ducts	3	4.8	9.6	0 - 21.0	67
Lymphoma	6	7.0	23.4	4.3-42.5	27	Uterus	3	4.8	11.4	0 - 24.6	96
Lymphoma NOS	0					Thyroid gland	3	4.8	9.3	0 - 19.8	130
Hodgkin lymphoma	1	1.2	3.8	0 - 11.2	424	Kidney	2	3.2	6.1	0 - 14.7	196
NHL	5	5.8	19.6	2.0-37.2	29	Lymphoma	2	3.2	6.7	0 - 16.2	211
Stomach	4	4.7	14.7	0.2-29.2	45	Lymphoma NOS	0				
Unknown primary	4	4.7	15.2	0.0-30.4	38	Hodgkin lymphoma	1	1.6	4.1	0 - 12.1	393
Liver	3	3.5	9.7	0 - 20.9	107	NHL	1	1.6	2.6	0 - 7.8	455
Larynx	3	3.5	11.8	0 - 25.0	62	Stomach	1	1.6	3.0	0 - 8.9	*
Lip, gum & mouth	2	2.3	7.8	0 - 18.6	103	Small intestine	1	1.6	1.9	0 - 5.5	*
						Liver	1	1.6	2.8	0 - 8.2	434
<b>All cancers</b>	<b>86</b>	<b>100.0</b>	<b>302.3</b>	<b>238-367</b>	<b>3</b>	<b>All cancers</b>	<b>63</b>	<b>100.0</b>	<b>218.2</b>	<b>163-274</b>	<b>5</b>

### CHS Great Southern Region

Males						Females					
	Cases	%	ASR	95%c.i.	Risk		Cases	%	ASR	95%c.i.	Risk
Prostate	39	26.4	77.1	52.2-102	11	Breast	27	24.1	68.0	41.7-94.3	14
Melanoma (skin)	24	16.2	64.8	37.3-92.2	15	Lung	17	15.2	30.9	15.3-46.4	24
Colorectal	16	10.8	32.1	16.1-48.1	23	Colorectal	15	13.4	28.4	12.8-44.0	29
Colon	10	6.8	19.4	7.2-31.7	42	Colon	7	6.3	13.4	2.5-24.2	66
Rectum	6	4.1	12.7	2.3-23.0	50	Rectum	8	7.1	15.0	3.8-26.2	51
Lung	16	10.8	34.0	16.9-51.2	23	Melanoma (skin)	13	11.6	23.9	9.5-38.2	39
Bladder & urinary tract	6	4.1	11.0	1.7-20.3	90	Thyroid gland	4	3.6	15.0	0 - 30.6	86
Lymphoma	5	3.4	11.8	0.3-23.4	89	Uterus	3	2.7	8.6	0 - 18.3	105
Lymphoma NOS	1	0.7	1.4	0 - 4.1	*	Ovary	3	2.7	6.6	0 - 14.4	183
Hodgkin lymphoma	0					Bladder & urinary tract	3	2.7	3.7	0 - 8.4	197
NHL	4	2.7	10.4	0 - 21.6	89	Myelodysplastic diseases	3	2.7	4.9	0 - 11.1	282
Leukaemia	5	3.4	13.1	1.4-24.8	90	Stomach	2	1.8	3.8	0 - 9.8	412
Leukaemia NOS	0					Skin (NMSC exc. SCC/BCC)	2	1.8	2.9	0 - 7.1	197
Lymphoid leukaemia	3	2.0	8.6	0 - 18.4	115	Kidney	2	1.8	10.2	0 - 25.6	183
Myeloid leukaemia	2	1.4	4.5	0 - 10.9	416	Brain	2	1.8	8.3	0 - 20.8	130
Leukaemia, other	0					Unknown primary	2	1.8	3.4	0 - 8.8	384
Pancreas	4	2.7	6.8	0 - 14.1	158	Myeloprolif. d/o (chronic)	2	1.8	2.9	0 - 7.1	197
<b>All cancers</b>	<b>148</b>	<b>100.0</b>	<b>326.7</b>	<b>272-382</b>	<b>3</b>	<b>All cancers</b>	<b>112</b>	<b>100.0</b>	<b>240.9</b>	<b>191-291</b>	<b>4</b>

## Appendix 3D. Cancer incidence, Western Australia, 2005: 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	102	29.6	94.2	75.4-113	8	Breast	88	31.1	89.7	70.4-109	10
Melanoma (skin)	52	15.1	54.1	39.2-69.1	16	Colorectal	40	14.1	32.3	21.6-43.0	26
Lung	38	11.0	30.8	20.5-41.0	27	Colon	29	10.2	22.6	13.8-31.3	37
Colorectal	36	10.4	31.8	20.9-42.7	27	Rectum	11	3.9	9.7	3.6-15.9	91
Colon	22	6.4	20.5	11.6-29.3	41	Melanoma (skin)	34	12.0	34.6	22.2-47.0	29
Rectum	14	4.1	11.3	5.0-17.7	82	Lung	21	7.4	17.8	9.6-26.0	46
Lymphoma	15	4.3	15.4	7.5-23.3	45	Lymphoma	15	5.3	13.4	5.6-21.2	91
Lymphoma NOS	0					Lymphoma NOS	0				
Hodgkin lymphoma	0					Hodgkin lymphoma	2	0.7	3.8	0 - 9.1	443
NHL	15	4.3	15.4	7.5-23.3	45	NHL	13	4.6	9.6	3.9-15.3	114
Pancreas	11	3.2	10.2	4.0-16.4	101	Uterus	10	3.5	9.7	3.4-16.1	80
Leukaemia	8	2.3	7.4	2.1-12.6	97	Stomach	6	2.1	5.6	0.8-10.3	190
Leukaemia NOS	0					Unknown primary	6	2.1	4.6	0.5-8.6	173
Lymphoid leukaemia	6	1.7	5.1	0.9-9.4	128	Lip, gum & mouth	5	1.8	5.3	0.6-10.0	120
Myeloid leukaemia	2	0.6	2.2	0 - 5.4	394	Cervix	5	1.8	5.9	0.5-11.3	137
Leukaemia, other	0					Ovary	5	1.8	4.8	0.4-9.3	188
Stomach	7	2.0	6.6	1.5-11.6	115	Kidney	5	1.8	5.3	0.4-10.1	173
Kidney	7	2.0	6.3	1.5-11.1	141	Bladder & urinary tract	5	1.8	4.4	0.4-8.4	111
Bladder & urinary tract	7	2.0	5.5	1.3-9.6	344	Thyroid gland	5	1.8	5.3	0.6-9.9	125
Myeloma	7	2.0	5.0	1.0-9.0	296	Leukaemia	5	1.8	3.3	0.1-6.5	332
Oesophagus	6	1.7	6.0	1.0-11.0	167	Leukaemia NOS	0				
Testis	6	1.7	8.5	1.5-15.6	160	Lymphoid leukaemia	2	0.7	0.8	0 - 1.9	*
Lip, gum & mouth	5	1.4	3.9	0.3-7.4	484	Myeloid leukaemia	3	1.1	2.5	0 - 5.5	332
Unknown primary	5	1.4	4.5	0.4-8.5	128	Leukaemia, other	0				
Mesothelioma	4	1.2	3.6	0 - 7.2	296	Myelodysplastic diseases	4	1.4	1.8	0.0-3.6	*
Brain	4	1.2	4.7	0.1-9.3	159	Gallbladder / bile ducts	3	1.1	2.5	0 - 5.6	350
Pharynx	3	0.9	2.8	0 - 6.1	496	Pancreas	3	1.1	1.4	0 - 3.0	*
Nasal cavity & sinuses	3	0.9	3.8	0 - 8.2	294	Brain	3	1.1	2.4	0 - 5.4	471
Nervous system	2	0.6	1.6	0 - 4.0	1130	Myeloprolif. d/o (chronic)	3	1.1	2.5	0 - 5.5	332
Myelodysplastic diseases	2	0.6	1.7	0 - 4.2	533	Oesophagus	2	0.7	1.6	0 - 4.2	634
<b>All cancers</b>	<b>345</b>	<b>100.0</b>	<b>323.4</b>	<b>288-359</b>	<b>3</b>	<b>All cancers</b>	<b>283</b>	<b>100.0</b>	<b>265.5</b>	<b>233-298</b>	<b>4</b>

