

3 Trends in cancer incidence and mortality

3.1 All Cancers Combined

Cancer incidence and mortality are showing distinct trends over time in South Australia. While there are encouraging signs in incidence and mortality rates in males in recent years, this is not the case for females who have shown a steady increase in incidence since the 1970s, and a smaller increase in mortality. Despite these changes overtime females are approximately 20% and 40% below their male counterparts in cancer incidence and mortality. Male incidence rates have decreased by 1% per annum between 1998 and 2002, while female rates have decreased by 0.3% per annum. Mortality rates in males have shown a small decline at 0.8% per annum, while females have increased slightly at 0.3% per annum.

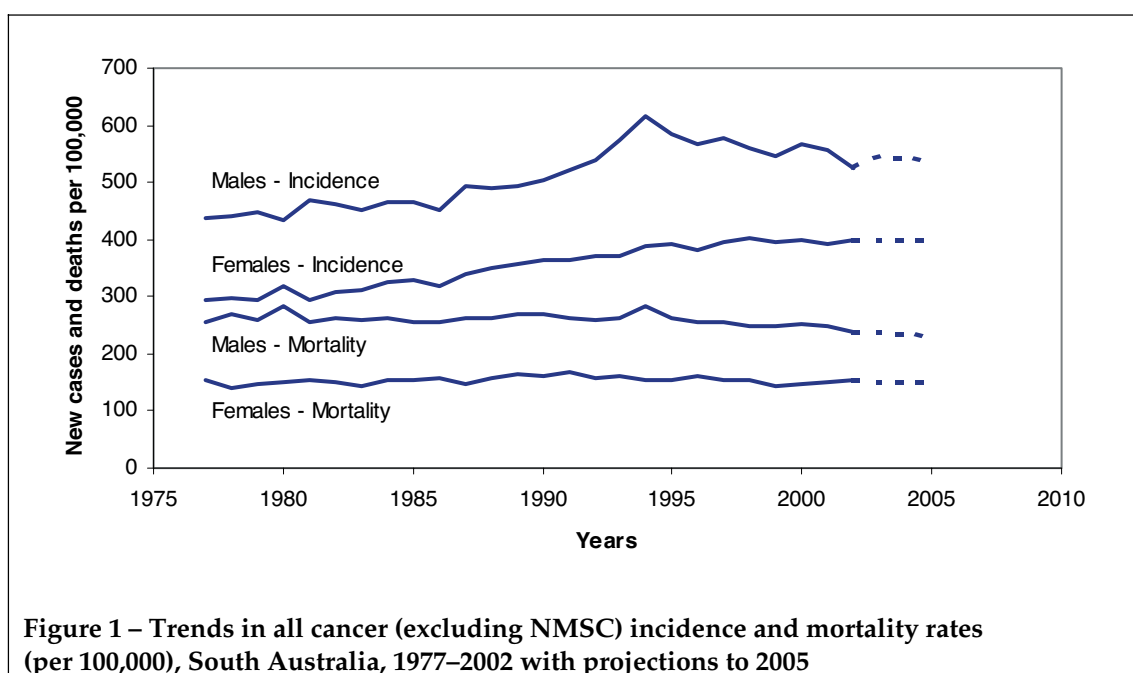


Figure 1 – Trends in all cancer (excluding NMSC) incidence and mortality rates (per 100,000), South Australia, 1977–2002 with projections to 2005

Incidence

The age-standardised incidence rate for South Australia in 2002 was 526.7 new cases per 100,000 for males and 398.0 for females. In the last three years incidence rates have tended to decrease slightly in males due mainly to a continuing decrease in prostate cancer diagnoses since the peak of prostate cancer testing in 1994. The incidence rate in females has stabilised due to a plateau in the number of breast cancer diagnoses. South Australian rates for all cancers do not vary significantly from the national average.

Mortality

The age-standardised mortality rate for South Australia was 239.4 deaths per 100,000 for males and 153.2 for females. In the last three years mortality rates have decreased slightly for males and have been stable for females. Much of this reduction in male mortality has been as the result of a decrease in male lung cancer mortality. South Australian mortality rates are similar to national averages.

Projections

Using a conservative projection methodology numbers of cases, deaths and rates have been projected for the current year 2004 and to 2005 for all cancers and for each of the most common cancers (Tables 5 and 6 and Figures 2-6).

