

2 Cancer in Australia

General

Each year, approximately 350,000 new cancer cases are diagnosed in Australia. A large proportion of these, approximately 270,000, are non-melanocytic skin cancers. Incidence data for this cancer are not collected on a routine basis by cancer registries; however, data are collected on a survey basis. The latest survey-based estimates show age-standardised incidence rates (standardised to the World Standard Population) for treated non-melanocytic skin cancers in 1995 were 1,374 per 100,000 population for males and 857 per 100,000 population for females (Staples et al. 1998). These rates are eight times the next most common male cancer (prostate) and seven times the next most common female cancer (breast). Despite non-melanocytic skin cancer's high incidence rate it has a relatively low mortality rate at 1.8 per 100,000 population compared with the high mortality rates of male lung cancer at 52.2 per 100,000 population, female breast cancer (24.2) and prostate cancer (29.4). Non-melanocytic skin cancer will be excluded from any further comparisons in this publication. The totality of other cancers will be referred to as 'registrable cancers'.

Excluding non-melanocytic skin cancers, there were 79,538 new cancer cases and 33,966 deaths due to cancer in Australia in 1997. At the incidence rates prevailing in 1997, it would be expected that 1 in 3 men and 1 in 4 women would be directly affected by cancer in the first 75 years of life. Further, an estimated 261,000 potential years of life would be lost to the community each year as a result of people dying of cancer before the age of 75. Cancer currently accounts for 28% of male deaths and 24% of female deaths.

In this publication the term 'cancer site' is used to represent cancers located in specific organs or tissues as well as systemic cancers such as leukaemia and lymphoma.

Most common cancers

Among all persons, the combination of cancers of the colon and rectum (11,245 new cases), often referred to as bowel or colorectal cancer, is the most common registrable cancer in 1997 (Table 1). Colorectal, breast cancer (10,166), prostate (9,725), melanoma (8,366), and lung cancer (7,819) together account for 59% of all registrable cancers in 1997.

In males, the most common registrable cancers after prostate cancer are colorectal cancer (6,139 new cases diagnosed in 1997), lung cancer (5,332) and melanoma (4,649) (Table 1, Figure 1). These four cancers account for 60% of all registrable cancers in males.

In females, breast cancer (10,096) is the most common registrable cancer, followed by colorectal cancer (5,106), melanoma (3,717) and lung cancer (2,497) which in total account for 59% of all registrable cancers in females.

The cancers most commonly causing death are lung (4,615), colorectal (2,544) and prostate (2,449) cancers in males, and breast (2,596), colorectal (2,134) and lung (2,068) cancers in females (Table 1). The number of person-years of life lost due to cancer is generally dominated by the most common cancers due to the large numbers of cases diagnosed, rather

than by those less common cancers which occur earlier in life. Lung cancer is responsible for the highest number of person-years of life lost before 75 years of age (44,578 in 1997), followed by colorectal cancer (31,573) and breast cancer (31,508) (Table 1). Cancer of the brain and nervous system is responsible for the fourth-highest number of person-years of life lost (16,765). This contrasts with its ranking as the thirteenth most common cancer (1,299 new cases diagnosed in 1997). Further, the ratio of person-years of life lost to new cases for cancer of the brain and nervous system (13.2) is much higher than that for lung cancer (5.7), breast cancer (3.1) or colorectal cancer (2.8). This is a direct result of the relatively large number of younger people diagnosed with, and dying from, cancer of the brain and nervous system.

The most common cancers vary depending on age (Figure 2). In people aged less than 15, the most common cancers diagnosed are lymphatic leukaemia and cancers of the brain and central nervous system. These two cancer sites account for 44% of all cancers in this age group. In those aged 15–44, melanoma and breast cancer are the most common cancers, while breast, colorectal, melanoma, prostate and lung cancers are predominant in people aged over 45 years.

The ranking of the most frequently occurring cancers by age group (Figure 2) is based on the number of new cases, and for those cancers the number of deaths is also shown. However, some cancers that would be ranked in the top five cancers based on number of deaths (rather than new cases) are not presented in Figure 2. Cancers which have a substantial number of deaths in each age group that are not presented in Figure 2 are those of the other endocrine glands (18 deaths) and myeloid leukaemia (16 deaths) in the 0–14 age group and cancer of the brain and nervous system (144) in the 15–44 age group. In the age group 45–64, cancers of unknown primary site (450 deaths), non-Hodgkin's lymphoma (359 deaths) and cancer of the brain and nervous system (350 deaths) are responsible for a substantial number of deaths. Cancers of unknown primary site (1,726 deaths) are also a significant cause of death in the 65 and over age group.

