

## 2 Most common cancers in South Australia

There are many types of cancer, varying by site of origin (primary site) and by histological type (histology). This section describes the patterns of the most common invasive cancers by primary site in South Australia for 2002, examining them by using measures of incidence (new cases) and mortality (deaths) by both sex and age groups. All comparisons are made excluding non-melanocytic skin cancer as it is a non-registrable cancer.

This section should be read in conjunction with Table 1, 2 and 3 for the 10 most common cancers and Appendix 1 for other cancer sites.

### 2.1 Incidence

#### Males

- Prostate cancer is the most commonly reported cancer in males, accounting for 24.6% of all cancers declining slightly as a percentage of all cancers in recent years. Colorectal cancer (16.3%), lung cancer (11.5%) and melanoma (8.8%) are ranked second to fourth in importance followed by non-Hodgkin's lymphomas (5.7%) and cancers of the kidney (3.4%), unknown primary site (3.3%), bladder (3.2%), stomach (2.7%) and lip (2.4%) (Table 1).

**Table 1: Most common cancers in South Australia 2002 - Males**

Site name	Incidence				Mortality				Survival %
	New cases	Rate	Lifetime risk	% all cancers	Deaths	Rate	Lifetime risk	% all cancers	
Prostate	946	121.5	1 in 11	24.6	222	31.3	1 in 109	12.2	73.3
Colorectal	627	80.0	1 in 16	16.3	225	29.5	1 in 53	12.4	53.5
Lung	443	56.8	1 in 24	11.5	398	51.1	1 in 30	21.9	10.5
Melanoma	340	44.0	1 in 31	8.8	51	6.6	1 in 195	2.8	89.0
NHL	218	28.0	1 in 49	5.7	88	11.5	1 in 150	4.8	58.3*
Kidney	131	16.7	1 in 75	3.4	50	6.5	1 in 226	2.7	52.5
Unspecified	126	16.2	1 in 95	3.3	111	14.3	1 in 108	6.1	N/A
Bladder	124	16.2	1 in 99	3.2	64	8.7	1 in 325	3.5	61.1
Stomach	105	13.7	1 in 111	2.7	91	11.8	1 in 141	5.0	21.7
Lip	94	12.2	1 in 114	2.4	1	0.1	1 in 8,821	0.1	96.2
<i>All cancers</i>	<i>4,091</i>	<i>526.7</i>	<i>1 in 3</i>	<i>100.0</i>	<i>1,821</i>	<i>239.4</i>	<i>1 in 7</i>	<i>100.0</i>	<i>49.5</i>

#### Females

- Breast cancer remains the most commonly reported cancer in females, accounting for 28.8% of all cancers. The diagnosis of breast cancer in women aged 60-69 has shown significant increase over the last five years. Colorectal cancer (15.1%), melanoma (9.1%) and lung cancer (7.4%) are ranked second to fourth in importance followed by non-Hodgkin's lymphomas (4.5%), and cancers of the uterus (4.2%) unknown primary site (4.0%), ovaries (2.9%), pancreas (2.0%) and kidney (1.9%) (Table 2).

**Table 2: Most common cancers in South Australia 2002 - Females**

Site name	Incidence				Mortality				Survival %
	New cases	Rate	Lifetime risk	% all cancers	Deaths	Rate	Lifetime risk	% all cancers	
Breast	1,040	120.4	1 in 10	28.8	290	30.9	1 in 47	19.3	77.5
Colorectal	547	56.9	1 in 25	15.1	202	19.6	1 in 93	13.4	55.7
Melanoma	330	38.7	1 in 35	9.1	23	2.3	1 in 813	1.5	92.3
Lung	268	28.4	1 in 42	7.4	208	21.4	1 in 63	13.8	13.4
NHL	161	17.9	1 in 68	4.5	66	6.9	1 in 212	4.4	56.4*
Uterus	152	17.0	1 in 62	4.2	26	2.6	1 in 522	1.7	79.4
Unspecified	146	14.3	1 in 120	4.0	133	13.0	1 in 121	8.8	N/A
Ovary	104	11.3	1 in 119	2.9	71	7.8	1 in 151	4.7	36.0
Pancreas	71	7.1	1 in 229	2.0	77	7.6	1 in 221	5.1	3.0
Kidney	67	7.2	1 in 211	1.9	34	3.4	1 in 573	2.3	50.4
<i>All cancers</i>	<i>3,617</i>	<i>398.0</i>	<i>1 in 4</i>	<i>100.0</i>	<i>1,503</i>	<i>153.2</i>	<i>1 in 10</i>	<i>100.0</i>	<i>58.2</i>

## Persons

- Colorectal cancer (1,181 new cases) is the most common cancer for South Australians and represents 15.8% of all registrable cancers. This cancer is currently being assessed for its characteristics for a national screening program with pilot sites in South Australia. Other common cancers include breast (1,040), prostate (946), lung (711) and melanoma (670). Together these five cancers account for 61% of all registrable cancers in this state. The relative frequency of these five cancers is similar to national data, with the exception of lung cancer being more common in South Australia than melanoma, whereas nationally the reverse is true (Table 3).