Taking into account the current age/sex patterns of cancer and changing populations over projected years, the overall cancer patterns show a slight, but not significant, decline in mortality rates in males and females and a slight increase in female cancer incidence. A larger increase in incidence is anticipated in males but this is highly dependent on the current patterns of detection of prostate cancer. The projections indicate that by 2005 approximately 300 additional cases are expected in males and 200 in females compared with 2002, and just over a 100 new deaths for both males and females combined. These estimates are important for planning appropriate care services for patients with cancer e.g. hospital services, palliative care.

Table 5: Cancer incidence and mortality rate projections, males, South Australia, 2002-2005

Males Site/Year	Incidence (new cases)				Mortality (deaths)			
	2002	2003	2004	2005	2002	2003	2004	2005
Prostate	121.5 (946)	139 (1,105)	138 (1,126)	137 (1,146)	31.3 (222)	36 (271)	36 (280)	36 (290)
Colorectal	80.0 (627)	81 (648)	82 (668)	83 (688)	29.5 (225)	34 (268)	34 (275)	34 (283)
Lung	56.8 (443)	59 (469)	58 (468)	56 (465)	51.1 (398)	55 (432)	54 (435)	53 (436)
Melanoma	44 (340)	44 (349)	44 (355)	44 (361)	6.6 (51)	6 (49)	6 (51)	6 (53)
NHL	28.0 (218)	23 (188)	24 (194)	25 (201)	11.5 (88)	11 (83)	11 (86)	11 (89)
<i>All cancers</i>	<i>526.7 (4,091)</i>	<i>544 (4,308)</i>	<i>541 (4,373)</i>	<i>538 (4,435)</i>	<i>239.4 (1,821)</i>	<i>238 (1,861)</i>	<i>235 (1,882)</i>	<i>232 (1,903)</i>

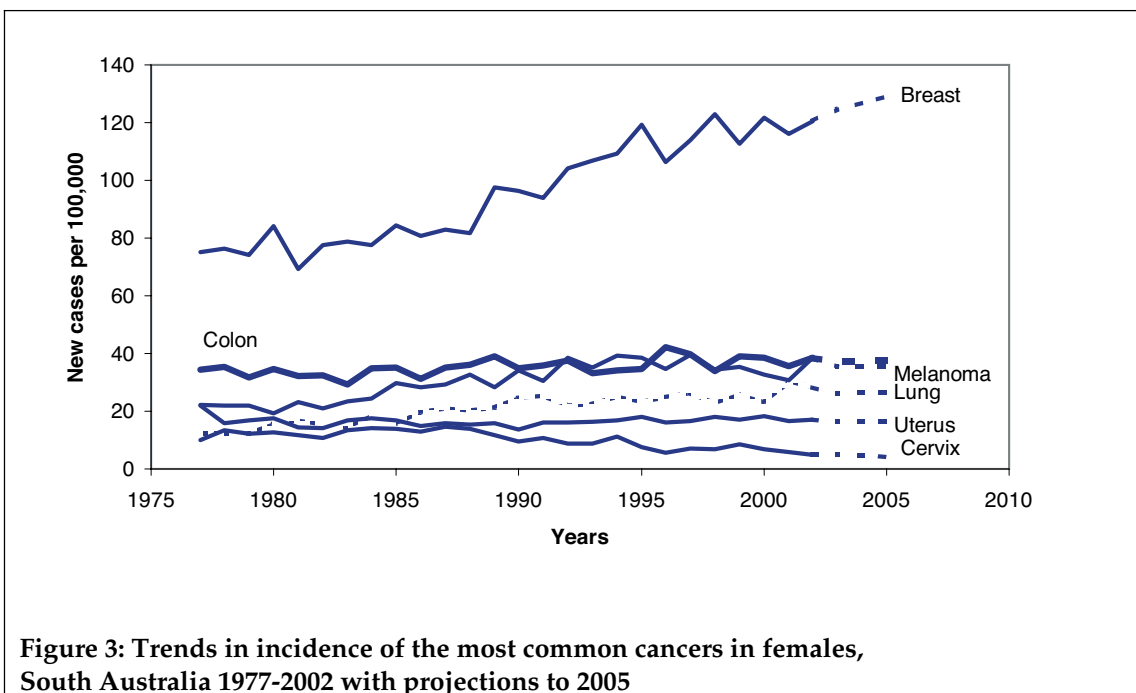
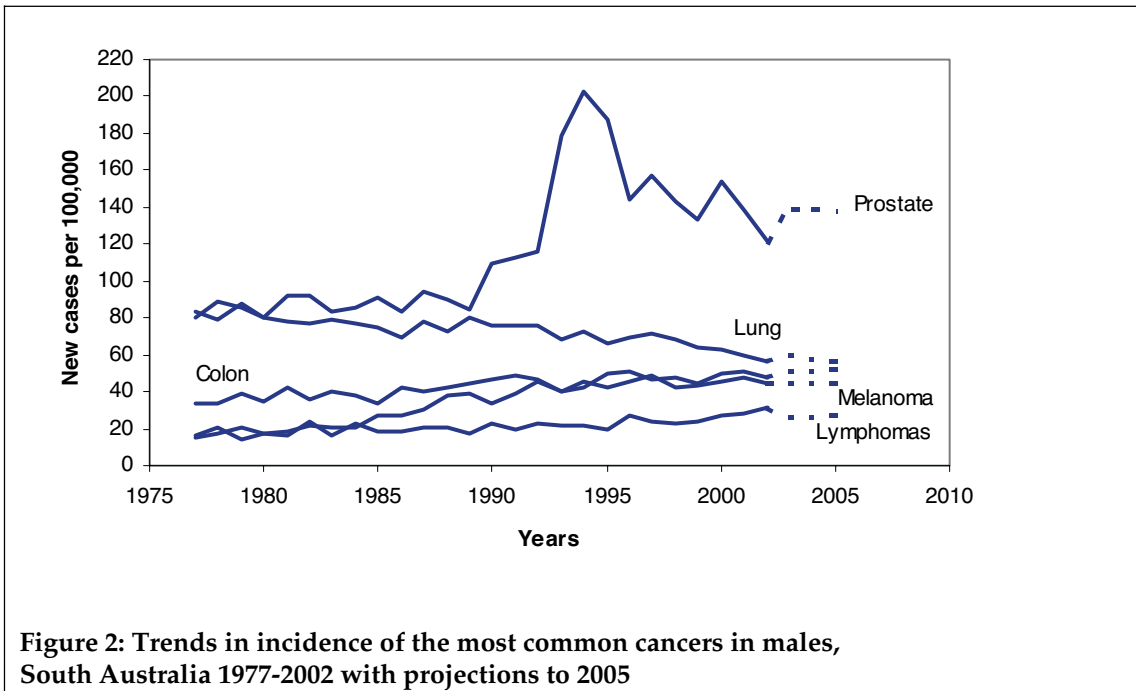
Table 6: Cancer incidence and mortality rate projections, females, South Australia, 2002-2005