### WA Country - all

Males						Females					
	Cases	%	ASR	95%c.i.	Risk		Cases	%	ASR	95%c.i.	Risk
Prostate	301	28.6	91.7	81.2-102	9	Breast	230	29.3	80.1	69.5-90.6	12
Lung	128	12.2	38.1	31.3-44.9	22	Colorectal	103	13.1	31.6	25.1-38.0	25
Melanoma (skin)	121	11.5	39.9	32.7-47.1	21	Colon	70	8.9	21.6	16.2-26.9	36
Colorectal	108	10.3	32.1	25.9-38.3	27	Rectum	33	4.2	10.0	6.4-13.6	83
Colon	69	6.6	20.4	15.5-25.3	44	Melanoma (skin)	95	12.1	31.7	25.1-38.3	31
Rectum	39	3.7	11.7	8.0-15.5	68	Lung	75	9.6	22.9	17.4-28.3	34
Lymphoma	42	4.0	14.9	10.2-19.5	56	Lymphoma	27	3.4	9.0	5.3-12.8	145
Lymphoma NOS	1	0.1	0.2	0 - 0.6	*	Lymphoma NOS	0				
Hodgkin lymphoma	3	0.3	1.5	0 - 3.2	908	Hodgkin lymphoma	5	0.6	2.9	0.4-5.5	571
NHL	38	3.6	13.2	8.9-17.5	59	NHL	22	2.8	6.1	3.4-8.8	193
Unknown primary	34	3.2	10.6	7.0-14.2	71	Uterus	23	2.9	8.3	4.8-11.7	92
Bladder & urinary tract	33	3.1	9.2	5.9-12.4	121	Ovary	19	2.4	6.4	3.4-9.4	173
Lip, gum & mouth	31	2.9	9.9	6.4-13.4	88	Thyroid gland	17	2.2	6.4	3.3-9.4	145
Leukaemia	25	2.4	8.2	4.8-11.6	124	Unknown primary	16	2.0	4.4	2.1-6.7	164
Leukaemia NOS	1	0.1	0.3	0 - 1.0	1201	Cervix	15	1.9	5.9	2.9-9.0	162
Lymphoid leukaemia	14	1.3	4.8	2.1-7.5	217	Bladder & urinary tract	15	1.9	4.1	1.9-6.3	156
Myeloid leukaemia	10	1.0	3.1	1.1-5.0	376	Pancreas	13	1.7	3.2	1.4-5.0	292
Leukaemia, other	0					Lip, gum & mouth	11	1.4	3.9	1.6-6.3	205
Kidney	24	2.3	7.2	4.3-10.2	132	Stomach	11	1.4	3.3	1.2-5.3	363
Pancreas	20	1.9	6.1	3.4-8.8	152	Kidney	11	1.4	4.4	1.7-7.2	241
Oesophagus	19	1.8	6.3	3.4-9.1	120	Brain	11	1.4	4.0	1.5-6.5	241
Stomach	19	1.8	6.2	3.4-9.0	110	Leukaemia	11	1.4	3.4	1.3-5.5	282
Mesothelioma	16	1.5	5.0	2.5-7.5	158	Leukaemia NOS	0				
Myeloma	13	1.2	3.6	1.6-5.7	285	Lymphoid leukaemia	5	0.6	1.4	0.1-2.8	812
Myelodysplastic diseases	13	1.2	3.7	1.6-5.7	227	Myeloid leukaemia	6	0.8	2.0	0.3-3.6	431
Testis	12	1.1	4.6	1.9-7.2	288	Leukaemia, other	0				
Tongue	10	1.0	3.2	1.2-5.2	281	Myelodysplastic diseases	10	1.3	2.4	0.8-4.0	512
Pharynx	10	1.0	3.2	1.2-5.1	353	Gallbladder / bile ducts	8	1.0	2.1	0.5-3.6	438
Brain	10	1.0	3.9	1.4-6.4	244	Skin (NMSC exc. SCC/BCC)	7	0.9	2.2	0.4-3.9	553
Gallbladder / bile ducts	8	0.8	2.4	0.7-4.2	336	Myeloprolif. d/o (chronic)	7	0.9	2.0	0.4-3.5	385
<b>All cancers</b>	<b>1051</b>	<b>100.0</b>	<b>326.9</b>	<b>307-347</b>	<b>3</b>	<b>All cancers</b>	<b>784</b>	<b>100.0</b>	<b>257.5</b>	<b>239-276</b>	<b>4</b>

## Appendix 3D. Cancer incidence, Western Australia, 2005: 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	584	27.9	101.2	92.8-110	8	Breast	475	28.8	79.9	72.5-87.3	11
Colorectal	245	11.7	41.9	36.5-47.3	20	Colorectal	214	13.0	29.2	24.9-33.5	29
Colon	157	7.5	26.7	22.4-31.0	31	Colon	146	8.9	19.4	15.9-22.9	45
Rectum	86	4.1	14.8	11.6-18.0	53	Rectum	66	4.0	9.4	7.0-11.9	86
Melanoma (skin)	243	11.6	43.3	37.7-48.9	21	Melanoma (skin)	146	8.9	25.3	21.0-29.6	38
Lung	222	10.6	35.3	30.5-40.1	25	Lung	127	7.7	17.7	14.3-21.0	47
Lymphoma	76	3.6	14.3	11.0-17.6	69	Lymphoma	79	4.8	13.7	10.5-16.9	67
Lymphoma NOS	0					Lymphoma NOS	3	0.2	0.4	0 - 0.9	1690
Hodgkin lymphoma	9	0.4	1.9	0.6-3.2	739	Hodgkin lymphoma	9	0.5	2.2	0.7-3.7	672
NHL	67	3.2	12.4	9.3-15.4	76	NHL	67	4.1	11.1	8.3-13.9	78
Kidney	68	3.2	11.5	8.7-14.3	72	Uterus	64	3.9	10.2	7.6-12.9	83
Bladder & urinary tract	67	3.2	10.5	7.9-13.1	100	Unknown primary	49	3.0	6.0	4.2-7.9	153
Leukaemia	61	2.9	12.5	9.0-16.0	95	Ovary	43	2.6	7.1	4.9-9.3	120
Leukaemia NOS	2	0.1	0.5	0 - 1.3	5334	Thyroid gland	42	2.5	8.5	5.8-11.1	127
Lymphoid leukaemia	30	1.4	6.7	4.1-9.3	164	Pancreas	41	2.5	5.9	3.9-7.9	151
Myeloid leukaemia	29	1.4	5.3	3.1-7.5	232	Cervix	36	2.2	6.0	3.9-8.0	172
Leukaemia, other	0					Leukaemia	36	2.2	5.4	3.2-7.6	250
Unknown primary	60	2.9	9.2	6.7-11.6	119	Leukaemia NOS	1	0.1	0.1	0 - 0.2	*
Stomach	47	2.2	7.3	5.2-9.5	122	Lymphoid leukaemia	18	1.1	2.0	0.9-3.1	726
Pancreas	43	2.1	7.2	5.0-9.4	114	Myeloid leukaemia	17	1.0	3.3	1.4-5.2	380
Brain	34	1.6	6.6	4.3-8.9	122	Leukaemia, other	0				
Liver	33	1.6	5.6	3.6-7.5	128	Kidney	31	1.9	5.1	3.1-7.1	179
Mesothelioma	28	1.3	3.9	2.4-5.4	296	Bladder & urinary tract	31	1.9	3.3	2.0-4.6	293
Oesophagus	27	1.3	4.9	3.0-6.7	174	Myeloma	27	1.6	4.2	2.5-5.9	233
Testis	27	1.3	5.8	3.6-8.1	235	Myelodysplastic diseases	24	1.5	2.7	1.4-3.9	651
Lip, gum & mouth	25	1.2	4.5	2.7-6.3	258	Stomach	22	1.3	2.8	1.5-4.1	340
Myeloma	23	1.1	3.5	2.0-5.0	272	Brain	18	1.1	2.9	1.5-4.3	320
Myelodysplastic diseases	23	1.1	3.4	2.0-4.9	317	Myeloprolif. d/o (chronic)	17	1.0	1.8	0.8-2.8	486
Skin (NMSC exc. SCC/BCC)	22	1.1	3.3	1.9-4.8	451	Lip, gum & mouth	16	1.0	2.2	1.0-3.3	330
Pharynx	15	0.7	2.8	1.4-4.2	311	Liver	13	0.8	1.7	0.7-2.7	532
<b>All cancers</b>	<b>2093</b>	<b>100.0</b>	<b>361.4</b>	<b>345-377</b>	<b>3</b>	<b>All cancers</b>	<b>1648</b>	<b>100.0</b>	<b>256.6</b>	<b>243-270</b>	<b>4</b>