## 2.2 Mortality

### Males

- Lung cancer is still the main cause of cancer death in South Australian males (21.9%), although the numbers of deaths are declining. Colorectal cancer is the next most important cause, followed by cancers of the prostate, unknown primary site, stomach and non-Hodgkin's lymphomas (Table 1).

### Females

- Breast cancer is the most common cause of cancer death in females in South Australia, accounting for 19.3% of all deaths. Other important cancers in order of importance are those of the lung, colon and rectum, unknown primary site, pancreas, ovary and non-Hodgkin's lymphomas (Table 2).

### Persons

- For South Australians the most common cause of cancer death in 2002 was lung cancer with 606 deaths. Other important cancer causes of death were colorectal cancer (429), female breast (290), prostate (222) and Non-Hodgkin's lymphoma (154) (Table 3).

**Table 3: Most common cancers in South Australia 2002 - Persons**

Site name	Incidence				Mortality				Survival %
	New cases	Rate	Lifetime risk	% all cancers	Deaths	Rate	Lifetime risk	% all cancers	
Colorectal	1,181	68.0	1 in 48	15.8	429	24.2	1 in 68	12.9	54.5
Breast	1,040	62.7	1 in 50	13.9	290	16.8	1 in 92	8.7	77.5
Prostate	946	54.2	1 in 38	12.7	222	12.0	1 in 228	6.7	73.3
Lung	711	40.7	1 in 28	9.5	606	34.4	1 in 41	18.2	11.2
Melanoma	670	40.7	1 in 32	9.0	74	4.3	1 in 319	2.2	90.0
NHL	379	22.4	1 in 17	5.1	154	8.8	1 in 176	4.6	57.4*
Unspecified	272	15.4	1 in 10	3.6	244	13.8	1 in 114	7.3	N/A
Kidney	198	11.6	1 in 8	2.7	84	4.8	1 in 328	2.5	51.7
Bladder	170	9.5	1 in 6	2.3	83	4.5	1 in 527	2.5	59.0
Stomach	162	9.2	1 in 6	2.2	138	7.8	1 in 220	4.2	20.8
<i>All cancers</i>	<i>7,708</i>	<i>451.9</i>	<i>1 in 3</i>	<i>100.0</i>	<i>3,324</i>	<i>188.7</i>	<i>1 in 9</i>	<i>100.0</i>	<i>53.7</i>

Notes: See Appendix 1 for naming and coding conventions. Rates are expressed per 100,000 and standardised to the Australian 2001 population.

Lifetime risk is calculated to age 75 and Survival for (1977-1998) is the relative survival proportion after 5 years (Appendix 2). N/A data not available.

\* NHL - survival rates are for all lymphomas including Non-Hodgkins Lymphoma

## 2.3 Most common cancers by age

Cancer is predominantly a disease of the elderly in South Australia, but the relatively few cancers which do occur in the 0-14 and 15-44 age groups are disproportionately spread across cancer sites compared with older age groups. Those aged 0-44 (approximately half an expected life span) only account for 9% of all cancers (670 new cases).

In people aged 0-14, leukaemia (13 new cases) and cancers of the central nervous system (6 new cases) account for 47.5% of all cancers in this age group.

For people in the 15-44 age group, melanoma (148 new cases), cancers of the female breast (119), testes (36), thyroid (36) and non-Hodgkin's lymphomas (35) are the most commonly reported cancer sites. Cancers such as testicular cancer and thyroid cancer in particular are relatively more common than they are in older age groups. Cancer deaths are very rare in the 0-14 age group, but in the 15-44 age group deaths are largely confined to the commonly diagnosed sites of melanoma, female breast and non-Hodgkin's lymphoma.

## 2.4 Age and sex differences

Cancer occurs more commonly in males than females in South Australia. The age-standardised incidence rate for 2002 for all invasive cancers combined was 526.7 new cases per 100,000 for males and 397.1 new cases per 100,000 for females, resulting in an age-adjusted sex ratio of 1.3. Males have a higher incidence rate for every major cancer site except for breast and melanoma.