Females Site/Year	Incidence				Mortality			
	2002	2003	2004	2005	2002	2003	2004	2005
Breast	120.4 (1,040)	125 (1,096)	127 (1,134)	129 (1,171)	30.9 (290)	29 (279)	29 (284)	30 (290)
Colorectal	56.9 (547)	56 (557)	56 (572)	57 (586)	19.6 (202)	22 (230)	22 (234)	22 (238)
Melanoma	38.7 (330)	36 (304)	35 (306)	35 (309)	2.3 (23)	3 (29)	3 (30)	3 (31)
Lung	28.4 (268)	26 (253)	26 (260)	26 (267)	21.4 (208)	20 (193)	20 (197)	20 (200)
NHL	17.9 (161)	17 (156)	17 (161)	17 (165)	6.9 (66)	7 (76)	8 (78)	8 (80)
<i>All cancers</i>	<i>398.0 (3,617)</i>	<i>399 (3,687)</i>	<i>399 (3,760)</i>	<i>400 (3,831)</i>	<i>153.2 (1,503)</i>	<i>151 (1,510)</i>	<i>150 (1,536)</i>	<i>150 (1,560)</i>

Notes: Rates are expressed per 100,000 and standardised to the Australian 2001 population. Rates are rounded for projected years (new cases and deaths are presented in brackets).

Specific cancers

Trends in the most common cancers have shown some variation. These have responded to shifting risk factors, increased screening or diagnostic testing, and medical intervention. Many of these factors and the current trends are discussed in the following sections featuring specific cancers – prostate, melanoma, breast, lung, colon, rectum, cervix, non-Hodgkin’s lymphoma, leukaemia, pancreas, ovary, uterus, head and neck. Figures 2-5 provide trends for some of these cancers.