The mortality to incidence ratio (MIR) gives a rough indication of the survival rates for people diagnosed with cancer. Cancers affecting vital organs or systems tend to have a high MIR as few people survive these cancers. Cancers of the liver, pancreas and oesophagus have MIRs of more than 0.9 while cancers of the brain and lung have ratios of between 0.8 and 0.9. MIRs for some other important cancers are 0.42 (colorectal), 0.37 (cervix), 0.25 (prostate) and 0.26 (female breast cancer). Melanoma is one of the few common cancers with a consistently low MIR of approximately 0.11.

Table 1: Most frequently occurring cancers in Australia, 1997 ^{(a) (b)}

Cancer site	New cases					Deaths				
	Number	% of all new cancer cases	ASR (A)	ASR (W)	Lifetime risk ^(c)	Number	% of all cancer deaths	ASR (A)	ASR (W)	PYLL ^(c)
Males										
Prostate	9,725	22.5	110.9	74.5	1 in 11	2,449	12.9	29.4	16.5	6,008
Colorectal	6,139	14.2	68.4	48.8	1 in 17	2,544	13.3	28.8	19.6	18,500
Lung	5,322	12.3	59.8	41.3	1 in 20	4,615	24.2	52.2	35.3	29,773
Melanoma	4,649	10.8	50.1	39.3	1 in 23	580	3.0	6.4	4.6	6,690
Bladder	1,986	4.6	22.6	15.1	1 in 56	554	2.9	6.5	4.0	2,398
NHL	1,687	3.9	18.6	14.0	1 in 66	815	4.3	9.2	6.3	7,918
Unknown site	1,680	3.9	19.0	12.9	1 in 70	1,171	6.1	13.4	8.7	7,998
Kidney	1,229	2.8	13.5	10.2	1 in 82	467	2.5	5.2	3.7	3,913
Stomach	1,193	2.8	13.4	9.2	1 in 93	768	4.0	8.8	5.7	5,285
Lip	855	2.0	9.4	7.1	1 in 130	17	0.1	0.2	0.1	190
Females										
Breast	10,096	27.8	97.9	80.2	1 in 11	2,596	17.4	24.2	18.6	31,453
Colorectal	5,106	14.1	46.6	33.2	1 in 26	2,134	14.3	18.7	12.8	13,073
Melanoma	3,717	10.2	37.0	30.5	1 in 33	330	2.2	3.1	2.3	4,438
Lung	2,497	6.9	23.5	17.3	1 in 46	2,068	13.9	19.2	13.7	14,805
Unknown site	1,489	4.1	12.9	8.6	1 in 113	1,084	7.3	9.2	6.0	5,855
NHL	1,450	4.0	13.5	10.2	1 in 87	725	4.9	6.4	4.4	4,995
Uterus	1,395	3.8	13.5	10.7	1 in 77	271	1.8	2.4	1.6	1,605
Ovary	1,151	3.2	11.0	8.8	1 in 103	740	5.0	6.8	4.9	6,233
Pancreas	844	2.3	7.4	5.0	1 in 184	830	5.6	7.2	4.7	4,025
Kidney	818	2.3	7.7	5.8	1 in 156	329	2.2	2.8	1.8	1,548
Persons										
Colorectal	11,245	14.1	56.6	40.5	1 in 21	4,678	13.8	23.2	16.0	31,573
Breast	10,166	12.8	51.2	41.2	1 in 22	2,612	7.7	13.0	9.7	31,508
Prostate	9,725	12.2	49.5	34.2	1 in 23	2,449	7.2	11.8	6.8	6,008
Melanoma	8,366	10.5	42.9	34.6	1 in 27	910	2.7	4.6	3.4	11,128
Lung	7,819	9.8	39.6	28.3	1 in 28	6,683	19.7	33.7	23.5	44,578
Unknown site	3,169	4.0	15.7	10.6	1 in 87	2,255	6.6	11.1	7.3	13,853
NHL	3,137	3.9	15.8	12.0	1 in 75	1,540	4.5	7.6	5.3	12,913
Bladder	2,681	3.4	13.4	9.2	1 in 89	807	2.4	3.9	2.4	3,190
Kidney	2,047	2.6	10.4	7.9	1 in 108	796	2.3	4.0	2.7	5,460
Stomach	1,919	2.4	9.6	6.7	1 in 128	1,244	3.7	6.2	4.1	8,193

(a) Rates are expressed per 100,000 population and age-standardised to the Australian 1991 Population ASR (A) and to the World Standard Population ASR (W). The rates age-standardised to the two populations (World and Australia 1991) differ due to the age distributions of these populations. For example the World population gives more weight to younger age groups where there are fewer cancers, consequently the rate is lower compared with the Australian 1991 population. A greater weight is given to the older age groups in the Australian 1991 population where there are more cancers, consequently these rates tend to be higher.