The age breakdown of new cancer diagnoses for 2002 was 0-14 (0.7% of all cancers), 15-44 (8.4%), 45-64 (31.5%) and 65+ (59.6%). The age breakdown of cancer deaths is even more biased towards the older age groups with the 65+ age group accounting for 81.6% of all cancer deaths.

For the most common cancers there are some large differences in age-specific incidence and mortality rates. Melanoma shows a relatively even age-specific rate across age groups for both incidence and mortality, whereas prostate and lung cancers have age-specific incidence and mortality rates heavily weighted towards the older age groups. Of special interest is the increase in the age-standardised incidence and mortality rates for female breast cancer, and how the bulk of this increase has come from the 60-69 age group, which is at the older end of the breast screen target group.

## 2.5 Risks of cancer

Risks of cancer may be expressed in many ways. One of the common ways that cancer registries reflect risk in a population is using a measure called lifetime risk or cumulative risk. All around the world these risks are expressed either as a percentage or as a “1 in x” chance. In calculating these risks there is an underlying assumption that the “lifetime” is ages 0 to 74. This standard was set in the 1960s and continued throughout the 1990s and is used in this report. However as life expectancies have increased (males in their late 70s and females in their early 80s) the upper age limit of 74 appears to be limiting or not considering potential healthy years. There are no technical impediments in calculating this risk at any age and therefore to align with Australian life expectancies the age 79 is proposed to represent “lifetime” for the purposes of this calculation. As cancer incidence increases with age it is not unexpected that by increasing the lifetime period that the risk of cancer will be increased.

In an analysis to demonstrate the variation in the assessment of risk, Table 4 shows what the risks of cancer are if the upper age limit for “lifetime risk” was shifted to age 79 for the most common cancers compared with the standard measure of 0-74. The adoption of this new standard for the presentation of risk has not yet been accepted internationally, however other States and Territories are looking to present these data in their forthcoming reports.

**Table 4: Lifetime risks comparing age risks across age ranges 0-74 and 0-79 years**

Site/Age	Incidence				Mortality			
	Males		Females		Males		Females	
	0-74	0-79	0-74	0-79	0-74	0-79	0-74	0-79
Colorectal	1 in 16	1 in 12	1 in 25	1 in 18	1 in 53	1 in 36	1 in 93	1 in 60
Breast	–	–	1 in 10	1 in 9	–	–	1 in 47	1 in 38
Prostate	1 in 11	1 in 8	–	–	1 in 109	1 in 50	–	–
Lung	1 in 24	1 in 16	1 in 42	1 in 33	1 in 30	1 in 18	1 in 63	1 in 46
Melanoma	1 in 31	1 in 24	1 in 35	1 in 30	1 in 195	1 in 148	1 in 813	1 in 629
NHL	1 in 49	1 in 36	1 in 68	1 in 54	1 in 150	1 in 99	1 in 212	1 in 135
Unspecified	1 in 95	1 in 56	1 in 120	1 in 81	1 in 108	1 in 63	1 in 121	1 in 86
Kidney	1 in 75	1 in 58	1 in 211	1 in 167	1 in 226	1 in 179	1 in 573	1 in 355
Bladder	1 in 99	1 in 70	1 in 527	1 in 317	1 in 325	1 in 165	1 in 1,279	1 in 491
Stomach	1 in 111	1 in 74	1 in 328	1 in 164	1 in 141	1 in 81	1 in 488	1 in 244
<i>All cancers</i>	<i>1 in 3</i>	<i>1 in 2</i>	<i>1 in 4</i>	<i>1 in 3</i>	<i>1 in 7</i>	<i>1 in 5</i>	<i>1 in 10</i>	<i>1 in 8</i>

The results for the most common cancers indicate an increase in risk as expected with a broadened age range. The estimates for the 0-79 year age range in many ways give a more realistic estimate of what the average risks are of cancer across a persons lifetime. Of course these risks will vary in those with lifestyles or inherent risk factors that are different from the rest of the population (e.g. family history of cancer, smoking).

Some key results worth noting are the *All cancer* risks which increase for men from 1 in 3 (ages 0-74) to 1 in 2 (ages 0-79) and for women from 1 in 4 to 1 in 3. Some risks increase substantially for particular cancers where there is a high age specific risk in the age group 75-79 such as prostate cancer 1 in 11 to 1 in 8 (a ratio of 1.4), whereas those who have a flattening of risks in this age group such as cancers of the breast (1 in 10 to 1 in 9 – 1.1), ovary (1 in 119 to 1 in 89 – 1.3) and cervix (1 in 282 to 1 in 256 – 1.1) the lifetime risk doesn't change as dramatically.

It is intended that in the longer term these risks over a longer age range, equating with extending life expectancy, will be used more frequently to communicate the risk of cancer in the community.