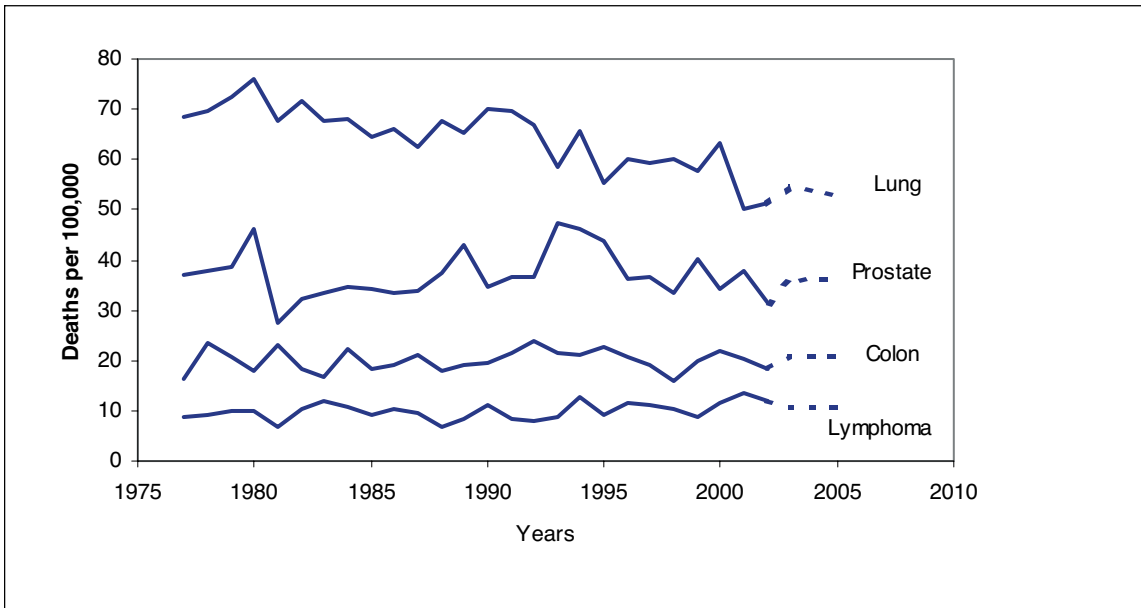


Figure 4: Trends in mortality of the most common cancers in males, South Australia 1977-2002 with projections to 2005

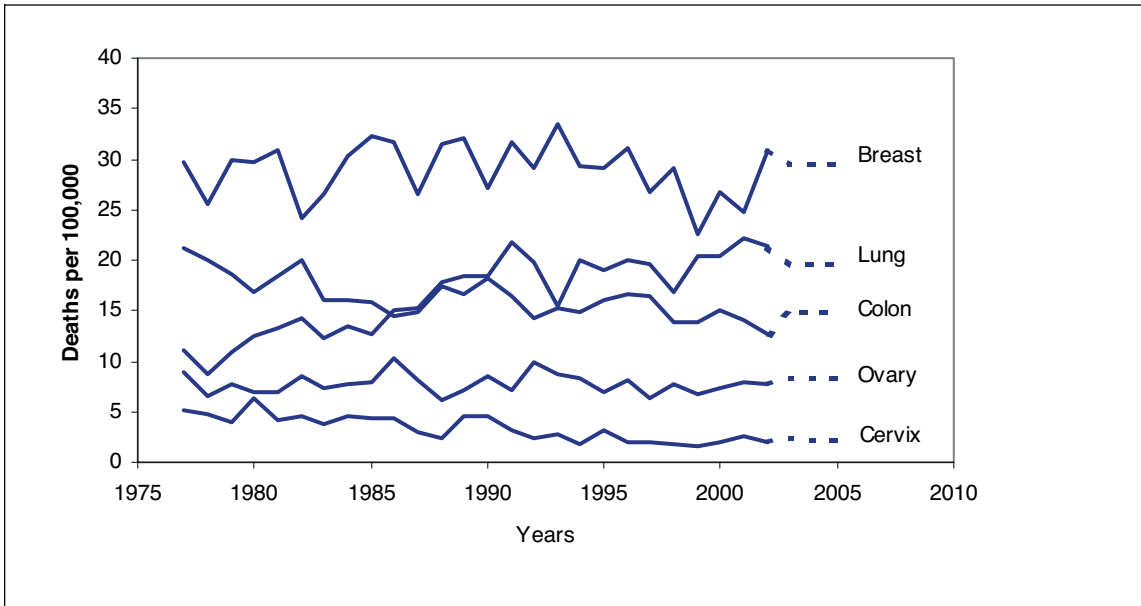


Figure 5: Trends in mortality of the most common cancers in females, South Australia 1977-2002 with projections to 2005