### South Metro AHS

	Males					Females					
	Cases	%	ASR	95%c.i.	Risk	Cases	%	ASR	95%c.i.	Risk	
Prostate	586	29.1	104.6	95.9-113	8	Breast	449	28.9	82.9	74.9-90.9	11
Lung	244	12.1	40.3	35.0-45.6	22	Colorectal	190	12.2	28.7	24.2-33.2	31
Colorectal	223	11.1	39.9	34.5-45.3	20	Colon	139	8.9	20.7	16.9-24.5	43
Colon	134	6.7	23.7	19.5-27.8	33	Rectum	49	3.2	7.7	5.3-10.0	111
Rectum	87	4.3	16.0	12.5-19.4	51	Melanoma (skin)	151	9.7	27.9	23.2-32.6	34
Melanoma (skin)	202	10.0	39.0	33.4-44.5	24	Lung	110	7.1	17.2	13.7-20.6	51
Lymphoma	75	3.7	14.7	11.2-18.1	61	Lymphoma	65	4.2	10.7	7.9-13.5	85
Lymphoma NOS	1	0.0	0.2	0 - 0.7	5114	Lymphoma NOS	3	0.2	0.4	0 - 0.8	4999
Hodgkin lymphoma	7	0.3	1.9	0.5-3.3	583	Hodgkin lymphoma	5	0.3	1.2	0.1-2.4	940
NHL	67	3.3	12.6	9.4-15.7	70	NHL	57	3.7	9.1	6.6-11.6	95
Bladder & urinary tract	73	3.6	11.7	8.9-14.6	86	Unknown primary	57	3.7	7.6	5.4-9.7	134
Unknown primary	60	3.0	10.8	7.8-13.7	96	Uterus	56	3.6	9.6	7.0-12.3	84
Kidney	51	2.5	9.7	7.0-12.4	87	Ovary	46	3.0	8.1	5.6-10.6	107
Pancreas	50	2.5	8.9	6.3-11.4	88	Thyroid gland	44	2.8	9.3	6.5-12.2	112
Stomach	44	2.2	7.4	5.1-9.7	133	Leukaemia	37	2.4	7.3	4.6-10.0	136
Lip, gum & mouth	42	2.1	8.1	5.6-10.7	122	Leukaemia NOS	2	0.1	0.2	0 - 0.6	2368
Leukaemia	39	1.9	9.2	5.9-12.5	121	Lymphoid leukaemia	15	1.0	2.7	1.2-4.2	295
Leukaemia NOS	1	0.0	0.2	0 - 0.7	5122	Myeloid leukaemia	20	1.3	4.4	2.1-6.6	282
Lymphoid leukaemia	22	1.1	6.0	3.1-8.8	216	Leukaemia, other	0				
Myeloid leukaemia	16	0.8	3.0	1.5-4.6	292	Pancreas	36	2.3	4.9	3.1-6.6	155
Leukaemia, other	0					Kidney	32	2.1	5.5	3.5-7.5	145
Oesophagus	32	1.6	5.7	3.7-7.7	147	Cervix	29	1.9	6.0	3.7-8.3	175
Mesothelioma	31	1.5	6.0	3.8-8.1	117	Bladder & urinary tract	25	1.6	3.8	2.2-5.4	203
Testis	28	1.4	7.5	4.7-10.3	185	Myeloma	25	1.6	3.4	1.9-4.9	287
Brain	27	1.3	6.0	3.6-8.4	143	Brain	23	1.5	4.5	2.4-6.7	258
Liver	25	1.2	4.6	2.7-6.4	196	Myelodysplastic diseases	20	1.3	3.4	1.6-5.1	325
Myelodysplastic diseases	23	1.1	3.3	1.8-4.7	423	Stomach	15	1.0	2.3	1.0-3.6	340
Myeloma	18	0.9	3.0	1.6-4.4	338	Skin (NMSC exc. SCC/BCC)	14	0.9	2.1	0.8-3.4	733
Skin (NMSC exc. SCC/BCC)	16	0.8	2.5	1.2-3.8	402	Lip, gum & mouth	13	0.8	2.2	0.9-3.5	434
Thyroid gland	16	0.8	3.7	1.8-5.5	282	Anus	12	0.8	2.3	1.0-3.6	336
<b>All cancers</b>	<b>2012</b>	<b>100.0</b>	<b>365.9</b>	<b>349-383</b>	<b>3</b>	<b>All cancers</b>	<b>1555</b>	<b>100.0</b>	<b>267.4</b>	<b>253-282</b>	<b>4</b>

## Appendix 3D. Cancer incidence, Western Australia, 2005: Leading types by sex and geographic area

### WA Metro - all

	Males					Females					
	Cases	%	ASR	95%c.i.	Risk	Cases	%	ASR	95%c.i.	Risk	
Prostate	1170	28.5	103.0	96.9-109	8	Breast	924	28.8	81.3	75.9-86.7	11
Colorectal	468	11.4	41.0	37.2-44.9	20	Colorectal	404	12.6	29.0	25.9-32.1	30
Colon	291	7.1	25.3	22.3-28.3	32	Colon	285	8.9	20.0	17.5-22.6	44
Rectum	173	4.2	15.4	13.0-17.8	52	Rectum	115	3.6	8.6	6.9-10.3	96
Lung	466	11.4	37.7	34.2-41.3	23	Melanoma (skin)	297	9.3	26.5	23.3-29.7	36
Melanoma (skin)	445	10.8	41.2	37.3-45.2	22	Lung	237	7.4	17.3	14.9-19.7	49
Lymphoma	151	3.7	14.5	12.1-16.9	65	Lymphoma	144	4.5	12.3	10.2-14.5	74
Lymphoma NOS	1	0.0	0.1	0 - 0.3	*	Lymphoma NOS	6	0.2	0.4	0.1-0.7	2527
Hodgkin lymphoma	16	0.4	1.9	0.9-2.9	647	Hodgkin lymphoma	14	0.4	1.7	0.8-2.7	774
NHL	134	3.3	12.5	10.3-14.7	72	NHL	124	3.9	10.2	8.3-12.1	85
Bladder & urinary tract	140	3.4	11.1	9.2-13.0	93	Uterus	120	3.7	10.0	8.1-11.9	83
Unknown primary	120	2.9	9.9	8.0-11.8	107	Unknown primary	106	3.3	6.8	5.3-8.2	144
Kidney	119	2.9	10.6	8.6-12.6	79	Ovary	89	2.8	7.6	5.9-9.2	113
Leukaemia	100	2.4	10.9	8.5-13.3	106	Thyroid gland	86	2.7	8.8	6.9-10.8	120
Leukaemia NOS	3	0.1	0.4	0 - 0.8	5326	Pancreas	77	2.4	5.5	4.1-6.8	152
Lymphoid leukaemia	52	1.3	6.3	4.4-8.3	186	Leukaemia	73	2.3	6.3	4.6-8.0	178
Myeloid leukaemia	45	1.1	4.2	2.9-5.6	256	Leukaemia NOS	3	0.1	0.1	0 - 0.3	4752
Leukaemia, other	0					Lymphoid leukaemia	33	1.0	2.4	1.4-3.3	425
Pancreas	93	2.3	8.0	6.3-9.7	100	Myeloid leukaemia	37	1.2	3.8	2.3-5.2	328
Stomach	91	2.2	7.4	5.8-9.0	127	Leukaemia, other	0				
Lip, gum & mouth	67	1.6	6.2	4.7-7.7	168	Cervix	65	2.0	6.0	4.5-7.5	173
Brain	61	1.5	6.3	4.7-7.9	132	Kidney	63	2.0	5.3	3.9-6.7	161
Oesophagus	59	1.4	5.3	3.9-6.6	160	Bladder & urinary tract	56	1.7	3.5	2.5-4.6	242
Mesothelioma	59	1.4	4.9	3.6-6.2	169	Myeloma	52	1.6	3.8	2.7-5.0	255
Liver	58	1.4	5.1	3.7-6.4	155	Myelodysplastic diseases	44	1.4	3.0	1.9-4.1	437
Testis	55	1.3	6.6	4.8-8.4	209	Brain	41	1.3	3.7	2.4-5.0	286
Myelodysplastic diseases	46	1.1	3.4	2.3-4.4	363	Stomach	37	1.2	2.6	1.7-3.5	339
Myeloma	41	1.0	3.2	2.2-4.3	302	Lip, gum & mouth	29	0.9	2.2	1.3-3.0	377
Skin (NMSC exc. SCC/BCC)	38	0.9	2.9	2.0-3.9	421	Liver	24	0.7	1.9	1.0-2.8	489
Thyroid gland	30	0.7	3.1	2.0-4.3	309	Myeloprolif. d/o (chronic)	21	0.7	1.3	0.7-2.0	758
<b>All cancers</b>	<b>4105</b>	<b>100.0</b>	<b>363.7</b>	<b>352-375</b>	<b>3</b>	<b>All cancers</b>	<b>3203</b>	<b>100.0</b>	<b>261.6</b>	<b>252-271</b>	<b>4</b>