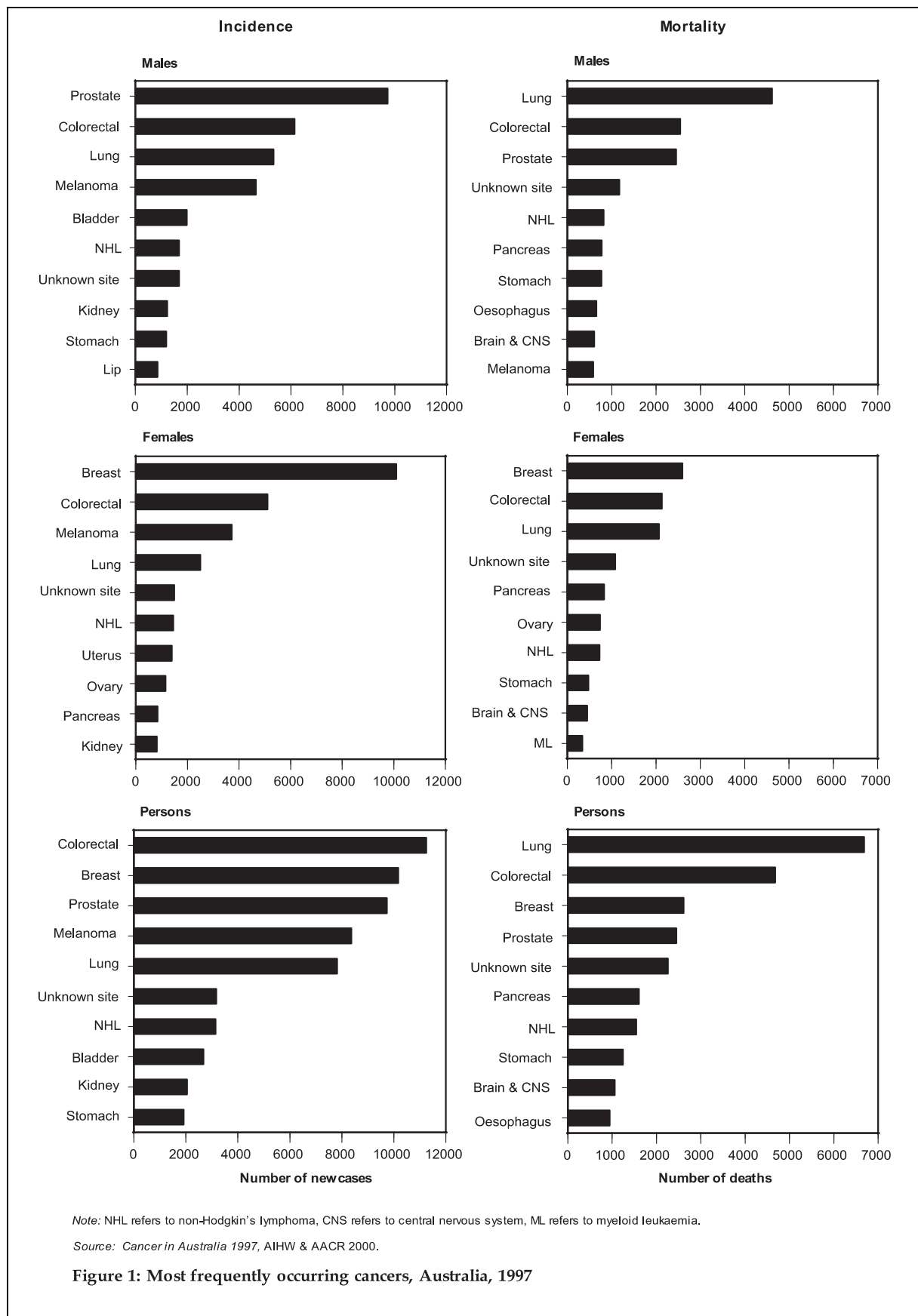
(b) Non-melanocytic skin cancer, known to be the most common cancer type, is excluded from this list, as it is not a registrable cancer.

(c) These measures are calculated for ages 0–74 years; PYLL refers to person-years of life lost. Methods for the calculation of these measures are presented in Appendix B.