Summary Table 7 - Male incidence and mortality

South Australia – 2002

Males

Site name	Incidence					Mortality					
	New cases	ASR (A)	ASR (W)	Risk	% all Cancer	Deaths	ASR (A)	ASR (W)	Risk	PYLL	% all Cancer
<i>All Cancers</i>	4,091	526.7	378.2	1 in 3	100	1,821	239.4	134.0	1 in 7	11,558	100
Lip	94	12.2	8.5	1 in 114	2.4	1	0.1	0.1	1 in 8,821	18	0.1
Lip & skin of lip	125	16.2	11.4	1 in 84	3.2	2	0.2	0.1	1 in 8,821	18	0.1
Tongue	22	2.8	2.1	1 in 394	0.6	8	1.0	0.6	1 in 1,181	75	0.4
Salivary gland	16	2.1	1.3	1 in 572	0.4	7	0.9	0.6	1 in 1,594	83	0.4
Gum	2	0.2	0.2	1 in 3,486	0.1	2	0.3	0.1	1 in 5,764	8	0.1
Floor of mouth	8	1.0	0.6	1 in 1,648	0.2	5	0.7	0.5	1 in 2,117	85	0.3
Other parts of mouth	8	1.0	0.6	1 in 1,766	0.2	3	0.5	0.2	–	–	0.2
Buccal cavity	181	23.4	16.2	1 in 57	4.7	27	3.5	2.2	1 in 448	268	1.5
Oropharynx	26	3.3	2.5	1 in 363	0.7	10	1.3	0.9	1 in 1,002	145	0.5
Nasopharynx	5	0.6	0.6	1 in 1,771	0.1	1	0.1	0.1	1 in 8,821	18	0.1
Hypopharynx	7	0.9	0.6	1 in 1,250	0.2	4	0.5	0.4	1 in 2,459	43	0.2
Unspecified oral cavity	3	0.4	0.3	1 in 2,231	0.1	2	0.2	0.1	1 in 5,312	3	0.1
Oesophagus	56	7.1	4.4	1 in 206	1.5	51	6.7	4.0	1 in 210	370	2.8
Stomach	105	13.7	8.0	1 in 111	2.7	91	11.8	6.8	1 in 141	628	5.0
Small intestine	14	1.8	1.2	1 in 767	0.4	5	0.6	0.3	1 in 3,123	20	0.3
Large intestine	373	47.8	30.3	1 in 27	9.7	138	18.3	10.1	1 in 94	805	7.6
Rectum	254	32.2	20.9	1 in 36	6.6	87	11.2	7.1	1 in 121	728	4.8
Colon and rectum	627	80.0	51.2	1 in 16	16.3	225	29.5	17.2	1 in 53	1,533	12.4
Liver & intrahepatic bile ducts	51	6.7	4.1	1 in 222	1.3	32	4.2	2.3	1 in 337	188	1.8
Gallbladder & bile ducts	22	2.9	1.6	1 in 636	0.6	19	2.5	1.4	1 in 709	155	1.0
Pancreas	69	8.9	5.0	1 in 193	1.8	71	9.1	5.8	1 in 134	568	3.9
Unspecified digestive organs	2	0.3	0.2	1 in 8,821	0.1	3	0.4	0.3	1 in 3,486	25	0.2
Digestive organs	946	121.4	75.6	1 in 11	24.6	497	64.9	38.1	1 in 24	3,485	27.3
Nasal cavities	8	1.1	0.8	1 in 1,441	0.2	6	0.8	0.6	1 in 2,129	83	0.3
Larynx	37	4.6	3.1	1 in 280	1.0	21	2.7	1.5	1 in 498	105	1.2
Trachea,bronchus & lung	443	56.8	33.1	1 in 24	11.5	398	51.1	28.7	1 in 30	2,060	21.9
Pleura	47	6.0	3.7	1 in 192	1.2	42	5.3	3.1	1 in 249	223	2.3
Respiratory organs	535	68.5	40.6	1 in 20	13.9	467	59.9	33.8	1 in 25	2,470	25.6
Thymus and heart	5	0.6	0.5	1 in 1,913	0.1	3	0.4	0.2	1 in 4,933	55	0.2
Bone and articular cartilage	14	1.9	1.7	1 in 816	0.4	3	0.4	0.3	1 in 3,512	65	0.2