### All Western Australia

	Males					Females					
	Cases	%	ASR	95%c.i.	Risk	Cases	%	ASR	95%c.i.	Risk	
Prostate	1471	28.5	100.5	95.2-106	8	Breast	1154	28.9	81.2	76.4-86.0	11
Lung	595	11.5	37.9	34.8-41.1	23	Colorectal	507	12.7	29.5	26.7-32.3	29
Colorectal	577	11.2	39.1	35.8-42.4	21	Colon	355	8.9	20.3	18.0-22.6	42
Colon	360	7.0	24.2	21.6-26.7	34	Rectum	148	3.7	8.9	7.3-10.4	93
Rectum	213	4.1	14.6	12.6-16.7	55	Melanoma (skin)	392	9.8	27.6	24.7-30.5	35
Melanoma (skin)	566	11.0	41.0	37.5-44.5	22	Lung	312	7.8	18.4	16.2-20.6	45
Lymphoma	193	3.7	14.6	12.5-16.7	63	Lymphoma	171	4.3	11.6	9.7-13.5	83
Lymphoma NOS	2	0.0	0.1	0 - 0.3	*	Lymphoma NOS	6	0.2	0.3	0.0-0.6	3167
Hodgkin lymphoma	19	0.4	1.8	1.0-2.7	692	Hodgkin lymphoma	19	0.5	2.0	1.1-2.9	728
NHL	172	3.3	12.7	10.7-14.6	69	NHL	146	3.7	9.3	7.7-10.9	96
Bladder & urinary tract	173	3.4	10.6	9.0-12.3	98	Uterus	144	3.6	9.7	8.0-11.4	84
Unknown primary	155	3.0	10.2	8.5-11.8	96	Unknown primary	122	3.1	6.3	5.0-7.5	148
Kidney	143	2.8	9.8	8.2-11.5	87	Ovary	108	2.7	7.4	5.9-8.8	121
Leukaemia	125	2.4	10.2	8.2-12.2	110	Thyroid gland	103	2.6	8.3	6.7-10.0	124
Leukaemia NOS	4	0.1	0.4	0 - 0.7	3099	Pancreas	90	2.3	5.0	3.8-6.1	169
Lymphoid leukaemia	66	1.3	5.9	4.3-7.5	194	Leukaemia	84	2.1	5.7	4.2-7.1	193
Myeloid leukaemia	55	1.1	4.0	2.8-5.1	275	Leukaemia NOS	3	0.1	0.1	0 - 0.3	5896
Leukaemia, other	0					Lymphoid leukaemia	38	1.0	2.2	1.4-3.0	469
Pancreas	113	2.2	7.6	6.2-9.0	108	Myeloid leukaemia	43	1.1	3.4	2.2-4.5	347
Stomach	111	2.1	7.2	5.8-8.6	123	Leukaemia, other	0				
Lip, gum & mouth	98	1.9	7.0	5.6-8.5	140	Cervix	80	2.0	6.0	4.6-7.3	171
Oesophagus	78	1.5	5.5	4.3-6.7	148	Kidney	74	1.9	5.2	3.9-6.5	171
Mesothelioma	75	1.5	4.9	3.8-6.1	166	Bladder & urinary tract	71	1.8	3.6	2.7-4.6	219
Brain	71	1.4	5.8	4.4-7.2	146	Myeloma	58	1.5	3.5	2.5-4.5	274
Testis	68	1.3	6.2	4.7-7.7	219	Myelodysplastic diseases	54	1.4	2.9	2.0-3.8	454
Liver	65	1.3	4.4	3.3-5.5	182	Brain	52	1.3	3.7	2.6-4.8	277
Myelodysplastic diseases	59	1.1	3.4	2.5-4.4	320	Stomach	48	1.2	2.7	1.9-3.6	342
Myeloma	54	1.0	3.3	2.4-4.3	298	Lip, gum & mouth	40	1.0	2.6	1.7-3.4	320
Skin (NMSC exc. SCC/BCC)	39	0.8	2.4	1.6-3.1	497	Liver	29	0.7	1.8	1.1-2.6	525
Pharynx	38	0.7	2.8	1.9-3.7	319	Myeloprolif. d/o (chronic)	28	0.7	1.4	0.8-2.0	634
<b>All cancers</b>	<b>5163</b>	<b>100.0</b>	<b>356.1</b>	<b>346-366</b>	<b>3</b>	<b>All cancers</b>	<b>3988</b>	<b>100.0</b>	<b>260.9</b>	<b>252-270</b>	<b>4</b>

## Appendix 3E. Cancer mortality, Western Australia, 2005: Leading types by sex and geographic area

### CHS Kimberley Region

Males						Females					
	Cases	%	ASR	95%c.i.	Risk		Cases	%	ASR	95%c.i.	Risk
Lung	6	26.1	38.0	6.6-69.4	26	Lung	4	28.6	33.6	0 - 67.7	19
Pharynx	3	13.0	14.4	0 - 30.7	68	Colorectal	2	14.3	10.0	0 - 23.8	*
Oesophagus	2	8.7	10.4	0 - 25.1	293	Colon	2	14.3	10.0	0 - 23.8	*
Liver	2	8.7	11.1	0 - 26.6	249	Rectum	0				-
Prostate	2	8.7	14.1	0 - 33.6	57	Unknown primary	2	14.3	17.5	0 - 42.8	28
Thyroid gland	2	8.7	15.6	0 - 37.4	34	Parotid gland	1	7.1	11.1	0 - 32.7	55
Lip, gum & mouth	1	4.3	8.5	0 - 25.0	72	Oesophagus	1	7.1	10.1	0 - 29.9	80
Tongue	1	4.3	4.7	0 - 13.8	172	Connective/ soft tissues	1	7.1	6.1	0 - 18.2	131
Stomach	1	4.3	6.3	0 - 18.6	*	Breast	1	7.1	11.4	0 - 33.6	36
Gallbladder / bile ducts	1	4.3	8.6	0 - 25.4	47	Cervix	1	7.1	6.0	0 - 17.6	202
Skin (not melanoma)	1	4.3	5.6	0 - 16.4	*	Ovary	1	7.1	11.4	0 - 33.6	36
Unknown primary	1	4.3	7.1	0 - 20.9	114						
<b>All cancers</b>	<b>23</b>	<b>100.0</b>	<b>144.2</b>	<b>84.0-204</b>	<b>7</b>	<b>All cancers</b>	<b>14</b>	<b>100.0</b>	<b>117.1</b>	<b>53.1-181</b>	<b>6</b>

### CHS Pilbara Region

Males						Females					
	Cases	%	ASR	95%c.i.	Risk		Cases	%	ASR	95%c.i.	Risk
Lung	3	23.1	18.5	0 - 40.1	44	Lung	5	71.4	87.8	10.4-165	8
Oesophagus	2	15.4	18.8	0 - 45.4	36	Colorectal	1	14.3	19.8	0 - 58.4	21
Unknown primary	2	15.4	24.4	0 - 60.7	20	Colon	0				-
Pancreas	1	7.7	2.9	0 - 8.7	411	Rectum	1	14.3	19.8	0 - 58.4	21
Mesothelioma	1	7.7	10.0	0 - 29.4	*	Mesothelioma	1	14.3	18.5	0 - 54.7	33
Prostate	1	7.7	11.5	0 - 33.9	53						
Leukaemia	1	7.7	17.1	0 - 50.5	24						
Leukaemia NOS	1	7.7	17.1	0 - 50.5	24						
Lymphoid leukaemia	0				-						
Myeloid leukaemia	0				-						
Leukaemia, other	0				-						
Myelodysplastic diseases	1	7.7	3.3	0 - 9.9	300						
Immunoprolif. d/o (chronic)	1	7.7	10.0	0 - 29.4	*						
<b>All cancers</b>	<b>13</b>	<b>100.0</b>	<b>116.5</b>	<b>46.5-186</b>	<b>6</b>	<b>All cancers</b>	<b>7</b>	<b>100.0</b>	<b>126.2</b>	<b>32.7-220</b>	<b>5</b>