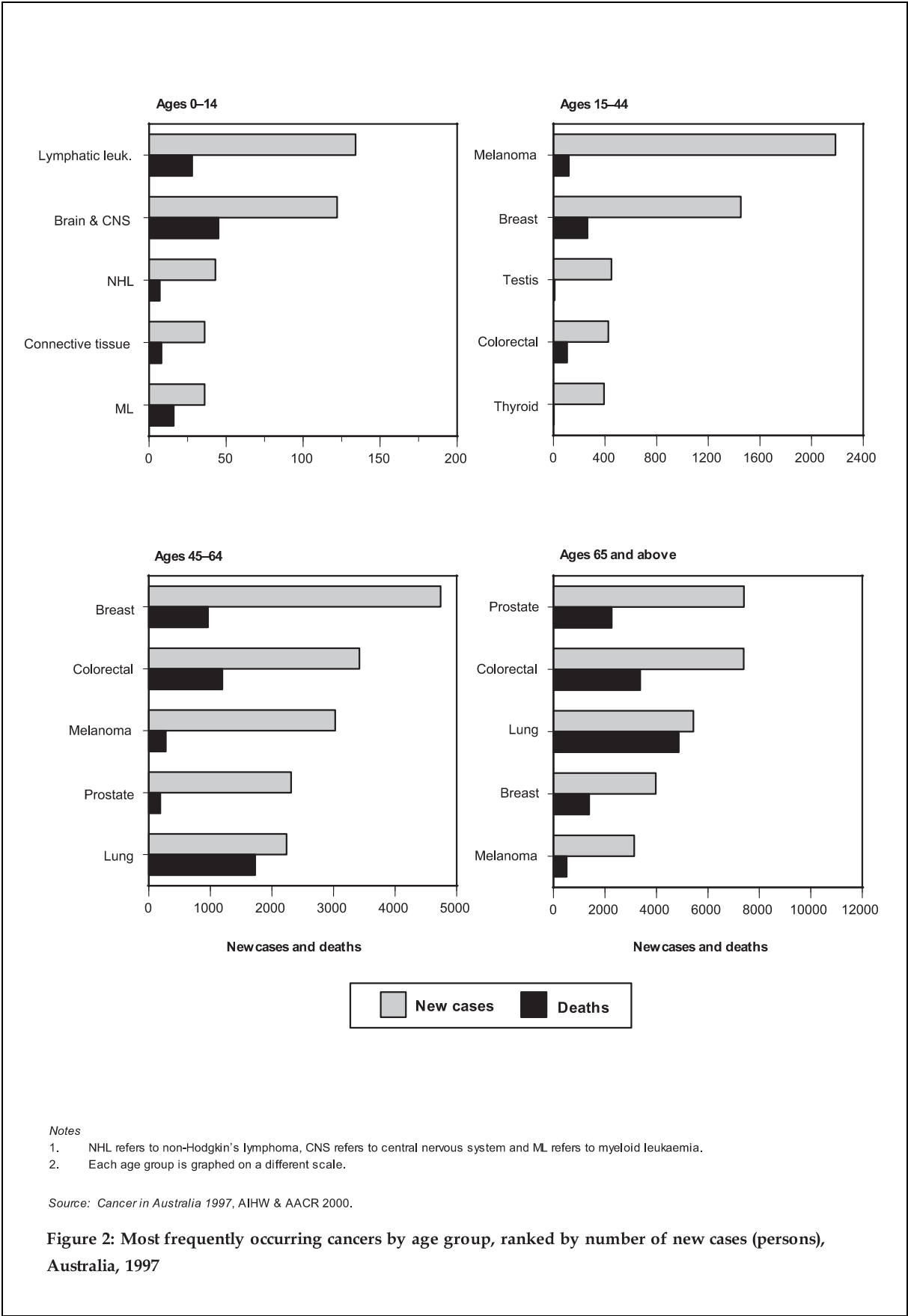
Note: NHL refers to non-Hodgkin's lymphoma.

Source: *Cancer in Australia 1997*, AIHW & AACR 2000.

Most frequently occurring cancers



Most frequently occurring cancers by age group



- Notes*
1. NHL refers to non-Hodgkin's lymphoma, CNS refers to central nervous system and ML refers to myeloid leukaemia.
 2. Each age group is graphed on a different scale.

Source: *Cancer in Australia 1997*, AIHW & AACR 2000.

Figure 2: Most frequently occurring cancers by age group, ranked by number of new cases (persons), Australia, 1997