Connective & other soft tissue	45	5.9	4.2	1 in 263	1.2	20	2.6	1.8	1 in 567	260	1.1
Melanoma of skin	340	44.0	30.2	1 in 31	8.8	51	6.6	4.4	1 in 195	550	2.8
Other skin - lip & anus	37	4.8	3.4	1 in 273	1.0	2	0.3	0.1	–	–	0.1
Male breast	7	0.9	0.6	1 in 1,242	0.2	1	0.1	0.1	1 in 5,312	3	0.1
Prostate	946	121.5	74.2	1 in 11	24.6	222	31.3	13.4	1 in 109	375	12.2
Testis	40	5.5	5.2	1 in 268	1.0	0	0.0	0.0	–	–	0.0
Penis and other male genitals	7	0.9	0.5	1 in 1,319	0.2	1	0.1	0.1	1 in 8,821	18	0.1
Bladder	124	16.2	8.8	1 in 99	3.2	64	8.7	4.0	1 in 325	215	3.5
Kidney	131	16.7	10.7	1 in 75	3.4	50	6.5	3.9	1 in 226	355	2.7
Eye	21	2.6	1.7	1 in 480	0.5	4	0.5	0.4	1 in 3,531	78	0.2
Brain	66	8.5	6.2	1 in 149	1.7	58	7.5	5.3	1 in 181	913	3.2
Cranial nerves	4	0.5	0.6	1 in 2,593	0.1	2	0.2	0.2	1 in 6,817	13	0.1
Thyroid gland	17	2.2	1.7	1 in 647	0.4	6	0.8	0.4	1 in 2,765	10	0.3
Other endocrine glands	3	0.4	0.3	1 in 2,181	0.1	1	0.1	0.1	1 in 5,312	3	0.1
Unspecified site	126	16.2	9.2	1 in 95	3.3	111	14.3	8.2	1 in 108	735	6.1
Diffuse NHL	167	21.5	14.3	1 in 63	4.3	72	9.4	5.2	1 in 191	513	4.0
Hodgkin's disease	23	3.1	2.9	1 in 415	0.6	4	0.5	0.5	1 in 2,131	130	0.2
Nodular lymphomas	38	4.8	3.4	1 in 270	1.0	14	1.9	1.2	1 in 798	200	0.8
Other lymphomas	51	6.4	4.4	1 in 205	1.3	16	2.1	1.3	1 in 701	208	0.9
<i>Tumors of histiocytic tissue</i>	0	0.0	0.0	–	0.0	0	0.0	0.0	–	–	0.0
<i>Non-Hodgkins Lymphoma</i>	218	28.0	18.7	1 in 49	5.7	88	11.5	6.5	1 in 150	720	4.8
<i>All lymphomas</i>	241	31.1	21.6	1 in 44	6.3	92	12.1	7.0	1 in 141	850	5.1
Multiple myeloma	75	9.6	5.9	1 in 144	1.9	40	5.2	2.9	1 in 320	243	2.2
All lymphoid leukaemias	80	10.5	7.5	1 in 147	2.1	26	3.5	1.8	1 in 569	128	1.4
Acute lymphatic leukaemia	19	2.6	3.1	1 in 537	0.5	8	1.1	0.6	1 in 1,858	85	0.4
Chronic lymphatic leukaemia	61	7.9	4.4	1 in 202	1.6	18	2.4	1.2	1 in 820	43	1.0
Acute myeloid leukaemia	54	7.1	4.4	1 in 204	1.4	40	5.3	2.7	1 in 373	188	2.2
Chronic myeloid leukaemia	16	2.1	1.5	1 in 539	0.4	8	1.0	0.7	1 in 1,033	55	0.4
<i>All myeloid leukaemias</i>	70	9.2	5.9	1 in 148	1.8	48	6.4	3.4	1 in 274	243	2.6
Chronic monocytic leukaemia	0	0.0	0.0	–	0.0	0	0.0	0.0	–	–	0.0
Monocytic leukaemia	0	0.0	0.0	–	0.0	0	0.0	0.0	–	–	0.0
Other specified leukaemia	16	2.0	1.2	1 in 659	0.4	6	0.8	0.4	1 in 6,817	13	0.3
Unspecified cell leukaemia	4	0.5	0.3	1 in 2,765	0.1	3	0.4	0.2	1 in 5,764	8	0.2
<i>All leukaemias</i>	170	22.2	14.9	1 in 65	4.4	83	11.1	5.7	1 in 175	390	4.6