### CHS Midwest Region

Males						Females					
	Cases	%	ASR	95%c.i.	Risk		Cases	%	ASR	95%c.i.	Risk
Lung	17	22.7	32.0	16.3-47.8	36	Lung	4	18.2	8.3	0 - 16.9	101
Prostate	9	12.0	17.2	5.6-28.8	114	Breast	4	18.2	8.7	0 - 17.9	130
Colorectal	7	9.3	16.6	4.3-29.0	41	Colorectal	3	13.6	4.0	0 - 8.6	*
Colon	3	4.0	6.9	0 - 14.7	106	Colon	3	13.6	4.0	0 - 8.6	*
Rectum	4	5.3	9.8	0.2-19.4	66	Rectum	0				-
Mesothelioma	5	6.7	11.6	1.3-22.0	64	Gallbladder / bile ducts	2	9.1	4.3	0 - 10.6	212
Unknown primary	4	5.3	8.8	0.2-17.5	58	Pancreas	2	9.1	2.8	0 - 6.6	*
Lymphoma	4	5.3	9.0	0 - 18.1	86	Oesophagus	1	4.5	2.3	0 - 6.9	345
Lymphoma NOS	0				-	Nasal cavity & sinuses	1	4.5	2.4	0 - 7.2	166
Hodgkin lymphoma	1	1.3	2.7	0 - 8.1	293	Skin (not melanoma)	1	4.5	1.3	0 - 3.7	*
NHL	3	4.0	6.3	0 - 13.7	122	Cervix	1	4.5	2.8	0 - 8.3	429
Stomach	3	4.0	7.4	0 - 15.8	172	Unknown primary	1	4.5	1.3	0 - 3.8	*
Kidney	3	4.0	5.3	0 - 11.6	476	Leukaemia	1	4.5	1.3	0 - 3.8	*
Brain	3	4.0	7.2	0 - 15.4	125	Leukaemia NOS	0				-
Lip, gum & mouth	2	2.7	4.3	0 - 10.3	94	Lymphoid leukaemia	0				-
Pharynx	2	2.7	4.0	0 - 9.7	476	Myeloid leukaemia	1	4.5	1.3	0 - 3.8	*
Oesophagus	2	2.7	3.5	0 - 8.5	187	Leukaemia, other	0				-
<b>All cancers</b>	<b>75</b>	<b>100.0</b>	<b>157.3</b>	<b>121-194</b>	<b>6</b>	<b>All cancers</b>	<b>22</b>	<b>100.0</b>	<b>42.5</b>	<b>23.5-61.5</b>	<b>27</b>

## Appendix 3E. Cancer mortality, Western Australia, 2005: Leading types by sex and geographic area

### CHS Wheatbelt Region

Males						Females					
	Cases	%	ASR	95%c.i.	Risk		Cases	%	ASR	95%c.i.	Risk
Lung	17	23.3	25.1	12.9-37.2	30	Colorectal	13	26.0	16.6	6.8-26.4	73
Colorectal	11	15.1	15.7	6.3-25.2	81	Colon	12	24.0	14.7	5.6-23.7	85
Colon	8	11.0	12.3	3.8-20.8	81	Rectum	1	2.0	1.9	0 - 5.8	515
Rectum	3	4.1	3.4	0 - 7.4	*	Lung	8	16.0	9.1	2.1-16.1	168
Prostate	10	13.7	14.2	5.2-23.1	53	Breast	6	12.0	9.1	1.1-17.1	126
Melanoma (skin)	5	6.8	8.0	0.9-15.1	116	Ovary	4	8.0	6.1	0 - 12.5	155
Unknown primary	5	6.8	6.3	0.5-12.1	224	Brain	4	8.0	7.1	0 - 14.4	207
Stomach	4	5.5	5.5	0 - 11.1	174	Pancreas	3	6.0	3.6	0 - 7.9	469
Kidney	3	4.1	4.2	0 - 8.9	249	Melanoma (skin)	3	6.0	3.9	0 - 8.6	305
Lymphoma	3	4.1	5.2	0 - 11.4	280	Lymphoma	3	6.0	2.5	0 - 5.3	*
Lymphoma NOS	0				-	Lymphoma NOS	0				-
Hodgkin lymphoma	0				-	Hodgkin lymphoma	1	2.0	0.8	0 - 2.4	*
NHL	3	4.1	5.2	0 - 11.4	280	NHL	2	4.0	1.6	0 - 3.9	*
Oesophagus	2	2.7	3.5	0 - 8.3	174	Pharynx	1	2.0	1.2	0 - 3.4	*
Pancreas	2	2.7	3.5	0 - 8.3	174	Gallbladder / bile ducts	1	2.0	0.7	0 - 2.2	*
Mesothelioma	2	2.7	3.2	0 - 7.6	448	Uterus	1	2.0	1.2	0 - 3.4	*
Pharynx	1	1.4	2.1	0 - 6.1	583						
All cancers	73	100.0	112.4	85.4-139	9	All cancers	50	100.0	64.5	44.9-84.0	21

### CHS Goldfields Region

Males						Females					
	Cases	%	ASR	95%c.i.	Risk		Cases	%	ASR	95%c.i.	Risk
Lung	7	21.9	24.0	6.1-41.8	46	Colorectal	3	16.7	10.0	0 - 22.2	113
Skin (not melanoma)	4	12.5	13.3	0.0-26.6	66	Colon	2	11.1	5.0	0 - 12.2	382
Oesophagus	2	6.3	5.9	0 - 14.1	*	Rectum	1	5.6	5.0	0 - 14.9	160
Liver	2	6.3	6.9	0 - 16.6	152	Lung	3	16.7	15.0	0 - 32.0	35
Melanoma (skin)	2	6.3	7.2	0 - 17.7	72	Breast	3	16.7	11.7	0 - 25.2	69
Bladder & urinary tract	2	6.3	7.7	0 - 18.7	84	Pancreas	2	11.1	6.7	0 - 15.9	121
Unknown primary	2	6.3	7.4	0 - 18.0	66	Lip, gum & mouth	1	5.6	1.9	0 - 5.6	*
Stomach	1	3.1	4.0	0 - 11.7	152	Liver	1	5.6	2.8	0 - 8.2	434
Gallbladder / bile ducts	1	3.1	2.6	0 - 7.6	310	Nasal cavity & sinuses	1	5.6	1.9	0 - 5.5	*
Pancreas	1	3.1	3.9	0 - 11.5	206	Melanoma (skin)	1	5.6	2.6	0 - 7.8	455
Nasal cavity & sinuses	1	3.1	2.8	0 - 8.4	424	Cervix	1	5.6	1.9	0 - 5.6	*
Larynx	1	3.1	3.9	0 - 11.5	206	Bladder & urinary tract	1	5.6	1.9	0 - 5.6	*
Mesothelioma	1	3.1	4.0	0 - 11.7	152	Brain	1	5.6	2.8	0 - 8.2	434
Penis	1	3.1	3.9	0 - 11.5	206	Tongue	0				-
Prostate	1	3.1	3.9	0 - 11.5	206	Parotid gland	0				-
Kidney	1	3.1	4.0	0 - 11.7	152	Major salivary glands	0				-
Lymphoma	1	3.1	3.0	0 - 8.7	*	Pharynx	0				-
All cancers	32	100.0	112.2	72.8-152	8	All cancers	18	100.0	59.1	30.1-88.2	15

### CHS Great Southern Region

Males						Females					
	Cases	%	ASR	95%c.i.	Risk		Cases	%	ASR	95%c.i.	Risk
Lung	15	30.6	28.4	13.4-43.4	38	Lung	12	22.2	16.8	6.3-27.4	87
Prostate	7	14.3	11.0	2.7-19.3	265	Breast	8	14.8	17.9	5.1-30.6	37
Colorectal	5	10.2	11.2	1.2-21.2	68	Colorectal	6	11.1	7.1	0.8-13.4	248
Colon	2	4.1	4.4	0 - 10.7	287	Colon	6	11.1	7.1	0.8-13.4	248
Rectum	3	6.1	6.8	0 - 14.6	89	Rectum	0				-
Pancreas	4	8.2	7.4	0 - 15.1	158	Ovary	6	11.1	10.5	1.5-19.6	111
Oesophagus	3	6.1	5.9	0 - 12.7	153	Stomach	3	5.6	3.0	0 - 6.4	*
Stomach	3	6.1	5.2	0 - 11.6	287	Pancreas	3	5.6	4.9	0 - 10.7	99
Lymphoma	3	6.1	7.9	0 - 16.8	93	Oesophagus	2	3.7	3.6	0 - 8.9	248
Lymphoma NOS	0				-	Myeloma	2	3.7	1.8	0 - 4.2	*
Hodgkin lymphoma	0				-	Small intestine	1	1.9	1.2	0 - 3.6	*
NHL	3	6.1	7.9	0 - 16.8	93	Liver	1	1.9	1.2	0 - 3.6	*
Melanoma (skin)	2	4.1	4.9	0 - 11.8	135	Gallbladder / bile ducts	1	1.9	1.2	0 - 3.6	*
Unknown primary	2	4.1	3.9	0 - 9.3	265	Nasal cavity & sinuses	1	1.9	2.4	0 - 7.2	332
Skin (not melanoma)	1	2.0	2.3	0 - 6.7	265	Melanoma (skin)	1	1.9	2.4	0 - 7.2	332
Mesothelioma	1	2.0	1.6	0 - 4.7	*	Connective/ soft tissues	1	1.9	0.9	0 - 2.6	*
Bladder & urinary tract	1	2.0	2.3	0 - 6.7	265	Vulva	1	1.9	0.9	0 - 2.6	*
All cancers	49	100.0	95.7	68.0-123	11	All cancers	54	100.0	84.3	59.7-109	12

## Appendix 3E. Cancer mortality, Western Australia, 2005: Leading types by sex and geographic area

### CHS South West Region

#### Males

	Cases	%	ASR	95%c.i.	Risk
Lung	39	26.9	32.0	21.4-42.6	28
Colorectal	22	15.2	19.2	10.8-27.6	40
Colon	14	9.7	11.6	5.3-18.0	62
Rectum	8	5.5	7.5	2.1-13.0	111
Prostate	15	10.3	11.8	5.7-18.0	87
Stomach	8	5.5	6.9	1.9-11.9	163
Melanoma (skin)	7	4.8	6.9	1.7-12.1	158
Mesothelioma	7	4.8	6.5	1.6-11.3	116
Bladder & urinary tract	7	4.8	4.3	1.1-7.5	*
Oesophagus	5	3.4	5.0	0.5-9.5	155
Pancreas	5	3.4	4.0	0.4-7.6	522
Unknown primary	5	3.4	4.7	0.5-8.9	128
Brain	4	2.8	4.5	0.1-8.8	154
Skin (not melanoma)	3	2.1	1.8	0 - 3.9	*
Lymphoma	3	2.1	2.9	0 - 6.1	168
Lymphoma NOS	0				-
Hodgkin lymphoma	0				-
NHL	3	2.1	2.9	0 - 6.1	168
Kidney	2	1.4	1.8	0 - 4.4	439
Leukaemia	2	1.4	1.5	0 - 3.8	968
Leukaemia NOS	0				-
Lymphoid leukaemia	0				-
Myeloid leukaemia	2	1.4	1.5	0 - 3.8	968
Leukaemia, other	0				-
Myelodysplastic diseases	2	1.4	1.0	0 - 2.3	*
Myeloprolif. d/o (chronic)	2	1.4	1.1	0 - 2.5	*
Tongue	1	0.7	1.2	0 - 3.6	665
Anus	1	0.7	0.7	0 - 2.2	*
Liver	1	0.7	0.6	0 - 1.7	*
Gallbladder / bile ducts	1	0.7	0.7	0 - 2.2	*
<b>All cancers</b>	<b>145</b>	<b>100.0</b>	<b>123.1</b>	<b>102-144</b>	<b>8</b>

#### Females

	Cases	%	ASR	95%c.i.	Risk
Lung	17	15.9	15.1	7.4-22.8	73
Breast	16	15.0	15.6	7.6-23.5	63
Colorectal	14	13.1	9.6	4.1-15.1	84
Colon	6	5.6	3.7	0.4-7.0	237
Rectum	8	7.5	5.9	1.5-10.2	130
Unknown primary	8	7.5	5.3	1.1-9.4	198
Lymphoma	6	5.6	4.3	0.5-8.2	195
Lymphoma NOS	0				-
Hodgkin lymphoma	0				-
NHL	6	5.6	4.3	0.5-8.2	195
Oesophagus	5	4.7	2.1	0.2-4.0	*
Stomach	4	3.7	2.6	0 - 5.5	634
Pancreas	4	3.7	3.2	0 - 6.6	251
Melanoma (skin)	4	3.7	2.2	0 - 4.6	829
Ovary	4	3.7	4.6	0.1-9.1	154
Bladder & urinary tract	4	3.7	2.9	0 - 5.9	237
Leukaemia	4	3.7	5.4	0 - 11.0	148
Leukaemia NOS	0				-
Lymphoid leukaemia	1	0.9	1.1	0 - 3.2	554
Myeloid leukaemia	3	2.8	4.3	0 - 9.5	202
Leukaemia, other	0				-
Lip, gum & mouth	2	1.9	1.3	0 - 3.4	414
Kidney	2	1.9	2.2	0 - 5.9	993
Myelodysplastic diseases	2	1.9	0.9	0 - 2.2	*
Tongue	1	0.9	0.4	0 - 1.3	*
Pharynx	1	0.9	1.0	0 - 2.9	829
Liver	1	0.9	1.1	0 - 3.3	1089
Nasal cavity & sinuses	1	0.9	1.0	0 - 2.9	414
Larynx	1	0.9	1.0	0 - 2.9	414
Skin (not melanoma)	1	0.9	0.4	0 - 1.1	*
<b>All cancers</b>	<b>107</b>	<b>100.0</b>	<b>86.7</b>	<b>68.6-105</b>	<b>12</b>

### WA Country - all

#### Males

	Cases	%	ASR	95%c.i.	Risk
Lung	104	25.4	29.5	23.7-35.4	32
Colorectal	45	11.0	13.5	9.5-17.5	61
Colon	27	6.6	8.0	4.9-11.0	103
Rectum	18	4.4	5.5	2.9-8.1	147
Prostate	45	11.0	12.7	8.9-16.5	85
Unknown primary	21	5.1	6.5	3.7-9.4	103
Stomach	20	4.9	5.7	3.1-8.3	200
Oesophagus	18	4.4	5.4	2.9-8.0	156
Melanoma (skin)	17	4.1	5.2	2.7-7.7	161
Mesothelioma	17	4.1	5.3	2.7-7.8	162
Pancreas	14	3.4	4.2	2.0-6.5	248
Lymphoma	14	3.4	4.4	2.1-6.8	173
Lymphoma NOS	0				-
Hodgkin lymphoma	1	0.2	0.4	0 - 1.1	2118
NHL	13	3.2	4.1	1.8-6.3	189
Bladder & urinary tract	13	3.2	3.4	1.5-5.3	349
Skin (not melanoma)	11	2.7	2.9	1.1-4.7	484
Kidney	9	2.2	2.5	0.8-4.1	416
Brain	9	2.2	3.1	1.1-5.1	248
Myelodysplastic diseases	8	2.0	2.1	0.6-3.6	477
Liver	7	1.7	2.0	0.5-3.5	546
Pharynx	6	1.5	1.8	0.3-3.2	671
Gallbladder / bile ducts	5	1.2	1.6	0.2-3.0	402
Lip, gum & mouth	3	0.7	1.0	0 - 2.2	441
Tongue	3	0.7	1.2	0 - 2.7	853
Leukaemia	3	0.7	0.8	0 - 1.8	873
Leukaemia NOS	1	0.2	0.3	0 - 1.0	1201
Lymphoid leukaemia	0				-
Myeloid leukaemia	2	0.5	0.5	0 - 1.2	3194
Leukaemia, other	0				-
<b>All cancers</b>	<b>410</b>	<b>100.0</b>	<b>121.0</b>	<b>109-133</b>	<b>8</b>

#### Females

	Cases	%	ASR	95%c.i.	Risk
Lung	53	19.5	15.3	10.9-19.7	62
Colorectal	42	15.4	9.9	6.7-13.2	109
Colon	31	11.4	6.7	4.1-9.2	213
Rectum	11	4.0	3.2	1.2-5.3	222
Breast	38	14.0	12.4	8.3-16.5	69
Ovary	15	5.5	4.6	2.2-7.0	182
Pancreas	14	5.1	3.7	1.6-5.8	229
Unknown primary	13	4.8	3.2	1.3-5.1	256
Lymphoma	10	3.7	2.4	0.8-4.1	401
Lymphoma NOS	0				-
Hodgkin lymphoma	1	0.4	0.1	0 - 0.4	*
NHL	9	3.3	2.3	0.6-3.9	401
Oesophagus	9	3.3	2.2	0.6-3.7	623
Melanoma (skin)	9	3.3	2.2	0.7-3.8	566
Stomach	7	2.6	1.5	0.3-2.7	1854
Bladder & urinary tract	6	2.2	1.4	0.2-2.6	652
Brain	6	2.2	1.7	0.3-3.2	886
Leukaemia	6	2.2	2.1	0.2-4.0	421
Leukaemia NOS	0				-
Lymphoid leukaemia	2	0.7	0.5	0 - 1.4	1517
Myeloid leukaemia	4	1.5	1.6	0 - 3.3	582
Leukaemia, other	0				-
Gallbladder / bile ducts	4	1.5	1.0	0 - 2.0	1517
Nasal cavity & sinuses	4	1.5	1.2	0 - 2.4	464
Cervix	4	1.5	1.2	0 - 2.5	1045
Myeloma	4	1.5	1.0	0 - 2.0	1854
Lip, gum & mouth	3	1.1	0.7	0 - 1.5	1144
Liver	3	1.1	0.9	0 - 2.0	1670
Uterus	3	1.1	1.0	0 - 2.1	1057
Kidney	3	1.1	0.9	0 - 2.2	2861
<b>All cancers</b>	<b>272</b>	<b>100.0</b>	<b>74.5</b>	<b>65.0-84.1</b>	<b>14</b>