Note: See Appendix 1 for naming and coding. Rates are expressed per 100,000 and standardised to the Australian 2001 population (A) and New World Standard Population (W). Lifetime risk and PYLL are calculated to age 75, – result not able to be calculated reliably.

Summary Table 8 - Female incidence and mortality

South Australia – 2002

Females

Site name	Incidence					Mortality					
	New cases	ASR (A)	ASR (W)	Risk	% all Cancer	Deaths	ASR (A)	ASR (W)	Risk	PYLL	% all Cancer
<i>All Cancers</i>	3,617	398.0	303.8	1 in 4	100.0	1,503	153.2	106.3	1 in 10	10,855	100.0
Lip	39	4.0	2.8	1 in 436	1.1	0	0.0	0.0	–	–	0.0
<i>Lip & skin of lip</i>	60	6.2	4.5	1 in 251	1.7	1	0.1	0.0	–	–	0.1
Tongue	10	1.1	0.8	1 in 1,188	0.3	2	0.2	0.1	1 in 5,945	3	0.1
Salivary gland	10	1.1	0.8	1 in 1,469	0.3	4	0.3	0.2	–	–	0.3
Gum	0	0.0	0.0	–	0.0	0	0.0	0.0	–	–	0.0
Floor of mouth	3	0.3	0.3	1 in 3,900	0.1	1	0.1	0.1	1 in 11,777	33	0.1
Unspecified oral cavity	10	1.0	0.7	1 in 1,250	0.3	0	0.0	0.0	–	–	0.0
<i>Buccal cavity</i>	93	9.8	7.1	1 in 153	2.6	8	0.7	0.4	1 in 3,951	35	0.5
Oropharynx	3	0.3	0.2	1 in 3,853	0.1	1	0.1	0.1	1 in 6,943	13	0.1
Nasopharynx	1	0.1	0.1	1 in 8,885	0.0	1	0.1	0.1	1 in 10,944	28	0.1
Hypopharynx	0	0.0	0.0	–	0.0	0	0.0	0.0	–	–	0.0
Unspecified oral cavity	1	0.1	0.0	–	0.0	2	0.2	0.1	–	–	0.1
Oesophagus	29	3.0	2.1	1 in 429	0.8	23	2.3	1.6	1 in 585	160	1.5
Stomach	57	5.7	3.9	1 in 328	1.6	47	4.6	3.0	1 in 468	235	3.1
Small intestine	18	1.8	1.3	1 in 776	0.5	8	0.9	0.6	1 in 1,105	50	0.5
Large intestine	381	38.7	26.6	1 in 39	10.5	133	12.7	8.0	1 in 148	508	8.8
Rectum	173	18.2	13.0	1 in 71	4.8	71	6.9	4.6	1 in 253	430	4.7
<i>Colon and rectum</i>	547	56.9	39.6	1 in 25	15.1	202	19.6	12.6	1 in 93	938	13.4
Liver & intrahepatic bile ducts	17	1.7	1.2	1 in 810	0.5	19	1.9	1.3	1 in 937	150	1.3
Gallbladder & bile ducts	36	3.4	2.2	1 in 560	1.0	30	2.8	1.8	1 in 733	130	2.0
Pancreas	71	7.1	4.7	1 in 229	2.0	77	7.6	5.1	1 in 221	390	5.1
Unspecified digestive organs	11	1.1	0.7	1 in 2,178	0.3	7	0.6	0.4	1 in 6,943	13	0.5
<i>Digestive organs</i>	792	80.7	55.6	1 in 19	21.9	414	40.3	26.3	1 in 45	2,065	27.5
Nasal cavities	3	0.3	0.3	1 in 2,354	0.1	0	0.0	0.0	–	–	0.0
Larynx	8	0.9	0.7	1 in 1,291	0.2	0	0.0	0.0	–	–	0.0
Trachea, bronchus & lung	268	28.4	20.3	1 in 42	7.4	208	21.4	14.8	1 in 63	1,278	13.8
Pleura	8	0.8	0.6	1 in 1,937	0.2	5	0.6	0.5	1 in 1,515	73	0.3
<i>Respiratory organs</i>	287	30.5	21.9	1 in 40	7.9	213	21.9	15.3	1 in 61	1,350	14.2
Thymus and heart	2	0.2	0.1	1 in 5,945	0.1	0	0.0	0.0	–	–	0.0
Bone and articular cartilage	3	0.3	0.3	1 in 3,698	0.1	1	0.1	0.1	–	–	0.1
Connective & other soft tissue	22	2.6	2.2	1 in 656	0.6	13	1.5	1.3	1 in 819	245	0.9
Melanoma of skin	330	38.7	32.0	1 in 35	9.1	23	2.3	1.6	1 in 813	210	1.5