## Appendix 3E. Cancer mortality, Western Australia, 2005: Leading types by sex and geographic area

### North Metro AHS

Males						Females					
	Cases	%	ASR	95%c.i.	Risk		Cases	%	ASR	95%c.i.	Risk
Lung	180	23.0	28.1	23.8-32.3	32	Lung	97	17.3	13.4	10.5-16.3	57
Colorectal	98	12.5	15.5	12.3-18.7	63	Breast	94	16.8	14.1	11.1-17.2	61
Colon	56	7.2	8.6	6.2-10.9	132	Colorectal	73	13.0	6.8	5.1-8.6	219
Rectum	42	5.4	7.0	4.8-9.2	121	Colon	50	8.9	4.3	3.0-5.7	476
Prostate	89	11.4	12.3	9.6-15.0	90	Rectum	23	4.1	2.5	1.3-3.7	405
Melanoma (skin)	48	6.1	7.6	5.4-9.9	154	Pancreas	41	7.3	6.3	4.3-8.4	112
Unknown primary	38	4.9	5.7	3.8-7.6	191	Ovary	28	5.0	3.8	2.3-5.3	254
Pancreas	37	4.7	6.3	4.2-8.3	133	Unknown primary	27	4.8	3.2	1.9-4.5	301
Stomach	31	4.0	5.1	3.2-6.9	166	Lymphoma	23	4.1	2.7	1.4-3.9	338
Lymphoma	31	4.0	4.9	3.1-6.8	210	Lymphoma NOS	2	0.4	0.3	0 - 0.6	2384
Lymphoma NOS	1	0.1	0.1	0 - 0.3	*	Hodgkin lymphoma	1	0.2	0.1	0 - 0.2	*
Hodgkin lymphoma	1	0.1	0.1	0 - 0.3	*	NHL	20	3.6	2.3	1.2-3.5	393
NHL	29	3.7	4.7	2.9-6.5	210	Brain	20	3.6	3.8	2.0-5.6	242
Leukaemia	25	3.2	4.1	2.4-5.7	229	Leukaemia	19	3.4	3.0	1.4-4.6	304
Leukaemia NOS	1	0.1	0.1	0 - 0.4	*	Leukaemia NOS	1	0.2	0.1	0 - 0.2	*
Lymphoid leukaemia	12	1.5	1.9	0.8-3.1	467	Lymphoid leukaemia	10	1.8	1.5	0.4-2.6	877
Myeloid leukaemia	12	1.5	2.0	0.8-3.1	450	Myeloid leukaemia	8	1.4	1.4	0.3-2.5	465
Leukaemia, other	0				-	Leukaemia, other	0				-
Brain	24	3.1	4.1	2.4-5.8	192	Stomach	14	2.5	1.7	0.7-2.7	541
Oesophagus	23	2.9	3.9	2.3-5.6	202	Myeloma	14	2.5	1.8	0.8-2.9	671
Mesothelioma	21	2.7	2.9	1.6-4.2	355	Melanoma (skin)	12	2.1	1.5	0.6-2.5	683
Liver	19	2.4	3.5	1.8-5.2	249	Bladder & urinary tract	11	2.0	1.2	0.4-2.0	785
Bladder & urinary tract	19	2.4	2.8	1.5-4.1	292	Kidney	10	1.8	1.1	0.3-1.9	1171
Kidney	18	2.3	2.9	1.5-4.2	385	Gallbladder / bile ducts	9	1.6	1.1	0.3-1.9	1208
Myeloma	14	1.8	2.2	1.0-3.4	378	Cervix	9	1.6	1.5	0.4-2.5	610
Myelodysplastic diseases	14	1.8	2.1	1.0-3.2	433	Liver	8	1.4	0.9	0.2-1.6	848
Gallbladder / bile ducts	8	1.0	1.2	0.3-2.0	781	Uterus	8	1.4	1.0	0.3-1.8	624
Pharynx	5	0.6	0.9	0.1-1.7	920	Mesothelioma	5	0.9	0.8	0.1-1.6	796
Larynx	5	0.6	0.8	0.1-1.6	678	Myelodysplastic diseases	5	0.9	0.5	0 - 1.0	2929
Skin (not melanoma)	5	0.6	0.7	0.1-1.4	1520	Vagina	4	0.7	0.5	0 - 1.2	1620
<b>All cancers</b>	<b>783</b>	<b>100.0</b>	<b>123.3</b>	<b>114-132</b>	<b>8</b>	<b>All cancers</b>	<b>561</b>	<b>100.0</b>	<b>75.3</b>	<b>68.4-82.2</b>	<b>12</b>

### South Metro AHS

Males						Females					
	Cases	%	ASR	95%c.i.	Risk		Cases	%	ASR	95%c.i.	Risk
Lung	194	23.9	30.9	26.3-35.4	30	Lung	112	18.8	16.2	13.0-19.5	53
Prostate	100	12.3	15.0	12.0-18.1	74	Breast	91	15.3	13.6	10.6-16.7	64
Colorectal	95	11.7	16.4	12.9-19.8	49	Colorectal	73	12.3	9.7	7.2-12.2	101
Colon	51	6.3	8.7	6.2-11.2	87	Colon	57	9.6	7.5	5.3-9.7	128
Rectum	44	5.4	7.6	5.3-10.0	109	Rectum	16	2.7	2.1	0.9-3.4	489
Unknown primary	41	5.1	6.7	4.6-8.9	147	Pancreas	44	7.4	6.2	4.2-8.3	141
Melanoma (skin)	40	4.9	7.3	5.0-9.7	126	Unknown primary	40	6.7	4.2	2.8-5.7	313
Stomach	39	4.8	6.3	4.2-8.4	143	Ovary	25	4.2	3.5	2.0-5.0	264
Pancreas	34	4.2	5.9	3.8-7.9	131	Brain	22	3.7	4.1	2.2-6.1	242
Bladder & urinary tract	28	3.5	4.3	2.6-6.0	325	Lymphoma	22	3.7	3.0	1.6-4.3	362
Oesophagus	27	3.3	4.7	2.9-6.6	202	Lymphoma NOS	1	0.2	0.1	0 - 0.2	*
Brain	26	3.2	5.4	3.2-7.5	168	Hodgkin lymphoma	0				-
Liver	22	2.7	3.7	2.0-5.3	245	NHL	21	3.5	2.9	1.5-4.3	362
Mesothelioma	22	2.7	4.0	2.3-5.7	231	Bladder & urinary tract	16	2.7	1.5	0.7-2.2	1290
Leukaemia	19	2.3	2.9	1.5-4.3	469	Melanoma (skin)	14	2.4	2.4	1.1-3.7	345
Leukaemia NOS	1	0.1	0.2	0 - 0.7	5114	Leukaemia	14	2.4	2.4	1.0-3.9	524
Lymphoid leukaemia	8	1.0	1.2	0.3-2.1	1185	Leukaemia NOS	0				-
Myeloid leukaemia	10	1.2	1.5	0.5-2.5	912	Lymphoid leukaemia	4	0.7	0.7	0 - 1.5	1778
Leukaemia, other	0				-	Myeloid leukaemia	10	1.7	1.8	0.5-3.0	742
Lymphoma	17	2.1	2.8	1.4-4.2	405	Leukaemia, other	0				-
Lymphoma NOS	0				-	Myeloma	13	2.2	1.7	0.7-2.7	512
Hodgkin lymphoma	0				-	Uterus	12	2.0	1.8	0.7-2.8	480
NHL	17	2.1	2.8	1.4-4.2	405	Kidney	11	1.8	1.5	0.6-2.5	398
Skin (not melanoma)	15	1.8	2.4	1.2-3.7	565	Oesophagus	10	1.7	1.2	0.3-2.1	702
Kidney	14	1.7	2.4	1.1-3.7	254	Stomach	10	1.7	1.0	0.3-1.8	2029
Myeloma	14	1.7	2.3	1.0-3.5	501	Cervix	9	1.5	1.5	0.5-2.6	610
Lip, gum & mouth	9	1.1	1.6	0.5-2.6	608	Liver	6	1.0	0.8	0.1-1.5	1216
Myelodysplastic diseases	8	1.0	1.1	0.3-2.0	1098	Small intestine	5	0.8	0.7	0.0-1.3	1156
Gallbladder / bile ducts	7	0.9	1.1	0.2-2.0	1705	Gallbladder / bile ducts	5	0.8	0.5	0 - 1.0	2834
Pharynx	6	0.7	1.1	0.2-2.0	759	Mesothelioma	5	0.8	0.9	0.1-1.8	947
<b>All cancers</b>	<b>811</b>	<b>100.0</b>	<b>134.3</b>	<b>125-144</b>	<b>7</b>	<b>All cancers</b>	<b>595</b>	<b>100.0</b>	<b>83.6</b>	<b>76.1-91.1</b>	<b>12</b>

## Appendix 3E. Cancer mortality, Western Australia, 2005: Leading types by sex and geographic area

### WA Metro - all

	Males					Females					
	Cases	%	ASR	95%c.i.	Risk	Cases	%	ASR	95%c.i.	Risk	
Lung	374	23.5	29.5	26.3-32.6	31	Lung	209	18.1	14.7	12.6-16.9	55
Colorectal	193	12.1	15.9	13.6-18.3	55	Breast	185	16.0	13.9	11.7-16.1	62
Colon	107	6.7	8.7	6.9-10.4	105	Colorectal	146	12.6	8.2	6.7-9.7	140
Rectum	86	5.4	7.3	5.7-8.9	115	Colon	107	9.3	5.9	4.6-7.1	204
Prostate	189	11.9	13.6	11.6-15.6	81	Rectum	39	3.4	2.3	1.5-3.1	444
Melanoma (skin)	88	5.5	7.5	5.9-9.1	139	Pancreas	85	7.4	6.3	4.8-7.7	125
Unknown primary	79	5.0	6.2	4.8-7.6	167	Unknown primary	67	5.8	3.7	2.7-4.7	307
Pancreas	71	4.5	6.1	4.6-7.5	132	Ovary	53	4.6	3.7	2.6-4.7	257
Stomach	70	4.4	5.7	4.3-7.1	153	Lymphoma	45	3.9	2.8	1.9-3.7	349
Oesophagus	50	3.1	4.3	3.1-5.6	202	Lymphoma NOS	3	0.3	0.2	0 - 0.4	4752
Brain	50	3.1	4.7	3.3-6.0	181	Hodgkin lymphoma	1	0.1	0.0	0 - 0.1	*
Lymphoma	48	3.0	3.9	2.7-5.0	274	NHL	41	3.5	2.6	1.7-3.5	377
Lymphoma NOS	1	0.1	0.0	0 - 0.1	*	Brain	42	3.6	4.0	2.7-5.3	242
Hodgkin lymphoma	1	0.1	0.1	0 - 0.2	*	Leukaemia	33	2.9	2.7	1.6-3.8	387
NHL	46	2.9	3.8	2.6-4.9	274	Leukaemia NOS	1	0.1	0.0	0 - 0.1	*
Bladder & urinary tract	47	2.9	3.5	2.5-4.6	310	Lymphoid leukaemia	14	1.2	1.1	0.4-1.8	1158
Leukaemia	44	2.8	3.5	2.4-4.6	310	Myeloid leukaemia	18	1.6	1.5	0.7-2.4	580
Leukaemia NOS	2	0.1	0.2	0 - 0.4	*	Leukaemia, other	0				-
Lymphoid leukaemia	20	1.3	1.6	0.8-2.3	677	Bladder & urinary tract	27	2.3	1.3	0.8-1.9	968
Myeloid leukaemia	22	1.4	1.7	1.0-2.5	602	Myeloma	27	2.3	1.8	1.0-2.5	578
Leukaemia, other	0				-	Melanoma (skin)	26	2.2	2.0	1.1-2.8	462
Mesothelioma	43	2.7	3.4	2.3-4.5	282	Stomach	24	2.1	1.4	0.7-2.0	851
Liver	41	2.6	3.6	2.4-4.8	246	Kidney	21	1.8	1.3	0.7-1.9	596
Kidney	32	2.0	2.7	1.7-3.6	304	Uterus	20	1.7	1.4	0.7-2.0	547
Myeloma	28	1.8	2.3	1.4-3.1	434	Cervix	18	1.6	1.5	0.8-2.3	608
Myelodysplastic diseases	22	1.4	1.6	0.9-2.3	617	Liver	14	1.2	0.8	0.4-1.3	1010
Skin (not melanoma)	20	1.3	1.5	0.9-2.2	840	Gallbladder / bile ducts	14	1.2	0.8	0.3-1.3	1661
Gallbladder / bile ducts	15	0.9	1.1	0.5-1.7	1080	Oesophagus	12	1.0	0.7	0.2-1.1	1428
Lip, gum & mouth	11	0.7	1.0	0.4-1.6	874	Mesothelioma	10	0.9	0.9	0.3-1.4	872
Pharynx	11	0.7	1.0	0.4-1.6	847	Myelodysplastic diseases	9	0.8	0.5	0.1-0.9	3161
<b>All cancers</b>	<b>1594</b>	<b>100.0</b>	<b>128.6</b>	<b>122-135</b>	<b>8</b>	<b>All cancers</b>	<b>1156</b>	<b>100.0</b>	<b>79.2</b>	<b>74.1-84.3</b>	<b>12</b>

### All Western Australia

	Males					Females					
	Cases	%	ASR	95%c.i.	Risk	Cases	%	ASR	95%c.i.	Risk	
Lung	478	23.9	29.5	26.7-32.2	31	Lung	262	18.3	14.9	12.9-16.8	56
Colorectal	238	11.9	15.4	13.4-17.4	56	Breast	223	15.6	13.6	11.7-15.5	64
Colon	134	6.7	8.5	7.0-10.0	105	Colorectal	188	13.2	8.5	7.1-9.9	133
Rectum	104	5.2	6.9	5.5-8.3	121	Colon	138	9.7	6.0	4.9-7.1	206
Prostate	234	11.7	13.4	11.7-15.2	82	Rectum	50	3.5	2.5	1.7-3.3	371
Melanoma (skin)	105	5.2	7.0	5.6-8.4	143	Pancreas	99	6.9	5.7	4.5-6.9	138
Unknown primary	100	5.0	6.3	5.0-7.5	147	Unknown primary	80	5.6	3.6	2.7-4.5	297
Stomach	90	4.5	5.7	4.5-6.9	161	Ovary	68	4.8	3.8	2.9-4.8	238
Pancreas	85	4.2	5.7	4.4-6.9	147	Lymphoma	55	3.9	2.7	1.9-3.5	358
Oesophagus	68	3.4	4.6	3.5-5.7	189	Lymphoma NOS	3	0.2	0.1	0 - 0.3	5896
Lymphoma	62	3.1	4.0	3.0-5.1	242	Hodgkin lymphoma	2	0.1	0.1	0 - 0.1	*
Lymphoma NOS	1	0.0	0.0	0 - 0.1	*	NHL	50	3.5	2.5	1.7-3.3	381
Hodgkin lymphoma	2	0.1	0.1	0 - 0.3	9238	Brain	48	3.4	3.5	2.4-4.6	284
NHL	59	2.9	3.9	2.8-4.9	249	Leukaemia	39	2.7	2.5	1.6-3.5	396
Mesothelioma	60	3.0	3.8	2.8-4.8	242	Leukaemia NOS	1	0.1	0.0	0 - 0.1	*
Bladder & urinary tract	60	3.0	3.5	2.6-4.4	318	Lymphoid leukaemia	16	1.1	1.0	0.4-1.6	1227
Brain	59	2.9	4.3	3.2-5.4	193	Myeloid leukaemia	22	1.5	1.5	0.8-2.2	583
Liver	48	2.4	3.3	2.3-4.2	281	Leukaemia, other	0				-
Leukaemia	47	2.3	2.9	2.0-3.7	364	Melanoma (skin)	35	2.5	2.0	1.3-2.7	479
Leukaemia NOS	3	0.1	0.2	0 - 0.5	4010	Bladder & urinary tract	33	2.3	1.3	0.8-1.9	883
Lymphoid leukaemia	20	1.0	1.2	0.7-1.8	877	Stomach	31	2.2	1.4	0.8-1.9	956
Myeloid leukaemia	24	1.2	1.5	0.8-2.1	737	Myeloma	31	2.2	1.6	1.0-2.2	674
Leukaemia, other	0				-	Kidney	24	1.7	1.2	0.7-1.8	707
Kidney	41	2.0	2.6	1.8-3.4	323	Uterus	23	1.6	1.3	0.7-1.9	605
Skin (not melanoma)	31	1.5	1.8	1.2-2.5	715	Cervix	22	1.5	1.5	0.8-2.1	665
Myelodysplastic diseases	30	1.5	1.7	1.1-2.4	578	Oesophagus	21	1.5	1.0	0.5-1.4	1123
Myeloma	29	1.4	1.8	1.1-2.5	560	Gallbladder / bile ducts	18	1.3	0.8	0.4-1.3	1630
Gallbladder / bile ducts	20	1.0	1.2	0.7-1.8	787	Liver	17	1.2	0.9	0.4-1.3	1079
Pharynx	17	0.8	1.2	0.6-1.7	789	Mesothelioma	11	0.8	0.8	0.3-1.2	956
Lip, gum & mouth	14	0.7	1.0	0.5-1.5	722	Myelodysplastic diseases	11	0.8	0.5	0.2-0.8	3995
<b>All cancers</b>	<b>2004</b>	<b>100.0</b>	<b>126.9</b>	<b>121-133</b>	<b>8</b>	<b>All cancers</b>	<b>1428</b>	<b>100.0</b>	<b>78.1</b>	<b>73.6-82.6</b>	<b>12</b>