Other skin - lip & anus	25	2.7	2.1	1 in 456	0.7	1	0.1	0.0	–	–	0.1
Female breast	1,040	120.4	96.5	1 in 10	28.8	290	30.9	22.8	1 in 47	3,040	19.3
Cervix uteri	40	4.9	4.3	1 in 282	1.1	19	2.1	1.5	1 in 781	270	1.3
Placenta	0	0.0	0.0	–	0.0	0	0.0	0.0	–	–	0.0
Body of the uterus	152	17.0	13.1	1 in 62	4.2	26	2.6	1.7	1 in 522	133	1.7
Ovary	104	11.3	8.7	1 in 119	2.9	71	7.8	5.8	1 in 151	620	4.7
Vagina	3	0.3	0.2	1 in 6,058	0.1	4	0.4	0.3	1 in 4,189	35	0.3
Vulva	15	1.5	1.1	1 in 946	0.4	9	0.8	0.4	1 in 8,885	18	0.6
Other female genitals	18	1.8	1.3	1 in 819	0.5	13	1.2	0.7	1 in 2,847	53	0.9
Bladder	46	4.4	2.7	1 in 527	1.3	19	1.8	1.1	1 in 1,279	33	1.3
Kidney	67	7.2	5.3	1 in 211	1.9	34	3.4	2.3	1 in 573	280	2.3
Eye	14	1.7	1.5	1 in 691	0.4	1	0.1	0.1	–	–	0.1
Brain	65	7.6	6.5	1 in 158	1.8	51	5.7	4.4	1 in 241	655	3.4
Cranial nerves	1	0.1	0.1	1 in 5,945	0.0	3	0.3	0.3	1 in 4,248	40	0.2
Thyroid gland	62	7.8	7.0	1 in 169	1.7	5	0.5	0.4	1 in 1,687	35	0.3
Other endocrine glands	1	0.1	0.2	1 in 8,883	0.0	0	0.0	0.0	–	–	0.0
Unspecified site	146	14.3	9.5	1 in 120	4.0	133	13.0	8.5	1 in 121	638	8.8
Diffuse NHL	104	11.3	8.5	1 in 110	2.9	44	4.6	3.2	1 in 349	335	2.9
Hodgkin's disease	16	2.0	1.9	1 in 565	0.4	2	0.2	0.1	1 in 5,945	3	0.1
Nodular lymphomas	43	5.0	4.0	1 in 228	1.2	21	2.2	1.6	1 in 536	143	1.4
Other lymphomas	57	6.6	5.4	1 in 178	1.6	22	2.3	1.6	1 in 536	143	1.5
<i>Tumors of histiocytic tissue</i>	0	0.0	0.0	–	0.0	0	0.0	0.0	–	–	0.0
<i>Non-Hodgkins Lymphoma</i>	161	17.9	13.9	1 in 68	4.5	66	6.9	4.8	1 in 212	478	4.4
Multiple myeloma	43	4.5	3.2	1 in 281	1.2	34	3.4	2.2	1 in 513	113	2.3
<i>All lymphomas</i>	177	19.9	15.8	1 in 61	4.9	68	7.1	4.9	1 in 204	480	4.5
All lymphoid leukaemias	50	5.4	4.2	1 in 234	1.4	16	1.7	1.3	1 in 930	233	1.1
Acute lymphatic leukaemia	11	1.3	1.3	1 in 1,082	0.3	7	0.9	0.8	1 in 1,551	205	0.5
Chronic lymphatic leukaemia	39	4.1	2.9	1 in 298	1.1	9	0.8	0.5	1 in 2,320	28	0.6
Acute myeloid leukaemia	39	4.2	3.0	1 in 298	1.1	32	3.3	2.3	1 in 390	240	2.1
Chronic myeloid leukaemia	7	0.8	0.6	1 in 2,324	0.2	4	0.4	0.2	1 in 6,943	13	0.3
<i>All myeloid leukaemias</i>	46	4.9	3.6	1 in 264	1.3	36	3.7	2.5	1 in 370	253	2.4
Chronic monocytic leukaemia	0	0.0	0.0	–	0.0	0	0.0	0.0	–	–	0.0
Monocytic leukaemia	0	0.0	0.0	–	0.0	0	0.0	0.0	–	–	0.0
Other specified leukaemia	4	0.4	0.3	1 in 2,458	0.1	3	0.3	0.2	1 in 5,945	3	0.2
Unspecified cell leukaemia	2	0.1	0.1	–	0.1	4	0.4	0.3	1 in 3,900	35	0.3
<i>All leukaemias</i>	102	10.9	8.2	1 in 118	2.8	59	6.0	4.2	1 in 238	523	3.9

Note: See Appendix 1 for naming and coding. Rates are expressed per 100,000 and standardised to the Australian 2001 population (A) and New World Standard Population (W). Lifetime risk and PYLL are calculated to age 75, – result not able to be calculated reliably.